this is my classroom
Table of Contents

President’s Message 2
About the College 3
Programs by Campus 4
Campus Directory 5
Calendar of Events 2012-2013 6
Administration List 7
Admissions Regulations 8
Academic Regulations 10
Awards 15
Fees and Charges 16
Learner Services 18
Learner Housing 19
Contract Training 20
Continuing Education 22
Office of Distributed Learning 23
International Learners 25
International Contracts 27
Alumni and Advancement 28
Applied Research and Innovation 29

SCHOOL OF ACADEMICS AND APPLIED ARTS

ACADEMICS
Aboriginal Bridging 33
Adult Basic Education 34
Comprehensive Arts and Science Trades 36
Comprehensive Arts & Science Transfer:
College-University 37
Comprehensive Arts & Science Transfer:
College-University - course Descriptions 38
Comprehensive Arts & Science Transition 41
English as a Second Language (ESL) 42

APPLIED ARTS
Community Recreation Leadership 44
Community Studies 45
Digital Animation 46
Early Childhood Education 47
Early Childhood Education by Distance Education 49
Film and Video Production 50
Graphic Communications 51
Graphic Design 52
Journalism 53
Journalism (Post Diploma) 54
Music Industry and Performance 55
Nutrition and Foodservice Management 56
Recording Arts 57
Textiles: Craft & Apparel Design 58
Video Game Design 59
Visual Arts 60

SCHOOL OF BUSINESS AND INFORMATION TECHNOLOGY

BUSINESS
Business Administration/Management 64
Entrance Requirements 64
Business Administration 65
Business Administration (Accounting) 66
Business Administration (General) 67
Business Administration (Human Resource Management) 68
Business Administration (Marketing) 69
Business Management 70
Business Management (Human Resource Management) 71
Business Management (Marketing) 72
Office Administration 73
Office Administration (Executive) 74
Office Administration (Legal) 75
Office Administration (Medical) 76
Office Administration (Records and Information Management) 77

INFORMATION TECHNOLOGY
Computer Systems and Networking 79
Information Management (Post Diploma) 80
Programmer Analyst (Business) Co-op 81
Software Development 82
Web Development 83

SCHOOL OF ENGINEERING TECHNOLOGY
Engineering Technology (First Year) 85
Architectural Engineering Technology 86
Chemical Process Engineering Technology (Co-op) 87
Civil Engineering Technology (Co-op) 88
Computing Systems Engineering Technology (Co-op) 89
Electrical Engineering Technology (Industrial Controls) 90
Electrical Engineering Technology (Power & Controls) Co-op 91
Electronics Engineering Technology General 92
Electronics Engineering Technology Biomedical Geomatics/Surveying Engineering Technology (Co-op) 94
Industrial Engineering Technology (Co-op) 95
Instrumentation and Controls Engineering Technology 96
Mechanical Engineering Technology 97
Mechanical Engineering Technology (Manufacturing) Co-op 98
Petroleum Engineering Technology (Co-op) 99
Process Operations Engineering Technology (Post Diploma) Co-op 100
Safety Engineering Technology (Post Diploma) 101
Telecommunications Engineering Technology (Co-op) 102
Welding Engineering Technician 103

SCHOOL OF HEALTH SCIENCES
Diagnostic Ultrasonography (Post Diploma) 107
Medical Laboratory Assistant 108
Medical Sciences I (General) 109
Medical Laboratory Sciences 110
Medical Radiography 111
Primary Care Paramedicine 112
Rehabilitation Assistant (OTA and PTA) 113
Respiratory Therapy 114

SCHOOL OF INDUSTRIAL TRades
Aircraft Maintenance Engineering Technician 118
Aircraft Structural Repair Technician 119
Automotive Service Technician 120
Baker 121
Bricklayer 122
Cabinetmaker 123
Carpenter 124
Commercial Transport 125
Construction/Industrial Electrician 126
Cook 127
Hairdresser 128
Heavy Duty Equipment Technician 129
Heavy Equipment Operator 130
Heritage Carpentry 131
Industrial Mechanic (Millwright) 132
Instrumentation and Control Technician 133
Machinist 134
Metal Fabricator (Fitter) 135
Mining Technician 136
Mobile Crane Operator 137
Motor Vehicle Body Repairer (Metal and Paint) 138
Non-Destructive Testing Technician 139
Oil Heat System Technician 140
Plumber 141
Power Engineer 4th Class 142
Powerline Technician (Operating) 143
Process Operator 144
Refrigeration & Air Conditioning Mechanic 145
Renovation Technician 146
Sheet Metal Worker 147
Small Equipment Service Technician 148
Steamfitter/Pipefitter 149
Truck and Transport Mechanic 150
Welder 151
Welder/Metal Fabricator (Fitter) 152

TOURISM & NATURAL RESOURCES
Adventure Tourism – Outdoor Recreation 155
Conservation Law Enforcement 156
Emergency Management 157
Environmental Technology (Co-op) 158
Fish and Wildlife Technician 159
Forest Resources Technician 160
Tourism & Natural Resources 161
Gis Applications Specialist (Post Diploma) 161
Hospitality Tourism Management 162
Natural Resources Technician 163
Northern Natural Resources Technician 164

Course Descriptions 166
Index 248
Thank you for your interest in College of the North Atlantic and welcome to our existing learners.

I invite you to explore our 2012-2013 Academic Calendar to see what we have to offer and/or to discover what CNA can do to help you shape your future career. Our programs and training have helped thousands of our learners achieve rewarding and wonderful careers regionally, nationally and internationally and they can do the same for you.

College of the North Atlantic’s primary focus is on the success of its learners. We work closely with industry and community stakeholders to ensure that our program offerings meet the demands of an ever-changing workplace and economy. We actively respond to labour market trends to help you acquire the right skills for the workplace and we work with a number of universities and post secondary institutions to provide you with the ability to further your education through transfer agreements.

CNA’s faculty and staff take an active role in shaping the future of our learners and we are proud to provide a nurturing environment both inside and outside the classroom. We hope that your CNA experience will be both rich and rewarding and that it will serve you well.

Opportunities to grow are all around you! Join us and take the next step towards a promising career.

Ann Marie Vaughan
President & CEO
College of the North Atlantic
Important Notice
This calendar is intended to assist readers to understand the academic and administrative structure, policies and procedures of College of the North Atlantic ("the college") and to provide information about current course offerings at the college.

Various academic and administrative departments have submitted the material contained in this publication. All general information and course references have been checked for accuracy, but there may be inconsistencies or errors. If you become aware of any, please bring these to the attention of the college Registrar. The college reserves the right to make changes in the information contained in this publication without prior notice.

Learners are responsible for familiarizing themselves with the specific information, rules and regulations of the college, as well as the specific requirements of each diploma, certificate or other recognition sought. While advice and counselling are available, it is the responsibility of each learner to ensure that the courses selected at registration are appropriate to the requirements of the learner’s chosen program.

If there is an inconsistency between the general academic regulations and policies published in this Calendar, and such regulations and policies as are established by resolution of the Board of Governors or the college’s administration, the version of such material as established by the Board of Governors or the college’s administration will prevail.

By the act of registration each learner becomes bound by the policies and regulations of College of the North Atlantic.

College of the North Atlantic disclaims all responsibility and liability for loss or damage suffered or incurred by any learner or other party as a result of errors in, interruptions to, or delays or termination of its services, courses, classes or operations, which are caused by events beyond the reasonable control of the college, including force majeure, fire, flood, riot, war, strike, lock-out, damage to college property, financial exigency, computer failure or the incompatibility of college computing systems with other systems.

About the College

College of the North Atlantic is Newfoundland and Labrador’s public college. It is one of the largest post-secondary educational and skills training centres in Atlantic Canada, offering over 100 full-time diploma and certificate programs in:

- Academics and Applied Arts
- Business and Information Technology
- Engineering Technology
- Health Sciences
- Industrial Trades
- Tourism and Natural Resources

The college also offers a full range of more than 300 part-time courses.

Enacted by the House of Assembly, through the College Act, 1996, and headquartered in Stephenville on the Province’s west coast, the college operates 17 campuses across the Province. The public college has brought together and built upon the best programs, traditions, values and vision from the predecessor regional colleges: Cabot College, Labrador College, Eastern College, Central Regional Community College and Westviking College. The focus of the college goes beyond the more traditional approaches to education and training, serving learners of all ages and interests. The college offers continuous learner intake, self-paced learning, and individualized specially designed contract training programs and distributed learning opportunities.

Every year approximately 3000 graduates complete career-oriented certificate and diploma programs ranging from one to three years, preparing them for employment in today’s competitive work environment.
Programs by Campus

**BAIRIN CAMPUS**
Adult Basic Education
Industrial Mechanic (Millwright)
Mechanic
Office Administration
- Executive
Welder

**BAY ST. GEORGE CAMPUS**
Adult Basic Education
Automotive Service Technician
Baker
Business Administration
- General
  - Human Resource Management
- Marketing
Commercial Transport
Community Studies
Comprehensive Arts & Science (CAS)
- Transition
  - Conservation Law Enforcement
  - Construction/Industrial Electrician
  - Cook
  - Digital Animation
  - Emergency Management (Post Diploma)
  - Film and Video Production
  - Hairstylist
  - Heavy Duty Equipment Technician
  - Hospitality Tourism Management
  - Journalism
  - Journalism (Post Diploma)
  - Mobile Crane Operator
  - Music Industry and Performance
  - Office Administration
    - Executive
    - Records & Information Management
    - Primary Care Paramedicine
    - Recording Arts
    - Small Equipment Service Technician
    - Truck and Transport Mechanic
    - Video Game Design
    - Visual Arts

**BONAVISTA CAMPUS**
Adult Basic Education
Construction/Industrial Electrician
Natural Resources Technician
Office Administration
- Executive
Plumber

**BURIN CAMPUS**
Adult Basic Education
Business Administration
- Accounting
- General
- Human Resources Management
Comprehensive Arts & Science (CAS)
- Transition
  - Conservation Law Enforcement
  - Construction/Industrial Electrician
  - Cabinetmaker
  - Cake Decorating
  - Dunk Tank
  - Early Childhood Education
  - Electronics Engineering Technology
  - Engineering Technician (First Year)
  - Environmental Technology Co-op
  - Forest Resources Technician
  - GIS Applications Specialist (Post Diploma)
  - Industrial Mechanic (Millwright)
  - Mining Technician
  - Office Administration
    - Executive
  - Power Engineer (4+ Class)
  - Process Operations Engineering Technology
  - Software Development
  - Welder

**CLARENVILLE CAMPUS**
Adult Basic Education
Business Administration
- Accounting
- General
- Human Resources Management
- Marketing
- Carpenter
Comprehensive Arts & Science (CAS)
- Transition
  - Construction/Industrial Electrician
  - Friends of the Arts Leadership
  - Heritage Carpentry

**CORNER BROOK CAMPUS**
Adult Basic Education
Adventure Tourism-Outdoor Recreation
Business Administration
- Accounting
- General
- Marketing
Civil Engineering Technology Co-op
Comprehensive Arts & Science (CAS)
- Transition
  - Computer Systems and Networking
  - Construction/Industrial Electrician
  - Early Childhood Education
  - Electronics Engineering Technology
    - General
    - Engineering Technology (First Year)
    - Environmental Technology Co-op
    - Fish and Wildlife Technician
    - GIS Applications Specialist (Post Diploma)
    - Industrial Mechanic (Millwright)
    - Office Administration
      - Executive
      - Power Engineer (4+ Class)
      - Process Operations Engineering Technology
      - Software Development
      - Welder

**GANDER CAMPUS**
Adult Basic Education
Aircraft Maintenance Engineering Technician
Aircraft Structural Repair Technician
Agricultural Service Technician
Comprehensive Arts & Science (CAS)
- Transition
  - Engineering Technology (First Year)
  - Hairstylist
  - Instrumentation and Control Technician

**GRAND FALLS-WINDSOR CAMPUS**
Adult Basic Education
Business Administration / Management
- Accounting
- Human Resource Management
- Marketing
Community Studies
Comprehensive Arts and Science (CAS) Trades

**HAPPY VALLEY-GOOSE BAY CAMPUS**
Adult Basic Education
Aboriginal Bridging
Adult Basic Education
Automotive Service Technician
Community Studies
Comprehensive Arts and Science (CAS)
- Transition
  - Construction/Industrial Electrician
  - Early Childhood Education
  - Engineering Technology (First Year)
  - Heavy Duty Equipment Technician
  - Industrial Mechanic (Millwright)
  - Northern Natural Resources Technician
  - Office Administration
    - Executive
    - Powerline Technician Operating
    - Welder

**LABRADOR WEST CAMPUS**
Adult Basic Education
Comprehensive Arts and Science (CAS)
- Transition
  - Heavy Duty Equipment Technician
  - Industrial Mechanic (Millwright)
  - Mining Technician
  - Office Administration
    - Executive
    - Welder

**PLACENTIA CAMPUS**
Adult Basic Education
Comprehensive Arts and Science (CAS)
- Transition
  - Heavy Duty Equipment Technician
  - Industrial Mechanic (Millwright)
  - Machinist
  - Process Operator
  - Welder

**PORT AUX BASQUES CAMPUS**
Adult Basic Education
Business Administration
Cabinetworker
Comprehensive Arts and Science (CAS)
- Transition
  - Non-Destructive Testing Technician
  - Office Administration
    - Executive
    - Welder/Metal Fabricator (Fitter)

**PRINCE PHILIP DRIVE CAMPUS**
Adult Basic Education
Automotive Service Technician
Business Administration / Management
- Accounting
- Human Resource Management
- Marketing
Comprehensive Arts and Science (CAS)
- Transition
  - Community Recreation Leadership
  - Computer Systems and Networking
  - Cook
  - Diagnostic Ultrasonography (Post Diploma)
Early Childhood Education
Early Childhood Education by Distance Education
English as a Second Language (ESL)
Graphic Communications
Graphic Design
Hospitality Tourism Management
Medical Laboratory Sciences
Medical Sciences I (General)
Medical Radiography
Motor Vehicle Body Repairer (Metal and Paint)
Nutrition and Foodservice Management
Office Administration
\[ Executive \\
\[ Legal \\
\[ Medical \\
\[ Records & Information Management \\
Rehabilitation Assistant through Distributed Learning
Respiratory Therapy
Textiles: Craft & Apparel Design
Welder

RIDGE ROAD CAMPUS
Architectural Engineering Technology
Chemical Process Engineering Technology Co-op
Civil Engineering Technology Co-op
Computing Systems Engineering Technology Co-op
Electrical Engineering Technology
\[ Power & Controls Co-op \\
Electronics Engineering Technology
\[ Biomedical \\
\[ General \\
Engineering Technology (First Year)
Geomatics/Surveying Engineering Technology Co-op
Industrial Engineering Technology Co-op
Instrumentation and Controls Engineering Technology
Mechanical Engineering Technology
Mechanical Engineering Technology
\[ Manufacturing Co-op \\
Petroleum Engineering Technology Co-op
Refrigeration and Air Conditioning Mechanic
Safety Engineering Technology (Post Diploma) Co-op
Software Engineering Technology Co-op
Telecommunications Engineering Technology Co-op

SEAL COVE CAMPUS
Adult Basic Education
Construction/Industrial Electrician
Cook
Instrumentation and Control Technician
Oil Heat System Technician
Powerline Technician (Operating)

ST. ANTHONY CAMPUS
Adult Basic Education
Comprehensive Arts and Science (CAS)
\[ Transition \\
Construction/Industrial Electrician
Engineering Technology (First Year)
Office Administration
\[ Executive \\

VIA DISTRIBUTED LEARNING
Business Administration
\[ Certificate \\
\[ General \\
\[ Human Resource Management \\
Early Childhood Education
Information Management (Post Diploma)
Office Administration
\[ Certificate \\
\[ Executive \\
Medical Rehabilitation Assistant (OTA & PTA)
Web Development

Campus Directory

Baie Verte Campus
1 Terra Nova Road
Baie Verte, NL A0K 1B0
tel: (709) 532-8066
fax: (709) 532-4624

Bay St. George Campus
DSB Fowlow Building
432 Massachusetts Drive
P. O. Box 5400
Stephenville, NL A2N 2Z6
tel: (709) 643-7838
fax: (709) 643-7734

Bonavista Campus
301 Confederation Drive
P. O. Box 670
Bonavista, NL A0C 1B0
tel: (709) 468-2610
fax: (709) 468-2004

Burin Campus
105 Main Street
P. O. Box 370
Burin Bay Arm, NL A0E 1G0
tel: (709) 891-5600
fax: (709) 891-2256

Carbonear Campus
4 Pike’s Lane
Carbonear, NL A1Y 1A7
tel: (709) 596-6139
fax: (709) 596-2688

Clarenville Campus
69 Pleasant Street
Clarenville, NL A5A 1Y9
tel: (709) 466-6900
fax: (709) 466-2771

Corner Brook Campus
141 O’Connell Drive
P. O. Box 822
Corner Brook, NL A2H 6H6
tel: (709) 637-8530
fax: (709) 634-2126

Gander Campus
1 Magee Road
P. O. Box 395
Gander, NL A1V 1W8
tel: (709) 651-4800
fax: (709) 651-4854

Grand Falls-Windsor Campus
5 Cromer Avenue
Grand Falls-Windsor, NL A2A 1X3
tel: (709) 292-5600
fax: (709) 489-4180

Happy Valley-Goose Bay Campus
219 Hamilton River Road
P. O. Box 1720, Station “B”
Happy Valley-Goose Bay, NL A0P 1E0
tel: (709) 896-6300
fax: (709) 896-3733

Labrador West Campus
1600 Nichols-Adam Highway
Labrador City, NL A2Y 0B8
tel: (709) 944-7210
fax: (709) 944-6581

Placentia Campus
1 Roosevelt Avenue
P. O. Box 190
Placentia, NL A0B 2Y0
tel: (709) 227-2037
fax: (709) 227-7185

Port aux Basques Campus
59 Grand Bay Road
P. O. Box 760
Port aux Basques, NL A0M 1C0
tel: (709) 695-3562
fax: (709) 695-2963

Prince Philip Drive
1 Prince Philip Drive
P. O. Box 1693
St. John’s, NL A1C 5P7
tel: (709) 758-7284
fax: (709) 758-7304

Ridge Road Campus
153 Ridge Road
P. O. Box 1150
St. John’s, NL A1C 6L8
tel: (709) 758-7000
fax: (709) 758-7126

Seal Cove Campus
1670 Conception Bay Highway
P. O. Box 19003, Station Seal Cove
Conception Bay South, NL A1X 5C7
tel: (709) 744-2047
fax: (709) 744-3929

St. Anthony Campus
83-93 East Street
P. O. Box 550
St. Anthony, NL A0K 4S0
tel: (709) 454-3559
fax: (709) 454-8808

Distributed Learning Services
69 Pleasant Street
Clarenville, NL A5A 1Y9
toll free: 1-877-465-2250
tel: 1-709-465-4640

PROGRAM ENQUIRY COLLEGE-WIDE
toll free: 1-888-982-2268
www.cna.nl.ca
info@cna.nl.ca
**Note:** The schedule contains the dates as they affect the College as a whole. Within these dates, individual campuses will set their own registration schedules, graduation dates and other significant time frames. Please check with the campus concerned for the detailed Calendar.

**August 7 (Tuesday)**  
Registration begins for Distributed Learning - Fall Semester

**September 3 (Monday)**  
Labour Day, College CLOSED

**September 4 (Tuesday)**  
Registration begins – Fall Semester  
Orientation/First day of Fall Semester classes

**September 10 (Monday)**  
Distributed Learning - Online Classes Start – Fall Semester

**September 18 (Tuesday)**  
Last day for adding courses – Fall Semester

**September 21 (Friday)**  
Last day to opt out of the Health and Dental Plan

**October 1 (Monday)**  
Fees Due - Fall Semester

**October 8 (Monday)**  
College CLOSED – Thanksgiving Day

**October 30 (Tuesday)**  
Last day for dropping courses without academic prejudice - Fall Semester

**November 12 (Monday)**  
College CLOSED – Remembrance Day

**December 4 (Tuesday)**  
Registration begins for Distributed Learning – Winter Semester

**December 18 (Tuesday)**  
Last day of classes/examinations – Fall Semester

**December 19 (Wednesday) – January 2 (Wednesday)**  
Christmas Break

**January 3 (Thursday)**  
Registration/Classes begin – Winter Semester  
First day of Winter Semester classes

**January 8 (Tuesday)**  
First day of classes for Distributed Learning – Winter Semester

**January 17 (Thursday)**  
Last day for adding courses – Winter Semester

**January 25 (Friday)**  
Last day to opt out of the Health and Dental Plan for new learners – Winter Semester

**January 30 (Wednesday)**  
Fees Due – Winter Semester

**February 28 (Thursday)**  
Last day for dropping courses without academic prejudice - Winter Semester

**March 4 – 8 (Monday – Friday)**  
Winter Semester Reading Break

**March 29 (Friday)**  
College CLOSED - Good Friday

**April 1 (Monday)**  
Easter Break

**April 2 (Tuesday)**  
Registration begins for Distributed Learning - Intersession

**April 26 (Friday)**  
Last day of classes/examinations - Winter Semester

**April 29 (Monday)**  
Registration/Classes begin – Intersession, Continuing Programs  
Registration begins – Spring Semester

**May 3 (Friday)**  
Last day for adding courses – Intersession, Continuing Programs

**May 6 (Monday)**  
Registration/Classes begin – Technical Intersession, Distributed Learning/ Online classes begin  
Intersession Semester  
Registration/Classes begin – Technical Spring Semester

**May 10 (Friday)**  
Fees Due – Intersession, Continuing Programs  
Last day for dropping courses - Spring Semester  
Last day to opt out of the Health and Dental Plan for new learners – Intersession – Continuing Programs  
Last day for adding courses - Technical Intersession and Distributed Learning

**May 17 (Friday)**  
Fees Due – Intersession, Technical Programs  
Last day to opt out of the Health and Dental Plan for new learners – Spring Semester & Technical Intersession  
Last Day for dropping courses Technical Intersession, and Distributed Learning  
Last day for adding courses - Technical Spring Semester

**May 20 (Monday)**  
College CLOSED – Victoria Day

**May 24 (Friday)**  
Fees Due – Spring Semester, Continuing Programs  
Last day to opt out of the Health and Dental Plan for new learners – Technical Spring Semester

**May 31 (Friday)**  
Fees Due – Spring Semester, Technical Programs

**June 13 (Thursday)**  
Last day for classes/examinations – Spring Intersession - Continuing Programs

**June 21 (Friday)**  
Last day for dropping courses without academic prejudice – Spring Semester

**June 24 (Monday)**  
College CLOSED - Discovery Day

**June 28 (Friday)**  
Last day for dropping courses without academic prejudice – Technical Spring Semester

**July 1 (Monday)**  
College CLOSED - Canada Day

**August 14 (Wednesday)**  
Last day of classes/examinations - Spring Semester

**August 21 (Wednesday)**  
Last day of classes/examinations – Technical Spring Semester

*The Examination Timetable for the CAS Transfer: College-University Program may vary from the above as it is aligned to the MUN Examination Schedule.*

The Continuing Programs Intersession includes programs such as ABE, Trades and other programs where marks from the Winter Semester are not needed prior to registration.
Administration List

BOARD OF GOVERNORS
Cheryl Stagg, Board Chair
Yordest Andrews
Gilbert Bennett
Lynn E. Cole
Roy Hutchings
Bonita Lane-McCarthy
Troy Mitchell
Terry Parsons
Charles Penwell
Stacy Ryan
Beverly Scott
Donna Stone
Leona C. Webb
Wade Pinhorn
Sacha Gale
Edith Hunt, Executive Assistant

HEADQUARTERS
President’s Office
Ann Marie Vaughan, President & CEO
Giselle Borden, Executive Assistant
Geoff Peters, General Counsel
Edith Hunt, Executive Assistant

Academic and Learner Services
Cyril Organ, Vice President – Academic and Learner Services
Elizabeth Chaulk, Associate Vice President – Learner Services
Brian Tobin, Director – Academic Programs & Institutional Research
Tammy Gale, Executive Assistant
Linda Dunne, Registrar

Deans and Chairs
Mohammad Iqbal, Chair – Applied Research
Joanne O’Leary, Chair – Contract Training & Continuous Education
Theresa Pittman, Chair – Distributed Learning Services and Learning Technologies
Brenda Tobin, Dean – Academics and Applied Arts
Mary Vaughan, Dean – Business and Information Technology
Brent Howell, Dean – Engineering Technology and Natural Resources
Robin Walters, Dean – Industrial Trades
Jane Gamberg, Dean – Health Sciences

Development and College Advancement
Corinne Dunne, Vice President – Development and College Advancement
Kayla Downing, Executive Assistant
Daniel Wong, Director – China Project

Finance and Administration
John Hutchings, Vice President – Finance and Administration
Debbie White, Executive Assistant
Richard Vivian, Director – Administration (Finance)
T.B.A., Director – Information Technology

Human Resources
Garry Pinto, Executive Director - Human Resources
Debbie White, Executive Assistant

Qatar Project Office
Greg Chaytor, Vice President – Qatar Project
Vivienne White, Executive Assistant

CAMPUS ADMINISTRATORS
Baie Verte Campus
Emily Foster

Bay St. George Campus
Chris Dohaney
Brian Foley
Darlene Oake

Bonavista Campus
Marilyn Coles-Hayley

Burin Campus
Stephen Warren

Carbonear Campus
Gary Myrden

Clarenville Campus
Marie Caines

Corner Brook Campus
Chad Simms
Bernard Stratton

Gander Campus
Fergus O’Brien

Grand Falls-Windsor Campus
Paul Chafe
Joan Pynn

Happy Valley-Goose Bay Campus
Paul Motty
Shirley Woodward

Labrador West Campus
Richard Sawyer

Placentia Campus
Darrell Clarke

Port aux Basques Campus
Jan Peddle

Prince Philip Drive Campus
John Oates
Trudy Barnes
Gerard Morris

Ridge Road Campus
Paul Forward
Gary Tulk

Seal Cove Campus
Chris Patey

St. Anthony Campus
Fred Russell
Admissions Regulations

ACCESS TO INFORMATION AND PROTECTION OF PRIVACY ACT (ATIPPA)

As a public body, the college is subject to the Access to Information and Protection of Privacy Act which governs who has the right to access your personal information. In addition, the college has long had a practice of not releasing learner information to any person without the consent of the student.

The college will not release your personal information, including information about your attendance, marks or program, to anyone (including spouse, parents, children or employer) without your written consent – except in cases where federal or provincial legislation or court authority authorizes us to do so, or in accordance with an agreement with the learner to disclose.

Please note: Since June 30, 2007, pursuant to Part IV of ATIPPA, the college is no longer permitted to supply any information requested by employers or potential employers (attendance at program, marks, transcripts or copies of diplomas or certificates) without your express written permission, including whether or not you attended the college. Please contact the registrar’s office of your campus to arrange for this consent. Email or telephone permission will not be accepted.

You may be asked for identification before the college will release information to you.

It is the responsibility of the learner to update their personal information on file, including contact information and information regarding consent. Any changes or revocation must be in writing, E-mail or telephone changes will not be accepted.

Please see the college website for more details about the Act and the college’s obligations under the Act.

It is the policy of the college to maintain an “open admission policy”. Learners will be admitted into a program on a first-come, first-served basis as assessed by the date of receipt of their application and on the proviso that the candidate learners meet the minimum qualifications prescribed.

ENTRY INTO FULL-TIME PROGRAMS

Candidates applying for full-time status must satisfy the following requirements:

1. Meet the educational and other requirements for entry into the particular program or meet the mature student requirements.
2. Have reached the legal school-leaving age on the date of commencement of the course/program.
3. Apply on-line or in writing on the approved application form and submit the non-refundable application processing fee.
4. Show evidence of physical qualification in accordance with the requirements of the program selected, where applicable.
5. In the case of high school students, provide a copy of marks obtained. In the case of ABE learners, provide a Record of Achievement or other equivalent official transcript.
6. Provide further documentation or report for an interview or for testing when required.
7. Provide Certificate of Conduct when required.

HIGH SCHOOL DEFINITION

Senior high school graduation means the successful completion of required credit courses as specified by the Department of Education.

High School students who complete modified programs and courses with the third digit “6” or alternate courses with the third digit “7” may require further assessment before eligibility is determined. The completion of a modified (or alternate) program or course may prevent the applicant from being accepted into regular college programs. Applications will be referred to the Coordinator of Disability Services.

HIGH SCHOOL EQUIVALENCY

The following High School Equivalency Certificates will be considered for acceptance into college programs:


Persons holding certificates as listed in 1, 2, or 3:

• will be accepted into certificate programs without further evaluation.
• may be required to report for further evaluation before acceptance into diploma programs is established; and upon being accepted, those applicants may be required to complete additional courses before entering the diploma program of their choice.

MATURE STUDENT REQUIREMENTS

Applicants who do not meet the educational prerequisites for the program they wish to enter may be considered for admission on an individual basis provided the following conditions are met:

1. Applicants are at least 19 years of age at the time of application.
2. Applicants have been out of high school for at least one year.
3. Applicants present a certified copy of grades for the highest educational level attained.

4. Applicants complete the standardized assessment instrument at a level approved by the college.

SPECIAL ADMISSIONS

Special circumstances may exist whereby applicants who fail to meet all of the criteria for admission may be recommended for acceptance. In such cases, the application will be referred to the Committee on Special Admissions.

High school students who do not meet the academic requirements (including having reached the legal school leaving age on the date of commencement of the program) must provide a letter of recommendation from the High School Principal or Guidance Counsellor.

Applicants with disabilities, who do not meet program entrance requirements, will undergo further review to determine eligibility for admission. This may include:

1. Reviewing the applicant’s supporting documentation.
2. Reviewing the recommendation of the sponsoring or supporting group (if applicable).
3. Summarizing the applicant’s strengths and abilities.
4. Determining the need for supports required to facilitate the integration of the applicant.
5. Identifying necessary resources/equipment required to facilitate the training.

HOME SCHOoled ADMISSION GUIDELINES

Home schooled applicants will be reviewed for general admission by the college’s Special Admissions Committee. The applicant will be asked to provide proof of standardized assessment results and/or complete the standardized assessment instrument used by the college.

ADMISSIONS PORTFOLIO GUIDELINES

Definition:

A portfolio is a compilation of materials such as drawings, photographs, paintings, film or videos, writings, prints, collages, ceramics, crafts, textile patterns, audio tapes, musical scores, computer imaging, design or other areas of creativity that reflect the prospective learner’s interests, abilities and experience.

Purpose:

The purpose of the portfolio is to establish applicant suitability for the program of study.

General Guidelines:

1. All work in the portfolio should be clearly labeled with the prospective applicant’s name, title of the work, number of pieces, date completed and materials used;
2. The college will only accept portfolios in a proper portfolio folder or case;
3. Portfolios should include a printed listing of the contents of the portfolio;
4. All works should fit into a standard size portfolio case and may be presented in their original form;
5. Large scale, fragile or 3-dimensional work should be submitted in 35 mm. colour slide form, as digital images at a resolution of 150 ppi or as colour photographic or digital prints;
6. All visual-related work should be original. An affidavit is required stating that the work is original. All music-related work should be performed by the applicant and reference should be made as to whether or not the work is:
   a. a “cover” of another’s work
   b. public domain
The application is correctly completed with all documentation if they are not claimed within one month of the date of notice of the decision of the Assessment Committee. The college assumes no responsibility for loss of or damage to portfolios submitted.

**Portfolio Screening:**

All portfolios will be reviewed by an Assessment Committee that includes faculty representatives. The Assessment Committee will be looking for the following in a portfolio:

1. Originality of ideas or concepts;
2. Technical skills;
3. Observation and interpretive skills;
4. A variety of media;
5. Presentation and organization of material.

**Submission Deadline:**

Applications are strongly urged to apply early as programs are filled on a first-come, first-served basis. Portfolios should be submitted with the application.

**Academically Dismissed Learners**

1. Applications from academically dismissed learners will be received at any time but learners will not be accepted to return on a full-time basis until a six-month period from the date of dismissal has elapsed. Learners who have been academically dismissed will be permitted to register for one course for credit in a certificate or diploma program or for any number of courses in the Adult Basic Education Program or the Comprehensive Arts and Science Transition Program.

2. Learners who have been academically dismissed from the college on two or more occasions will not be eligible for readmission to the college for a period of two years from the date of dismissal.

3. Learners who are required to withdraw from the college under numbers 1 and 2 (above) must apply for re-admission and their names will be placed at the end of the existing eligibility list.

**Voluntary Withdrawal**

Learners who are in good standing and who voluntarily withdraw due to extenuating circumstances (confirmed by the counsellor or campus administrator) will be required to reapply to return to the program; these learners will be admitted into the first available seat.

**Eligibility Lists**

Eligibility lists will be maintained for each program on a first-come, first-served basis. Candidates will be placed on the eligibility list by the original date of application, provided all entrance requirements are satisfied and all necessary documentation is received.

**Selection Process**

Original Application:

1. Applications will be processed on a “first-come, first-served” basis. Each application will be dated on the date of receipt provided that:
   a. The application is correctly completed with all documentation, and
   b. All educational and other requirements are met, and c. All required fees are paid.
2. Applicants will be notified immediately upon receipt of their application.
3. Applicants enrolled in their final year of high school will be accepted conditionally pending receipt of final exam results.
4. When accepted, applicants will be asked to confirm in writing their intent to register and will be required to pay a registration fee in advance. If applicants fail to confirm within the time specified their place will go to the applicant next on the eligibility list.
5. Applicants for First Year Engineering Technology:
   The college offers a common first year in the Engineering Technology programs. This allows learners to attend the first two semesters of an engineering technology program at the campus nearest their hometown. After completing the first two semesters, learners then enter the campus which offers the program of their choice, to complete the Spring Technical Intersession and the subsequent years of their program.

**Individuals must submit their application to the campus where they intend to complete the first two semesters of their program. This begins a first-come, first-served provincial process which reserves a seat at the designated campus for the appropriate Technical Intersession, and subsequent years of program study. After successful completion of the first two semesters, learners progress to the Technical Intersession in the program for which a seat has already been reserved. Learners who, after registration, wish to change their program choice MUST apply using the Program Transfer process.**

**Student Numbers**

1. A student number will be assigned to every learner who enters the college on either a full-time or part-time basis.

2. Learners will use the number assigned to them regardless of the number of times they register at the college or the campus at which they register.

3. Student numbers must appear on all documents to be added to the learner’s academic or financial files.

**Entry – Non Program Specific**

The only entrance requirement for applicants wishing to apply for a credit course through General Studies is the course prerequisite, if applicable. Applicants must also have reached the legal school-leaving age on the commencement of the course.

Acceptance to any of the courses under General Studies does not constitute a commitment to or admission into any college program.

**Entry – Part-Time Learners**

Learners who apply for part-time status in any program must meet all the requirements outlined for full-time status and will be considered only if a vacancy exists after full-time learners have been accommodated.

**Entry – Concurrent Studies Learners**

Learners in or about to enter their final year of high school will be admitted into college level credit courses in accordance with the following:

1. Learners must hold an academic record with a minimum overall average of 80% based on the marks for all courses completed in high school.

2. Learners will be accepted on a first-come, first-served basis on the provision that space is available.

3. Learners will normally be limited to one credit course in a given semester. Eligibility to enroll is restricted to one semester and will be reviewed for a second semester upon successful completion of the first semester course.

4. All fees and deadlines for regularly admitted learners will apply.

5. Learners applying for admission under this policy will be required to submit:
   a. a completed application form,
   b. an official high school transcript,
   c. a letter from the high school principal or guidance counsellor clearly recommending admission to “Concurrent Studies”, and
   d. a letter from the applicant requesting enrollment in a specific course.

**Entry – Learners with International Study Permit**

Applicants must submit:

1. a completed Application for Admission;
2. an official transcript of academic record;
3. an application fee of CN $100 (non-refundable)
4. proof of proficiency in English

**Language Requirements**

International learners must meet the college’s English proficiency requirements. Applicants who do not meet the required standard of English may be Conditionally Accepted, provided they are tested upon arrival and be required to enroll in an appropriate English class. Registration for other courses will be dependent on their assessed level of English.

**Academic Prerequisites**

Applicants must meet the college’s entrance requirements for the program as set out in the particular program. For most college programs, the entrance requirement is graduation from a secondary school with certain programs requiring achievement in specific subject areas such as Mathematics, English Language, Physics, Chemistry or Biology.

Applicants from British-oriented educational systems should present the general certificate in Secondary Education.

Applicants are required to submit the latest official transcript of marks which will be assessed on an individual basis.

**Proof of Status**

Learners must provide proof of status in Canada at the time of registration.
DEFINITIONS OF ACADEMIC TERMS

Academic Year
Academic Year is the period from September 1 to August 31 consisting of three distinct 15-week semesters.

Access Programs
Developmental programs that learners may enter prior to admission into regular Certificate/Diploma level programs.

Credit Course
An approved and recognized body of content, knowledge, skills assigned a credit value.

Credit
The weighted value of a course based on the depth and breadth of the learning objectives.

Diploma Program
An approved program of study consisting of a prescribed combination of courses that must address: 1. occupational skill development; 2. academic or general study; 3. self interest or personal growth.

Diploma Programs will normally:
1. be prescribed over a minimum of a four semester period;
2. be comprised of a minimum of 80 credits; and
3. consist of a maximum of seven courses per semester.

Advanced Diploma
An approved program of study consisting of in-depth training for graduates of a diploma program or equivalent.

Advanced Diploma Programs will normally:
1. be prescribed over a minimum of one semester;
2. be comprised of a minimum of 20 credits.

Post Diploma
A diploma to be issued upon successful completion of a minimum two-semester program that requires either graduation from a recognized two- or three-year post-secondary diploma or degree, or a combination of other post-secondary work and industry experience acceptable to the college as an entrance requirement.

Certificate Program
An approved program of study consisting of a prescribed combination of courses that must address: 1. occupational skill development; 2. academic or general study; 3. self interest or personal growth.

Certificate Programs will normally:
1. be prescribed over a two semester period;
2. be comprised of a minimum of 40 credits; and
3. consist of a maximum of seven courses per semester.

Continuing Education Studies (Certificate of Participation)
Any non-formalized course, seminar, workshop which addresses one or more of the following areas of study: occupational skill development, academic study, personal interest/growth, for which specific learning or performance is not measured or evaluated.

Certificate of Recognition
Certificates of Recognition may be awarded in various areas of study where learners meet the criteria established for that area of study.

Workplace Development
The college may enter partnerships for the purpose of developing and/or delivering courses or programs. Such partnerships will be formally recognized on parchments issued in the following ways:
1. College Parchment – when a course or program is developed by the college, either in partnership with or on behalf of another institution, agency or industry; a college parchment will be issued. This parchment may contain the phrase “designed in partnership with...” as an additional description of the course/program.
2. Joint Parchment – when a course or program is developed and/or delivered in partnership with another educational institution, a joint certificate formally recognizing both institutions may be awarded. This parchment would recognize both institutions and may contain the signatures of duly authorized officers of both institutions.

Parchments for Workforce Development
1. Diploma in Skill Development
Awarded upon completion of a program that is at least two years in duration for which learning is measured and evaluated.
2. Certificate in Skill Development
Awarded upon completion of a program that is normally one year in duration but not less than one academic semester for which learning is measured and evaluated.
3. Certificate of Achievement
Awarded upon successful completion of a program of less than one academic semester or upon completion of an academic course for which learning is measured and evaluated.

4. Continuing Studies Certificate (Certificate of Participation)
Issued upon completion of a non-formalized course, workshop, seminar or program, for which specific learning or performance is not measured or evaluated.

Full-Time Learner
Learners who are registered for four or more courses in course-based programs.

Part-Time Learner
Learners who are registered for less than four courses in course-based programs.

Learners who are registered for less than 18 hours per week in self-paced programs.

Semester
A 15-week period which will include class/learning time as well as administrative and evaluation time. The academic year will be divided into three semesters: the Fall Semester will commence in September; the Winter Semester will commence in January; and the Spring Semester will commence in May.

Intersession
A five to seven week period which will include class/learning time as well as administrative and evaluation time – usually scheduled at the beginning of the Spring Semester.

Summer Session
A five to eight week period which will include class/learning time as well as administrative and evaluation time – usually scheduled in the second half of the Spring Semester.

Mature Student
Persons who do not meet the entrance requirements for admission into a full-time program, but who are at least 19 years of age at the time of submitting an application, and who have been out of school for at least one year.

ACADEMIC REGULATIONS

It is the policy of the college that upon the successful completion of a program of studies, learners will be awarded one of five parchments:
1. A Certificate in (Program Title)
2. A Diploma in (Program Title)
3. A Post Diploma in (Program Title)
4. An Advanced Diploma in (Program Title)
5. A Certificate in Continuing Studies in (Program/ Course Title)

QUALIFICATIONS FOR A DIPLOMA, AN ADVANCED DIPLOMA, A POST DIPLOMA OR A CERTIFICATE

To qualify for a diploma, an advanced diploma, a post diploma or a certificate, learners must meet the following requirements:
1. Meet all the requirements as prescribed in the program of studies;
2. Obtain a mark of not less than 50% in every course in the program unless otherwise specified;
3. Attain a minimum grade point average of 2.0;
4. Obtain 25% or more of their credits from the college.

Learners who do not complete their diploma program in the prescribed time frame from first registration, may complete the program by following the regulations in effect at the time of first registration provided the program is completed in not more than three years beyond the regular date of completion. A learner who does not complete a program within these prescribed time limits may be required to complete additional courses or to repeat certain courses before being deemed eligible to receive the diploma.

Learners who return to complete a Diploma in Technology may not receive credit for courses that were completed more than five years prior to the date of readmission.

Learners enrolled in accredited Health Sciences programs will be permitted a maximum of one additional year to complete their program of studies.

ADVANCED STANDING

Learners may receive advanced standing for up to 75% of the content of the program to which they have been admitted on the basis of successful completion of this content in the same or similar programs at another college and as assessed by the college.

Applicants who wish to be considered for advanced standing should submit an application with the following documents:
1. Proof of high school completion;
2. Official transcript(s);
3. Calendar description of the courses claimed for credit.
Learners seeking advanced standing will not be excused from any course until written authority has been received from the office of the Registrar.

**TRANSFER OF CREDIT STATUS**

Transfer of credit status is awarded for any course completed at the Marine Institute or at any one of the former colleges provided that the course uses the same course description and course number. When Transfer of Credit is awarded, the college will accept the passing grade as awarded by the institution and this mark will be used in the calculation of the G.P.A.

**EXEMPTION STATUS**

Exemption status is granted if the course has a minimum of 70% equivalency in the course material required. When exemption status is awarded, no mark is reported on the transcript and the G.P.A. is not affected. The college will consider exemptions for courses if the learner received a passing grade.

The college will accept any credit course from a recognized public post-secondary institution as an exemption for an elective even if that course is not offered at the college. For example, a course in linguistics from MUN would be considered to have equivalent value to any other “elective” and, on request, could be granted exemption as a general elective. In some programs electives must be chosen from a designated group of courses, in which case a general elective cannot be used as a substitute.

**CREDIT FOR PRIOR LEARNING**

It is the policy of the college that learners will be given every opportunity to receive credit for past learning experience through a comprehensive systematic process of evaluation referred to as Prior Learning Assessment and Recognition.

Credits awarded for Prior Learning Assessment and Recognition will be recorded on the learner transcript as an exemption or as a mark.

There will be no charge for Prior Learning Assessment and Recognition for learners who are enrolled in a college program. The maximum number of credits that can be awarded through the Prior Learning Assessment process is 75% of the number required to complete the certificate/diploma.

**BLOCK TRANSFER/ADVANCED STANDING**

The college will recognize course work completed in other programs/courses that fulfill the requirements for a designated percentage of the program in which the learner is now applying. When learners are granted a block transfer, their academic grades will be calculated beginning at the point of entry to the program.

**CREDIT SYSTEM**

A credit is a weighted value of a course based on the depth and breadth of the learning objectives.

For the purpose of assigning credit values, the measurement of learning objectives is usually accomplished by equating the value with the period of time scheduled to deliver the content in the conventional lecture methodology as follows:

- **Learning Objectives** scheduled for delivery in a one hour period per week per semester constitutes a one credit value; therefore a course that is scheduled for three hours per week per semester represents a three credit value. However, a recognized laboratory experience is usually measured in the following manner:
  - 2 – 4 hours of lab/week/semester is equivalent to one credit
  - 5 – 7 hours of lab/week/semester is equivalent to two credits
  - 8 – 10 hours of lab/week/semester is equivalent to three credits.

However, the actual process in achieving competency in specified learning objectives can be accomplished via a second equally legitimate and pedagogically sound methodology that is individualized and learner-centered. In this latter methodology which embraces distance delivery, time is a flexible factor, fixed schedules do not apply and the process is learner-driven. This is in contrast to the conventional lecture mode which is teacher-directed with fixed learning times and schedules. The one constant for both modes is the set of learning objectives. Therefore, credit value is assigned by determining the equivalent time required if the learning objectives were delivered in the conventional mode and applying the formula as described under the definition of a credit.

**GRADE POINT MARKING SYSTEM**

The percentage mark in any course is converted to a grade point according to the following table:

- 80% and over: 4
- 70%, 75%: 3
- 60%, 65%: 2
- 50%, 55%: 1
- Below 50%: 0

The grade point average is obtained by multiplying the credit value of each course in the program by the grade point obtained in that course. The sum of all the products is then divided by the total number of credits.

When a course is repeated or a supplementary examination is written, the highest mark attained will be used in the calculation of the grade point average.

When learners complete more than the minimum number of electives, learners are able to select which electives will be used in the calculation of the G.P.A. by making application at the Registrar’s Office.

Without such application the Registrar will select for calculation purposes the required number of electives as recorded chronologically on the transcript.

**ACADEMIC STATUS**

**Clear Standing**

- a. Learners are in clear standing when they have passed all courses and have attained a grade point average of at least 2.0
- b. In Diagnostic Ultrasonography, Medical Laboratory Sciences II and III, Medical Radiography II and III, Respiratory Therapy II and III programs the pass mark is 60%, including a minimum of 60% on the final exam.
- c. In Industrial Trades programs, the pass mark is 70% in the practical component and 70% in the theory component.
- d. In Aircraft Maintenance Engineering Technician and Aircraft Structural Repair the passing grade is 70%.
- e. In Primary Care Paramedicine, the pass mark is 80%, including a minimum of 80% on the final exam.

**Conditional Status**

Learners are classified as conditional when they have a cumulative grade point average between 1.00 and 1.99 in any semester, or when they must clear course deficiencies in order to graduate (e.g., learners who must successfully complete a failed course through supplementary examinations or repetition).

Learners are expected to attempt courses from previous semesters (if available), before registering for any new course, and must consult with a faculty advisor and/or counsellor on or before registration.

**One-Time Forgiveness**

The college will waive the academic dismissal policy on a “one-time forgiveness” basis as per the following:

- a. Those learners are referred to a Counsellor and will participate in a review of their career/academic goals and will develop learning strategies that will lead to success.
- b. An appropriate course load will be developed by the learner in consultation with the academic advisor/counsellor. The maximum course load will not exceed the normal semester workload for the program.

Learners will be permitted to register only for those courses for which prerequisites have been successfully met.

**Academic Dismissal**

Learners who have availed of the “one-time forgiveness” policy and who fail to meet the re-admission requirements for a second occasion will be academically dismissed.

Learners who have been academically dismissed will not be accepted to return until a period of six months has elapsed.

Learners who have been academically dismissed will be permitted to register for one course for credit in a certificate or diploma program, or any number of courses for credit in the Adult Basic Education program or the Comprehensive Arts and Science (CAS) Transition Program.

Academically dismissed learners are not eligible to write supplementary exams.

Learners in the Health Sciences programs will be required to withdraw from their program of study at the point in their program where it is determined that the one additional year (maximum) will not be adequate for them to complete all the requirements of the program.

Learners who have been academically dismissed on two or more occasions will not be eligible for readmission for a period of two years from the date of dismissal.
Promotion Denied (General)
Learners who do not achieve a pass in all courses and a G.P.A. of 2.0 or better may not be able to continue with their program but may return to the college to complete deficiencies.

Promotion – Engineering Technology Programs from First Year
To qualify for the technical intersession, at the end of the first two semesters learners must normally have successfully completed all prescribed courses and attained a minimum overall G.P.A. of 2.00. Learners who have a G.P.A. between 1.00 and 1.99 at the end of the second and subsequent semesters may, with the permission of the college, be conditionally admitted to the next semester if there is a determination that the learners are capable of attaining clear standing by the end of the subsequent semester.

Promotion – Medical Sciences
Promotion from Semester 2 to Semester 3 will be governed by the following:
1. Learners will compete for places in the third semester of the programs.
2. Competition will be based on academic standing in Semesters I and II of the program. Learners must pass all first and second semester courses (minimum of 50%) and have a minimum G.P.A. of 2.00 to be eligible for promotion from second to third semester.
3. Learners’ weighted averages at the end of the second semester will be used to calculate academic standing for purposes of competition.

Promotion from second technical year (6th Semester) For Medical Laboratory II, Respiratory Therapy II and Medical Radiography II learners must have passed all courses in semesters 1 to 5 and have a minimum G.P.A. of 2.00 to be promoted at the sixth semester (start of the clinical year).

Promotion in Nutrition and Food Service Management
Learners must pass all first and second semester courses (minimum of 50%) and have a minimum G.P.A. of 2.00 to be eligible for promotion from Semester 2 to Semester 3.

CO-OP REGULATIONS
1. Work term learning is integral to co-operative education, and a co-op diploma will be awarded to learners who successfully complete work terms as articulated in their program structure. Work terms provide unique learning experiences in a real work place setting. They are program relevant, full-time, 12 – 16 weeks in duration, and normally semestered. Scheduling of work terms varies by program, however they alternate between academic semesters. Work term start and finish dates correspond with academic semesters; however specific dates are established with each employer.

2. To be eligible for a work term, a learner must have “clear standing” for all courses prescribed in the program to the point where the work term marketing occurs; or be able to attain clear standing by writing one supplementary or one upgrading supplementary.

Since work term arrangements are often made in advance of the commencement of the work term and before current academic assessments are available, eligibility will be based on the most recent transcript. Once a learner has been confirmed for a work term, this arrangement shall be honored regardless of academic standing.

3. The co-op term mark will result from both employer and institutional evaluation. Learners must achieve a minimum of 50% in each of the work term performance evaluation and the work term report, and must achieve a combined grade of 60%. The work term mark will be recorded on the learner transcript.
   a. Work term performance is evaluated by the employer and monitored by the college.
   b. The work term report is validated by the employer and graded by faculty/coordinators.
   A learner receiving a 40% or 45% grade on the work term report will be eligible to re-submit the report. The report must be re-submitted no longer than four weeks after receipt of the work term evaluation.

4. Learners are encouraged to obtain their own work terms. Such work terms must be confirmed by letter from the employer and approved by the coordinator on or before the first day on which the learner commences work.

5. Learners are required to sign a waiver giving permission to the college to supply learners’ resumes and transcripts to potential employers.

INDUSTRIAL TRADES
There are incidents where Industrial Trades programs may deviate from standard academic regulations. These differences are identified below:

Credit System
The credit system is not applicable to programs in the School of Industrial Trades. Courses are assigned hours in order to match with the Provincial Apprenticeship Program Structure.

Grade Point Marking System
The Grade Point Marking System is not applicable to programs in the School of Industrial Trades. Courses are assigned hours in order to match with the Provincial Apprenticeship Program Structure.

Conditional Status
Learners are classified as conditional when they must clear course deficiencies in order to graduate. Learners who are required to successfully complete a failed course must follow the regulations as outlined in College Rewrite Policy AC-117 / AC-117PR.

Supplementary Exams
Learners will follow regulations as outlined in the College Rewrite Policy AC-117 / AC-117PR.

A rewrite of a final evaluation provides an opportunity for learners to improve their standing in a course in which they have attained a failing grade. The grade attained in the rewrite will be used to determine the final grade.

The following conditions must be met in order to qualify for a rewrite:
1. A score of 60% on the original exam
2. Attendance of 90%

Learners may be eligible for a maximum of two rewrites during the fall semester; a maximum of two rewrites during the winter semester and a maximum of one rewrite during intersession. For complete details please refer to the College Rewrite Policy AC-117 / AC-117PR.

Deferred Exams
Learners who are prevented by illness or bereavement or other acceptable cause from writing a final examination, where one is scheduled, may apply for permission to write a deferred exam. The deferred examination is the final examination for the individual concerned.

Incomplete
The Incomplete regulation does not apply to Industrial Trades.

TRANSFER OF CREDIT STATUS
Transfer of credit status is awarded for any course completed at any post-secondary institution that matches the course numbers in the Provincial Plan of Training as outlined by the Department of Advanced Education and Skills.

EXEMPTION STATUS
Exemption status is granted if the course has a minimum of 70% equivalency in the course material required. When exemption status is awarded, no mark is reported on the transcript. The college will consider exemptions for courses if the learner received a passing grade in the course.

The college will accept any course from a recognized post-secondary institution as an exemption if the course can match 70% of the objectives in the current Provincial Plan of Training as outlined by the Department of Advanced Education and Skills.

REGISTRATION
It is the policy of this college that all learners will register for full-time programs at the beginning of each semester including the Intersession. Learners accessing “continuous intake” programs will be admitted and will engage in the initial registration process at any time during a semester but will be required to register with all other learners at the beginning of each subsequent semester.

Date of Registration
Learners will register in person on the date and at the time and place prescribed and publicized by the college. Registration for continuous intake programs will be scheduled on a continuous basis, and learners will be admitted as vacancies occur.

Late Registration
With permission, late registration may sometimes be acceptable, up to two weeks after the official registration day.

ADMISSION TO CLASSES
Learners will not be admitted to a class until they have satisfied the regulations regarding entrance and complied with the General College Regulations.

COURSE LOAD
The number of courses constituting a normal semester workload for a learner is specified in the outline for each program as published in the College Calendar.
Extended Course Loads
Learners who wish to register for extra courses must make application to the program administrator or designate.

REPEATING COURSES
With the permission of the campus administrator or designate, learners may repeat any course for which a passing grade has previously been awarded. The original passing grade will remain on the transcript and a second entry will be recorded with the new grade. The highest mark attained will be used in the calculation of the G.P.A.

INDEPENDENT STUDIES
When required courses are not available in a particular semester, full-time learners may make application to the campus administrator to register for such courses through independent study. Applications must be processed within two weeks from the commencement of the term.

Access to courses through Independent Study may be permitted when resources are available and with the permission of the campus administrator and the coordinator (where applicable) in consultation with the faculty. Strategies to ensure adherence to course requirements may be documented in contract format to be signed by the learner, the course instructor, the campus administrator and the program coordinator (where applicable).

CHANGE OF REGISTRATION
Adding Courses
The last date for adding courses is two weeks from the commencement of the semester (one week from the commencement of the intersession/summer session) in which that course begins. In extenuating circumstances, in the normal semester the two-week period may be extended. Learners must complete the appropriate registration change form. Changes must be approved by the campus administrator or designate.

Withdrawing
Courses may be dropped without academic prejudice up to the end of the eighth week from the scheduled date of registration for a semester (or the end of the second week in the intersession/summer session) in which that course begins. In extenuating circumstances, the learner has received the written permission of the campus administrator to drop a course without penalty. Learners are required to complete the appropriate registration change form which must be approved by the instructors concerned and by the campus administrator or designate.

Registered learners who wish to withdraw from the college will be invited to discuss the situation with the appropriate Learners Services official. The withdrawal form must be completed and signed by the appropriate faculty and the campus administrator.

Transfer Process for Engineering Technology (First Year)
If a learner wishes to change his/her original program choice, he/she MUST request a program transfer and complete the appropriate form (Request to Transfer Form) which is available through the campus Learner Services Office.

Applications cannot request a change in program prior to entry into the first year. A request to transfer does not guarantee entry into one’s alternate, “new” program choice. Program transfer will be granted only if sufficient space is available. The following conditions apply:
1. The Request to Transfer Form must be received at the campus Learner Services Office by February 15.
2. Transfers are granted based on (a) space availability and (b) the learner’s weighted average at the end of semester one. In cases where the learner has been exempted from courses in the first semester, the mark(s) obtained by the learner at another post-secondary institution or high school will be used in calculating the weighted average.

LATERAL TRANSFER
Learners wishing to change their program of studies must apply for Lateral Transfer.

From One Program to Another at the Same Campus
a. Applications for Lateral Transfer are available from the campus Learner Services Office. Learners must discuss their request with the Counsellor and their campus administrator and receive written approval.
b. Lateral transfer may be granted if there is space available and the appropriate counselling processes have been followed.

From One Campus to Another in the Same or Different Program
a. Learners must discuss their request with the Counsellor and their campus administrator and receive written approval.
b. Applications for Lateral Transfer are available from the campus Learner Services Office.
c. As certain programs are offered using different instructional methodology at the various campuses, transfer may be limited to the end of given semesters.
d. The campus Learner Services agent will contact their campus administrator at the receiving campus to determine space availability and appropriate transfer time frame.

EXAMINATIONS AND TESTS
Dates of mid-terms, final, and supplementary examinations will be set in advance. No more than two mid-term and final examinations will be scheduled for a learner on any one day.

Learners evaluation will be conducted on a continuous basis. The method of evaluation will be recommended in the official Course Description. The final grades submitted to the campus Learner Services Office will be rounded in units of five.

Instructors shall not be permitted to give quizzes worth more than 10% of the total final mark in the two week period prior to the start of semester examinations. As well no previously unassigned work may be assigned in the last two weeks of the semester. This regulation does not apply to:
1. Courses with no final semester examination.
2. Laboratory examinations.
3. Self-directed and modular courses.
4. Courses with block teaching.
5. Assignments given prior to this period which are due in the two weeks prior to examinations.

6. Courses offered in the intersession and summer session (i.e. 5 – 7 week periods). The time frame for these courses will be one week prior to the start of examinations.

SUPPLEMENTARY EXAMINATIONS
Supplementary examinations provide an opportunity for learners to improve their standing in a course in which they have attained a failing grade of 5 or 10 marks below the stated pass mark.

For upgrading purposes, in their last semester of studies, learners may be given an opportunity to write a supplementary examination for a course in which they have attained the minimum pass mark or five marks above the minimum pass mark.

The grade attained in a supplementary examination will replace only the grade attained in the final examination for the course in question and will be combined with marks previously attained for term work. The following conditions must be met in order to qualify for supplementary examinations:
1. Learners may be eligible to write one supplementary per semester.
2. Supplementary exams will not apply to any course in which the final exam is worth less than 30%.
3. Supplementary examinations will be scheduled and should be written during the supplementary period following the regular examination period.
4. Learners must apply, in writing, for supplementary examinations. The established standard fee per supplementary examination must accompany the application form. Refunds of such fees will be permitted only if permission to write an examination is not granted.
5. If the mark obtained in the supplementary is lower than the original mark obtained on the regular examination, the original mark will be included in calculating the grade point average.
6. Where circumstances warrant, supplementary examinations may be written off-campus; this campus Learner Services Office must be contacted for permission and guidelines prior to the examination period. All costs associated with the administration of off-campus supplementary examinations will be borne by the learners.
7. Academically dismissed learners are not eligible to write supplementary exams.
8. For purposes of transfer of credit, learners must be aware that other post-secondary institutions may not accept grades attained through Supplementary Examinations.

9. Comprehensive Arts and Science (CAS) Transfer: College-University Program learners who write supplementary examinations are advised to consult with the Counsellor at a campus where the Comprehensive Arts and Science (CAS) Transfer: College-University Program is offered concerning their transferability of courses to Memorial University.

Before writing a Supplementary Examination in the Comprehensive Arts and Science (CAS) Transfer: College-University Program, a learner must be informed in writing of #8. The written communication (i.e., form) must be signed/dated by the learner, the instructor of the course and the Campus Administrator. Copies should be kept by the instructor and Campus Administrator, and a copy must be placed in the learner’s file in Learner Services.
DEFERRED EXAMS
Learners, who are prevented by illness or bereavement or other acceptable cause from writing a final examination, where one is scheduled, may apply for permission to write a deferred examination. The deferred examination is the final examination for the individual concerned.

Where possible, deferred exams should be completed by the last day of exams/classes for that semester, or as soon as feasible thereafter.

A request for deferred examinations must be submitted to the campus Learner Services Office as soon as possible after the date on which the regular examination was scheduled. The request for a deferred exam will be assessed by the campus administrator or designate in consultation with faculty members. Learners should note that permission to write deferred examinations is a privilege, not a right, granted solely on the basis of extenuating circumstances.

INCOMPLETE
Subject to the approval of the campus administrator or designate, an incomplete grade may be assigned when the mandatory components of the course are not completed. Incompletes must be cleared by the end of the third week after the beginning of the subsequent semester. If incompletes are not cleared by this date, learners will receive a failing grade.

REASSESSMENT OF GRADES
Learners, who feel that they may not have been accurately assessed on any assignment, examination, term paper, or laboratory or shop exercise should, in the first instance, discuss the matter with the instructor teaching the course. This should be done within three instructional days of the receipt of the assessment. If this does not result in a satisfactory resolution, learners may request that the matter be reviewed by the campus administrator. If this action is taken, it must be done within five instructional days of receipt of the assessment. Unsatisfactory resolution of the dispute at this stage may enable learners to request a review of the grade(s) by the Academic Appeals Committee. Such an appeal should be made within ten days of receipt of the assessment.

RE-READ OF FINAL EXAMINATIONS
Learners may apply to have a final examination paper re-read.

An application for re-read must be made in writing to the campus Learner Services Office within one month following the release of the marks.

A re-read fee must be paid at the time of application. If the mark is changed after the re-read, the fee is refunded; if the mark is unchanged, the fee is forfeited.

The mark obtained in a re-read stands as the official mark in the course and is used in all calculations of the learner’s academic record.

AEGROTAT STATUS
Learners who, through illness or other exceptional circumstances, have been absent from a scheduled final examination, or who have been unable to complete all of the required work in a course, may, on the recommendation of the Counsellor, in consultation with the campus administrator and faculty be given credit for the course.

Application for Aegrotat Standing, with full details duly authenticated, must be made to the campus Learner Services Office within two weeks after the last day of examinations, indicating each course for which the application is being made.

ACADEMIC DOCUMENTATION
Note: Transcripts, diplomas and certificates will be withheld from a learner who is in possession of college property such as books, equipment or supplies or who owes money to the college.

Grade Reports
Grade reports will be issued at the end of each semester and intersession.

Transcripts/Records of Achievement
a. Official Transcripts/Records of Achievement may be obtained at any time from the campus Learner Services Office.

b. A transcript includes the learner’s academic record to date including academic decisions which may have been taken. Transcripts that are released will include the learner’s complete academic history.

LEARNER APPEALS (ACADEMIC)
All registered learners of the college have the right to appeal decisions or rulings which affect them and which pertain to academic matters.

LEARNER APPEALS (NON-ACADEMIC)
All learners of the college have the right to appeal decisions or rulings that affect them and which pertain specifically to non-academic matters. Please consult the Student Handbook for details regarding these policies.
Awards

The college offers opportunities to learners in many programs to compete for a variety of achievement awards, scholarships, bursaries, prizes and graduation awards. An Awards Handbook outlining all awards available, as well as the specific criteria, is available at the Learner Services Office of each campus and the college website www.cna.nl.ca/awards.

DEFINITION OF AWARDS

Achievement Award
Monetary award given in recognition of academic excellence, leadership and community/college involvement.

Scholarship
Monetary award given in recognition of academic merit and financial need.

Bursary
Monetary award given in recognition of academic excellence and financial need.

Prize
Award given in recognition of performance in a particular subject area or task.

Medal
President’s Medals of Excellence, Governor General’s Academic medals, and other medals presented upon graduation.

Honour Society
Learners achieving academic excellence as prescribed by specific criteria will become members of the College of the North Atlantic Honour Society.

Academic Excellence
For the purpose of Achievement Awards and Scholarships, academic excellence refers to a candidate who has attained the minimum weighted/overall average of 75% or higher. Note: some programs are based on weighted average and others are based on overall average.

Academic Merit
For the purpose of Bursaries and Prizes, academic merit refers to a candidate who has attained the minimum weighted/overall average of 60% or higher except in cases where the grading basis is higher for their program. Note: some programs are based on weighted average and others are based on overall average.

APPLICATION PROCESS

Application forms for awards administered by the college are available at the campus Learner Services Office.

Unless otherwise stated, applications are not required in order to be considered for medals, scholarships or prizes.

The deadline for receipt of applications for bursaries and other awards can be obtained at each campus Learner Services Office but is generally no later than October 15.

CRITERIA FOR AWARDS

- To be eligible for any award, a learner must be registered as a full-time learner in a recognized college program.
- To be eligible for renewal of an achievement award, scholarship or bursary the learner must maintain full time status in their recognized college program and continue to meet eligibility requirements of the award.

The eligibility criteria for awarding an achievement award or a scholarship:
- Candidates must be in clear academic standing with a minimum weighted/overall average of 75%.
- At least 80% of the credits accumulated at the point of consideration for awards must have been obtained at the college.
- Courses which are not included in the requirements for graduation will not be included in the calculation of the weighted/overall average.
- Candidates must have attained a passing grade in ALL courses being considered in establishing weighted/overall average. Marks obtained in supplementary exams will be considered in the calculation of the weighted/overall average.
- In cases where the learner repeats a course, the best earned grade will stand for calculation of the weighted/overall average.

The eligibility criteria for awarding a bursary or a prize:
- All candidates in certificate and diploma level programs must be in clear academic standing and have attained a minimum weighted/overall average of 60%, except in cases where the minimum grading basis is higher (i.e. in Industrial Trades it is 70%, and in Paramedicine it is 80%). The weighted average will be used except in cases where programs use an overall average.
- At least 80% of the credits accumulated at the point of consideration for awards must have been obtained at the college.
- Courses which are not included in the requirements for graduation will not be included in the calculation of the weighted/overall average.
- Candidates must have attained a passing grade in ALL courses being considered in establishing weighted/overall average. Marks obtained in supplementary exams will be considered in the calculation of the weighted/overall average.
- In cases where the learner repeats a course, the best earned grade will stand for calculation of the weighted/overall average.

The eligibility criteria for awarding the Governor General’s Medal:
The Governor General’s Medal is awarded to a graduate who has achieved the highest weighted/overall average at each campus, where applicable. The learner must be graduating from a two or three-year, diploma level program.

The eligibility criteria for the President’s Medal of Excellence:
The President’s Medal of Excellence is awarded to one full time graduate in each program who attains the highest weighted/overall average in his/her program. The learner will also receive a Certificate. The learner must meet all college scholarship criteria. The medal is campus based and is available to both the Certificate and Diploma level programs.

The eligibility criteria for the Honour Society:
The college has established an Honour Society to recognize those learners who meet the following criteria:
- Those in diploma-level programs where the passing grade of the courses is 50% to 65% who have a grade point average (GPA) of 4.0
- Those in diploma-level programs where the passing grade of the courses is 80% who have a grade point average (GPA) of 4.0 and no mark less than 90%
- Those in industrial trades programs who have 80% or greater in each course
- Learners who are registered under General Studies who have completed four (4) or more courses within any given semester and who achieve 80% or greater in each course.
- Some campuses offer Office Administration and Business Administration, by the individualized instruction methodology. At campuses where this applies, learners must have completed 16 credits or more in a given semester. Learners in this category must achieve a GPA of 4.0 in order to qualify for the Honour Society.

DOCUMENTATION

Awards administered by the college shall be recorded on the recipient’s academic record. Learners who have achieved honour society status will have their names posted at their campuses at the end of the semester.

OUTSTANDING FEES

Award recipients who owe outstanding fees to the college will have their monetary award credited to their account.

PRIVACY DISCLAIMER

As part of the Scholarship/Awards process, your personal information (name, mailing address, photo, and program of study) may be shared with our donor to advise them of how their scholarship monies have been distributed. If you do not wish to have this information shared, please e-mail sonya.smith@cna.nl.ca. As well, there are times when your personal information may be used for various publications at the college (i.e. honour society posting, award ceremonies booklet, etc.). If you do not wish to have this information published please contact the Learner Services Office at your campus. Many thanks for allowing us to share your successes with the donors who have made these awards possible.

Note: All learners who are selected for an award/scholarship/bursary will be required to provide their Social Insurance Number so that a 14A may be issued for income tax purposes. If you have not previously provided your Social Insurance Number to the college, we will contact you specifically for this purpose.

Note: College of the North Atlantic recommends that learners who are receiving funding and/or sponsorship contact their funding/sponsoring agency for clarification of whether receiving an award may affect their funding/sponsorship status.
1.0 REGULATIONS GOVERNING PAYMENT OF FEES & CHARGES

a. All learner fees must be paid by the date specified in each term. The dates are listed in the Calendar of Events. Learners receiving Student Aid must present their notification of Student Aid form at registration. These learners are permitted to have fees outstanding after registration. Upon receipt of the Student Aid, these learners must pay their accounts in full.

b. Learners who have not paid all fees within the time limits given in these regulations may have their registration cancelled by the college.

c. Learners with outstanding accounts will be ineligible for a subsequent term, will not be awarded a diploma or certificate, and will not be issued a certificate of standing (transcript), grade report, or access to on-line grades until the outstanding account has been paid in full. Learners are notified of their account status on a regular basis. It is the learner’s responsibility to address outstanding balances and to correct any problems.

d. Should the college cancel a program, all tuition and fees paid will be refunded.

e. Continuous intake learners, registering or withdrawing within a term, will pay a prorated tuition and equipment and materials fee per week.

f. Senior Citizens, 60 years and older, are required to pay 50% of academic fees.

g. Distributed Learning (DLS): Some campuses offer programs that do not have all courses delivered in the classroom on-campus and some courses in the program are offered by DLS. Learners enrolled in these programs are therefore required to do courses via DLS. These learners will pay the regular program tuition fees. No additional DLS tuition fee or DLS technology fee will be charged. However, additional tuition and DLS technology fees will be charged under the following circumstances:

i. Any learner electing to do a DLS course over and above their normal term load (requires application to extend normal course load per semester).

ii. Any learner choosing to do an elective through DLS which was previously taken on campus or via DLS.

iii. Any learner electing to do a DLS course instead of an identical on-campus course.

iv. Any learner electing to repeat courses on-campus which were previously taken on-campus or via DLS.

b. Technology fees per course (DL courses) $50.00

2.0 FEES AND CHARGES

2.1 FULL-TIME LEARNERS

Learners enrolled in four (4) or more courses:

a. Application fee per program $30.00 (Non-refundable)

b. Registration fee $95.00

Learner must pay a non-refundable registration fee on confirmation of acceptance to each program at the college. The fee covers registration and student association fees and is paid annually for the duration of the program.

c. Tuition

i. Term based program:

   Regular Term (15-weeks): $726.00

   Intersession (up to 7-weeks in duration) $343.00

ii. Continuous in-take program $49.00 per week

d. Equipment/Materials fee per term (Intended to help offset material costs of program; excluding DLS learners)

   $165.00

2.2 PART-TIME LEARNERS

Learners enrolled in three (3) or less courses. (Including Regular Programs, Day-time General Studies, Distributed Learning and Open Learning)

a. Tuition fee per course $230.00

b. Technology fee per course (DLS Courses) $50.00

2.3 GENERAL STUDIES LEARNERS

General studies learners who enroll in “classroom” courses will pay a maximum tuition of $726.00 and Equipment/Materials fee of $100.00.

General studies learners who enroll in “DLS” courses will pay regular tuition for “classroom” courses and $230.00 tuition plus a $50.00 Technology fee for each DLS course.

2.4 COMMUNITY EDUCATION

Contact local campus for course fees.

2.5 RESIDENCE FEES

Learners must pay a minimum of two weeks residence fees in advance, or upon arrival in residence. Learners intending to move out of residence must give 30 days notice or pay a penalty of $100.00.

Learners are responsible for providing their own bed linens and laundry service.

a. Fees applicable to all campuses

   Residence Application fee $25.00 (These are annual fees and are non-refundable)

   Residence Registration fee $50.00 (These are annual fees and are non-refundable)

b. Daily Room Charges

   Single $15.00

   Double $10.00

c. Rooms and Meals

   Bay St. George Campus

   Room and 10 meals weekly N/A $127.12

   Room and 14 meals weekly N/A $142.85

   Room and 19 meals weekly N/A $167.05

   Burin Campus

   Room and 5 meals weekly $107.19 $87.19

   Room only weekly $60.00 $40.00

   Happy Valley Campus

   Room and 14 meals weekly $162.85 $142.85

   Family Residence (Apartments)

   1 Bedroom-monthly /no meals $300.00

   2 Bedroom-monthly /no meals $365.00

   3 Bedroom-monthly /no meals $425.00

Please refer to Student Health/Dental Plan in the Learner Services section of the calendar for coverage details and rates.

16
2.6 MISCELLANEOUS FEES
a. Supplementary Fee $25.00
b. Re-read Fee $25.00
c. Resource Camp Fee $33.00 per day (Covers food & lodging - not tuition)
ed. NSF Cheques $25.00
e. Replacement I.D. cards $15.00
f. Day care fees (contact applicable campus)

3.0 REFUNDS
a. Application fees are only refundable if program does not go ahead.
b. Registration fees will be refunded only to individuals who were conditionally accepted and upon receipt of High School marks did not meet the academic entrance requirement to the program.
c. Tuition and Equipment/Materials Fees
   i. Term-based (15-weeks)
      A learner who withdraws within the first four weeks of any term will receive a full refund. If the withdrawal takes place within the fifth or sixth week, the refund will be prorated and the learner will be liable for the number of weeks enrolled. No refund will be made after the sixth week of classes.
   ii. Intersession (up to 7 weeks)
      A learner who withdraws within the first two weeks of Intersession will receive a full refund. If the withdrawal takes place in the third week, the refund will be prorated and the learner will be liable for the number of weeks enrolled. No refund will be made after the third week of classes.
   iii. Continuous in-take
      A learner who graduates or withdraws from the program will be liable for the actual number of weeks in class. Any over-payment will be refunded.
   iv. International learners
      Please refer to the International learners section of the calendar for refund information pertaining to International learners.
d. Refunds for Contract Training/Continuing Education
   i. Contracted programs of 15 or more weeks duration
      A learner who withdraws within the first four weeks of any term will receive a full refund. If the withdrawal takes place within the fifth or sixth week, the refund will be prorated and the learner will be liable for the number of weeks enrolled. No refund will be made after the sixth week of class.
   ii. Contracted programs of 6 to 14 weeks duration
      A learner who withdraws/cancels within one week of a training program start date will receive a full refund upon written request. A learner who withdraws/cancels within two weeks of the start date of a training program will receive a 50% refund upon written request. No refund will be made after the second week of the program start date.
   iii. Contracted programs of 2 to 5 weeks duration
      A learner who withdraws/cancels after one day of a course/program start date will receive a full refund upon written request. A learner who withdraws/cancels after the end of the second day of a course/program start date will receive a 50% refund upon written request. No refund will be made after two days.

Refund Policy for Continuing Education Courses
iv. Part-time Continuing Education (i.e. part-time hours/outside regular delivery hours)
   Learners must notify Continuing Education of their Intent to withdraw or cancel at least 5 days prior to the start date of a course to be entitled to a full refund. If the learner notifies the office with the Intent to withdraw or cancel less than 5 days prior to the course start date, the learner will receive a 50% refund. A learner who registers for a course, does not notify the college of their intent to withdraw, and does not attend any classes, will be deemed a “no show” and will forfeit their tuition fees. In the event the college cancels a course offering, learners will receive a full refund. Special circumstances may apply to any of the above conditions, in which case supporting documentation is required.
v. Client Contracts
   The refund policy for client contracts is set out in the College’s standard Contract Training Agreements.

e. Textbooks
   Refunds may be given for returned textbooks under the following conditions:
   i. Books are unmarked and in saleable condition
   ii. Books are returned within the first three weeks after the commencement of classes
   iii. Original receipts are presented before a refund is issued.

Learners are responsible for initiating their own refunds and are required to complete the Student Revenue Refund Form. Forms are available from the Learner Services Office. All tuition refunds will be issued by Headquarters. Any refunds will be applied against outstanding accounts before any monies are returned to the learner. If a learner terminates or voluntarily withdraws from a program of studies, the refund from student loans will be forwarded to the National Student Loan Service Center.

5.0 FINANCIAL APPEALS
Appeals of a financial assessment should be made in writing to the Director of Finance.

Receipts are issued for any financial transactions with the college. Learners should ensure that they obtain and save these receipts for use in resolving any financial conflicts. In the absence of such documentation, the college financial records shall provide the basis for any decision.
Learner Services

INTRODUCTION
Learner Services is the division of the college that provides services to learners that support and guide them in pursuit of their educational goals. Learner Services complements and supports the learner’s academic experiences by creating a college environment that fosters engagement, persistence, growth and development, and academic success. The primary role of Learner Service professionals is to help establish and sustain an environment in which learners can learn and develop.

REGISTRAR’S OFFICE
The Registrar’s Office is responsible for the administration of academic policies and procedures and for an effective system of operations for admissions, registration, enrolment, transfer credit, grades processing, learner awards, learner fees, student loans, transcripts, graduation and certification. The office is also responsible for the provision of information regarding all college programs and courses.

COUNSELLING SERVICES
All learners have access to counselling services from a professional Counsellor for career, social, financial, employment, and personal development needs. As well, Counsellors are responsible for standardized testing and are integral in recruitment and retention initiatives to maximize the learner’s opportunities for success.

DISABILITIES SERVICES
Services for learners with disabilities are available at all campuses through the Coordinators of Disability Services. It is the responsibility of the learner to identify his/her accommodation needs/disability. The learner, the Coordinator and others, as identified, will develop an acceptable program and service plan to remove barriers related to access and success. Delivery of outlined program and services may involve a Resource Facilitator at some campuses.

STUDENT DEVELOPMENT SERVICES
Student Development Officers (SDO) provides learners at each campus with services of a non-academic nature that support overall learning and development and contribute to a positive college experience. The SDO acts as the college liaison between the learners and the college administration/staff and is an advisor to the Student Representative Council on campus. SDO’s may also be involved in coordinating peer tutoring, organizing social and recreation activities, awards programs, graduations, assisting learners with financial aid information, and services as contact for employment-related issues. SDOs may also be involved in campus Career Employment Services including delivering job-search seminars, promoting graduates to potential employers, and gathering information related to learner and graduate employment opportunities. The SDO is also responsible for organizing and conducting recruitment liaison initiatives including participation in career fairs, school visits and trade shows.

LIBRARY SERVICES
Campus Libraries are operated by a staff of Library professionals who provide assistance for learners wishing to make use of the Library resources and services. Every campus Library has a collection of materials intended to support and complement program curriculum at the particular campus along with a varying amount of materials for recreational reading. On line access to article databases and reference books is provided both on campus and from home. Library staff is available to help learners with research, including assistance with finding materials in library collections and through electronic resources. Through inter-library loan, materials can be borrowed from other College of the North Atlantic Libraries and most lending libraries across Canada.

ACCESS FOR SUCCESS
Access for Success (AFS) is a provincial strategy designed to address issues related to learner retention and success. AFS involves the assessment of learners’ strengths and needs, the development of personal career plans, a learner success electronic tracking system, and structured academic advising processes to support learner progress and persistence. For more information on Access for Success, please visit the following websites: http://www.cna.nl.ca/AccessSuccess/default.asp http://www.cna.ca/AccessSuccess/afs.pdf

LEARNER SUCCESS/HELP CENTRES
Learner Success/Help Centres, located on some campuses, provide a location for learners to receive assistance with course work in which they may be experiencing difficulties. Individual and group tutoring may also be available.

STUDENT GOVERNMENT
Student Development Officers may also be involved in coordinating peer tutoring, organizing social and recreation activities, awards programs, graduations, assisting learners with financial aid information, and services as contact for employment-related issues. SDOs may also be involved in campus Career Employment Services including delivering job-search seminars, promoting graduates to potential employers, and gathering information related to learner and graduate employment opportunities. The SDO is also responsible for organizing and conducting recruitment liaison initiatives including participation in career fairs, school visits and trade shows.
THREATS AND ACTS OF VIOLENCE
All learners, staff and other persons visiting the college have the right to a healthy and safe environment free from threat and/or the act of physical or sexual injury, danger or violence. Refer to the Student Handbook for details of Policy SS-215 Acts and Threats of Violence.

APPEALS
All registered learners of the college may appeal a decision or ruling which affects them as it pertains to academic matters, matters of student discipline and student rights and responsibilities. Please consult the Student Handbook for more details.

STUDENT AID
Information and assistance regarding student aid and financial options is available to learners at each campus. Contact the campus Student Development Officer or Counsellor.

CHAPLAINCY SERVICES
Chaplaincy services may be made available to learners at the college upon request.

BOOKSTORE
Textbooks for all courses are available at the college bookstore on each campus.

DAYCARE CENTRES
Daycare centres, located on the Corner Brook, Happy Valley-Goose Bay, and Prince Philip Drive Campuses, can be utilized for children of learners if space is available and set criteria met. These daycare centres are linked to the college’s Early Childhood Education programs. Interested learners can contact either of these campuses for further information.

PARKING
Parking is limited at many campuses and is considered a privilege, not a right. Learners, staff and visitors must park in designated parking areas. “No Parking” and “Restricted Parking” areas are designated either by a sign, road markings or both.

OFF-CAMPUS HOUSING
The Learner Services office at each campus maintains a list of boarding accommodations available. Learners attending College of the North Atlantic in St. John’s can apply to stay at Memorial University residence by calling 709-737-7590. Learners attending College of the North Atlantic in Corner Brook can apply to stay at Grenfell residence by calling 709-637-6266.

COLLEGE RESIDENCES
The college maintains residence facilities at the Bay St. George, Burin and Happy Valley-Goose Bay campuses. Learners wishing to apply for residence should contact the campuses listed below to obtain an application and should apply directly to the Residence Office of the appropriate campus.

The Residence Office
Bay St. George Campus
P. O. Box 5400
Stephenville, NL A2N 2Z6
tel: (709) 643-7764

The Residence Office
Burin Campus
P. O. Box 370
Burin Bay Arm, NL A0E 1G0
tel: (709) 891-5618

The Residence Office
Happy Valley-Goose Bay Campus
P. O. Box 1720, Stn. B
Happy Valley-Goose Bay, NL A0P 1E0
tel: (709) 896-6349

Residence space is limited and therefore the college cannot guarantee a room to everyone who applies. All applications are processed on a first-come, first-served basis only after a learner has been confirmed in a program at the college. For more information please contact the campuses above or call 1-888-982-2268.
Contract Training

CUSTOMIZED TRAINING – ON-SITE, ONLINE, ANYTIME
College of the North Atlantic can develop customized training options for small businesses, corporations, governments, individuals and communities from as extensive a list of more than 100 full-time diploma and certificate programs and a comprehensive range of over 300 part-time courses. Its services are distributed throughout the province at 17 campuses each with a Business Development Officer and six learning centres. In fact, Contract Training and Continuing Education served over 15,000 learners last year alone.

Curriculum is custom designed to meet your specific training goals with a delivery timetable suited to your needs. From a one-day session to programs of several weeks, we deliver anytime, on-site or off-site with the appropriate training infrastructure and resources.

Inquire about our Advanced Certifications and Post Diploma, Post-Journey Training. Call 1.888.982.2268 or visit www.cna.nl.ca/corporate to reach a Business Development Officer near you.

OTHER SERVICES TO HELP YOU SUCCEED
• Custom design curriculum / program development
• Meeting facilitation
• Lab, classroom rental services
• Strategic planning consultancy services
• Training needs analysis
• Videoconferencing rental services
• Workplace essential skills assessments

TRAINING FOR INDUSTRY SECTORS
Organizations in all industry sectors throughout the province need access to training programs so they can remain competitive, recruit and retain employees, diversify, and sustainably develop their long-term potential in Newfoundland and Labrador.

Agrifood/Agriculture Sector Training
New technologies and the changing demands of consumers have significantly changed the agriculture sector. CNA provides comprehensive support to the agrifood/agriculture sector through the Centre for Agrifood Development, whose major services include: product development, primary production skills training, secondary processing skills training, applied research, and special services.

Business & Information Technology Sector Training
Information technology, as both an enabler for existing business processes, and as a sector in itself, has significantly changed business models, operations, products and services, and the competitive environment of small and medium-sized businesses in all industry sectors as well as the public and community sectors. In order to remain competitive, employers and employees need access to quality training. CNA provides comprehensive support to the Business & Information Technology sector.

Construction Sector Training
According to the Construction Sector Council (CSC), our future depends on the construction sector to build, repair, and maintain our homes and buildings, our roads and bridges, and the oil refineries and other structures that fuel community progress. CNA provides comprehensive support to the construction sector. Training covers the needs of a variety of employers – general contractors, builders, construction managers and specialty trade contractors – in new home building and renovation, heavy industrial, institutional and commercial, and civil engineering subsectors.

Energy Sector Training
New technologies and the changing demands of consumers, government and other stakeholders have significantly changed the energy sector. Regulations have evolved. Exploration, development and production methods are more advanced. This applies equally to the non-renewable energy sources. CNA provides comprehensive support to the oil and gas and hydro-electricity industries. We are committed to providing the same support to renewable energy including wind and geothermal sources.

Health Sector Training
Health care providers – government, professionals, researchers, business, and community organizations – along with the clients and communities they serve are challenged to meet or exceed the standards of community health services and institutional health care management, decision making, quality, innovation, program and service delivery, and accountability set by government’s vision that “… all Newfoundlanders and Labradorians will enjoy optimal health.” CNA provides comprehensive support to health sector professional staff, technicians and management.

Mining Sector Training
College of the North Atlantic is committed to providing comprehensive support to the mining sector. Training can address the unique needs of the sector during the exploration, development, production, processing and distribution stages. CNA’s training capabilities include training for occupations related to: prospecting, leadership, management and supervisory development, environment, health and safety certifications, installation, maintenance and repair; construction and extraction; production, and transportation and material moving.

Safety Training
Businesses are required by law to meet the Occupational Health and Safety standards of the workplace. Safety training and certification is essential to ensure a healthy and productive workplace. In order to remain competitive, employers and employees need access to quality training. CNA is committed to providing comprehensive support to all of the provinces’ sectors with quality safety training.

Training for Government
College of the North Atlantic is pleased to provide a range of training courses and programs to provincial, federal, and municipal government departments to support changing technologies and client and service needs and professional development in one or more of the college’s 17 campuses across the province.

Training for Individuals and Community Organizations
Individuals and community organizations in towns and communities across the province comprise a significant number of the over 15,000 learner registrations for contract training and continuing education seeking to upgrade skills for current employment, explore new careers, and complete a range of programs to compete for jobs in Newfoundland and Labrador’s industry and other sectors.

Please refer to the Fees and Charges section of the calendar for refund information pertaining to Contract Training/Continuing Education.

Recent Agrifood/agriculture training and activity:
• AgExpert Accounting
• Blueberry Production
• Food Sanitation
• Greenhouse Operations
• National Food Safety Training (NFSTP)
• Nutritional Analysis and Labelling
• Secondary Processing (Meat, Fruit, and Vegetables)
• Test Market Analysis

Recent business and information technology sector training:
• AutoCAD
• Business Wings Training for Small Business
• Customer Service
• Fibre Optics
• GPS Map and Compass
• Microsoft Office Suite – Word, Excel, PowerPoint, Project
• Simply Accounting
• Supply Management Training

Recent Construction Sector training:
• Air Brake Endorsement
• Alberta “B” Welding
• Blueprint Reading
• Boom Truck Evaluation
• Canadian Electrical Code
• Construction/Industrial Electrical
• Excavator Training
• Oiler Training
• Heavy Equipment Operator
• Mobile Crane
• NDT (Non destructive testing)
• Occupational Health & Safety
• Traffic Control Person (TCP)
• Transportation of Dangerous Goods
• Welder

Recent Energy Sector training:
• Alberta B Welding (post-journeyperson)
• AMA Supervisory Skills Development for Production Supervisors
• Cultural Diversity
• Drill Rig Safety Inspection
• Fall Protection / Fall Acrest
• H2S Alive
• Hazardous “EX”
• Hoisting, Rigging and Slinging
• Hydraulic Safety and Testing Procedures
• Occupational Health and Safety
• Offshore Well Control
• Power Engineering (3rd and 4th Class)
• Pre-employment Floorhand (Roughneck)
• Project Management
• Tractor Trailer Endorsement (Class 3)

Recent Health Sector training:
• Changing Minds Mental Health Education
• Distance EMR / Ambulance
• Emergency Medical Responder (EMR)
• Integrated Nursing Access
• Intravenous Therapy and Symptom Relief
• Medical Device Reprocessing Technician
• Medical Laboratory Assistant
• Medical Terminology
• National Food Safety Training Program (NFSTP)
• Paramedics
• Personal Care Attendant/Home Support Worker
• Transportation of Dangerous Goods
Recent Mining Sector training:
• AMA Leadership Development
• Computer Training
• Heavy Equipment Operator
• Industrial Mechanic
• Machinist
• Mining Technician
• Occupational Health and Safety Committee/ Representative Training
• Process Operations Engineering Technology
• Prospectors Training
• Standard First Aid
• Transportation of Dangerous Goods

Recent Safety training:
• Arc Flash Safety
• Asbestos Abatement
• Back Injury Prevention
• Brush Clearing
• Bus Driver Training
• CFC Refrigerant Handlers
• Chainsaw Safety
• Climbing Techniques and Aerial Rescue
• Confined Space Awareness
• Construction Safety Supervisor
• Construction Safety Training System (CSTS)
• CPR Refresher
• Electrical Hazards Awareness
• Emergency and Standard First Aid
• Emergency Medical Responder
• ENFORM certified safety training
• H2S Alive
• High Voltage Industrial
• Industrial Scaffolding
• Occupational Health and Safety
• Overhead Crane
• Power Line Hazards
• Propane Safety
• Scaffolding Safety Awareness
• Transportation of Dangerous Goods
• WHMIS

Training for Government:
• Conservation and Law Enforcement Training Program
• Microsoft Word, Excel, Access and PowerPoint Training
• Changing Minds

Training for Individuals and Community Organizations:
• Personal Care Attendant/Home Care Worker
• Targeted Initiative for Older Workers
• RNDI Bridging the Gap Training
• Sterile Supply Attendant
• Paramedic Program
• Mining Technician
• Heavy Equipment Operator
• Kitchen Helper
• Commercial Cook
• Power Engineer
• Firearms Safety/Hunter Education
• Construction Safety Supervisor

TO INQUIRE ABOUT CUSTOMIZED TRAINING, CONTACT US:

Call Toll Free: 1.888.982.2268
Email: corporatetraining@cna.nl.ca
Website: www.cna.nl.ca

Business Development Offices:

Baie Verte Campus
P: 709/532-8066
F: 709/532-4624

Bay St. George Campus
P: 709/643-7825
F: 709/643-7748

Bonavista Campus
P: 709/468-1700
F: 709/468-2004

Burin Campus
P: 709/891-5606
F: 709/891-2256

Carbonerae Campus
P: 709/596-8957
F: 709/596-2688

Clarenville Campus
P: 709/466-6947
F: 709/466-2771

Corner Brook Campus
P: 709/637-8570
F: 709/634-2126

Gander Campus
P: 709/651-4804
F: 709/651-3376

Grand Falls - Windsor Campus
P: 709/292-5642
F: 709/489-4180

Happy Valley-Goose Bay Campus
P: 709/896-6316
F: 709/896-3733

Labrador West Campus
P: 709/944-6908
F: 709/944-5413

Placentia Campus
P: 709/227-6281
F: 709/227-7185

Port aux Basques Campus
P: 709/695-3582
F: 709/695-2963
Professional and Personal Development for Life

For those who want to increase their chances of getting a job, upgrade their skills to advance in their present career, maintain their certification, or are interested in pursuing a personal interest, College of the North Atlantic offers a vast array of continuing education programs in many campus locations throughout the province.

Certificate Programs
Continuing Education certificate programs are offered on a part-time basis through evening, daytime or through print-based distance education*. Learners enrolling in a certificate program have the convenience of studying part-time while maintaining current employment.

Certificate programs and professional development courses available include:

- Certified Retirement Professional (offered in partnership with Canadian Institute for Financial Planners)
- Changing Minds - Mental Health Education Program
- Conservation Law Enforcement Training
- Exam Sessions (Real Estate / LLQP / RIBOr
- Maintenance Management Professional (offered in partnership with Plant Engineering and Maintenance Association of Canada)
- Marine Front Line Hospitality
- Medical-Related Training
  - Applied Cardiac Life Support (ACLS)
  - Cardiology Review and Altered Sensorium
  - Drug Calculations for the Paramedic
  - ECG Rhythm Strip Review
  - Emergency Medical Dispatch (EMD)
  - Emergency Medical Responder (EMR)
  - Femoral Traction Splint for Open Femur Fracture
  - IV Therapy Recertification
  - IV Therapy Testing Challenge (for out-of-province entrants)
  - IV Therapy Testing Challenge (for in-province entrants)
  - Medical Device Reprocessing Technician (MDRT)
  - Primary Care Paramedicine (PCP) Refresher
- Occupational Health and Safety (OHS) Fundamentals Certificate Program
- Power Engineering Fourth Class
- Power Engineering Third Class
- Project Management Certificate Program
- Project Management Professional Exam Preparation Course
- Records and Information Management (RIM) Certificate Program
- Security Services
- Supervisory / Management / Leadership Development
- Supply Management Training
- Survey Technician Certificate Program - Level I

* Print-based distance education refers to correspondence courses.

Post-Diploma Program (Post-Graduate)
Ask about our post-graduate diploma programs for those who have graduated from a 3-year diploma program or a university degree. These programs include:

- Diagnostic Ultrasonography
- GIS Applications Specialist
- International Business Management
- Journalism
- Safety Engineering Technology

Credit Courses (transferable to full-time programs)
Credit courses offered through continuing education are part of the following full-time programs:

- Business Management
- Computer Systems and Networking
- Engineering Technology
- Health Sciences
- Office Administration
- Programmer Analyst

Leadership, Management and Supervisory Skills Training
As the country’s baby boomers near retirement, the nation will face a major labour shortage, including administration and management sectors. We must plan for that shortage now by training our existing workforce in management and supervisory skills. College of the North Atlantic, in cooperation with American Management Association, offers one- and two-day management and supervisory courses scheduled every semester. Choose timeslots during evenings or business hours.

Personal Interest Courses
Whether you want to learn a foreign language or you want to make a gourmet dish, Continuing Education offers many personal interest courses to suit your needs:

- Arts and Crafts
- Belly Dancing
- B.O.A.T.
- Cooking / Baking
- Firearms Safety Courses
- Language Training
- Matting and Framing
- Photography
- Welding Course
- Yoga

For a list of course descriptions and schedule information, visit our Continuing Education website at http://www.cna.nl.ca/ce and check out a campus near you. If our schedule of courses does not meet your timeframe, we can work with your business to schedule timeslots that are convenient through our customized training options.

Please refer to the Fees and Charges section of the calendar for refund information pertaining to Contract Training/Continuing Education.

TO INQUIRE ABOUT CONTINUING EDUCATION, CONTACT US.
Call Toll Free: 1.888.982.2268
Email: corporatetraining@cna.nl.ca
website: www.cna.nl.ca

Business Development Officer
Prince Philip Drive Campus
P: 709-758-7135
F: 709-758-7297
Office of Distributed Learning
(http://dls.cna.nl.ca)

College of the North Atlantic’s award-winning Office of Distributed Learning (DL) provides learners new opportunities to complete college courses and programs without having to attend a college campus. All online courses carry the same credentials and academic standards as their classroom equivalents. During the academic year, our HelpDesk provides support seven days a week for extended hours. We provide online chat and toll-free telephone support to ensure that you are supported throughout the duration of your course or program.

Distributed Learning provides a supported alternative approach to learning for individuals who are motivated, disciplined and independent learners who may not be able to attend a campus. DL courses provide the opportunity to complete course requirements from home, work, school or any other location that has an Internet connection.

This flexible approach allows learners to balance the demands of work, family and learning. Teachers and instructors are able to interact by using a digital network from different locations at times that are convenient for both. Information is exchanged between the instructor and the student primarily through the use of email and the discussion areas within the online learning management system. Audio, video and web conferencing tools are also used in some courses.

College of the North Atlantic is closer than you may think!

Visit the DL webpage at http://dls.cna.nl.ca

AVAILABLE COURSES AND PROGRAMS
Distributed Learning provides credit courses from all academic Schools. For further information about specific programs and courses offered through DL see the Course Descriptions section of the calendar or view the Office of Distributed Learning website at http://dls.cna.nl.ca

Distributed Learning offers complete diploma and certificate programs in:
- Business Administration (BA)
- BA Certificate
- BA General Diploma
- BA Human Resources Management Diploma
- Early Childhood Education
- Information Management Post-Diploma
- Office Administration (OA)
- OA Certificate
- OA Executive Diploma
- OA Medical Diploma
- Rehabilitation Assistant (OTA and PTA) Diploma
- Web Development Diploma

Note: The following list of courses is subject to change. Course descriptions can be viewed online at http://dls.cna.nl.ca.

DISTRIBUTED LEARNING COURSES
AC1100 Bookkeeping I
AC1260 Financial Accounting I
AC1350 Income Tax
AC1200 Bookkeeping II
AC2220 Intermediate Financial Accounting I
AC2230 Computerized Accounting I
AC2250 Managerial Accounting I
AC2260 Financial Accounting II
AC2690 Managerial Accounting for HRM
AC3220 Intermediate Accounting II
AC3250 Managerial Accounting II
BL1020 Introductory Biology I
BL1021 Introductory Biology II
BL1320 Anatomy and Physiology
BL1330 Anatomy
BL1350 Anatomy and Physiology
CD2100 Community Development
CD2300 Community Economic Development
CD2310 Computerized Financial and Managing CEO
CJ2100 Canada’s Justice System
CM1060 Essential English I
CM1061 Essential English II
CM1100 Writing Fundamentals
CM1200 Oral Communications
CM1230 Communications for Rehab Assistants
CM1240 Business Communications I
CM1241 Business Communications II
CM1260 Communications in Health Care
CM1370 IM Communications
CM1400 Technical Report Writing I
CM1401 Technical Report Writing II
CM2160 Workplace Correspondence
CM2150 Workplace Communications (Trades)
CM2200 Oral Communications
CM2300 Report Writing
CP1120 Fundamentals of Programming I
CP1330 Windows Server Administration
CP1410 Web Analysis and Design
CP1450 Operating Systems
CP1510 Networking for Programmers
CP1560 Data Management
CP1570 Networking for Programmers
CP2130 Fundamentals of Programming II
CP2170 Windows Server Management
CP2190 Unix
CP2280 Object Oriented Programming in Java
CP2310 Electronic Spreadsheet Applications
CP2320 Micro Database Applications
CP2420 PHP
CP2440 Web Server I
CP2450 Web Server II
CP2460 CGI Programming
CP2470 Web Server
CP2480 Microcomputer Database Programming
CP2510 Unix Management
CP2610 Scripting Languages
CP2640 Desktop Publishing
CP3100 MVC Framework Development
CP3130 Content Management Systems
CP3150 Interface Design and Analytics
CP3160 Multimedia Development
CP3200 Object Oriented Programming
CP3370 Software Development with ASP.NET
CP3410 Fundamentals of Database Design
CP3510 Database Design
CP3470 Systems Analysis and Design I
CR1100 Networking Fundamentals
CR1240 Information Security
CR1260 Client Service for Computer Industry
CR1280 Computer Concepts for Information Management
CR1310 Network Troubleshooting
CR1360 Security for Information Management
CR1450 TCP / IP
CR1510 Web Site Development
CR1550 Website Trends
CR2170 Trends In Web Development
CR2510 Linux Service Administration I
CR2800 Security for Programmers
CR3540 Capstone Project for Information Management
CS1601 Leadership II (Guiding Principles)
DM1200 Document Production I
DM1201 Document Production II
DM1300 Transcription I
DM1380 Transcription II
DM1400 Medical Transcription I
DM1401 Medical Transcription II
DM2200 Document Production III
DM2201 Document Production IV
EC1100 Microeconomics
EC1100 Macroeconomics
EE1150 Child Observation
EE1160 Child Development I
EE1161 Child Development II
EE1170 Curriculum I
EE1171 Curriculum II
EE1270 Foundations of Positive Behaviour Guidance
EE1280 Infant and Toddler Care
EE1300 Family Studies I
EE1301 Family Studies II
EE1450 Creative Activities I - Art
EE1451 Creative Activities II
EE1470 Professional Development (ECE)
EE1800 Inclusion I
EE1801 Inclusion II
EE1840 Understanding Child Maltreatment
EE2160 Child Development III
EE2255 Advanced Guidance Behaviour Strategies
EE2260 Introduction to Child Care Administration
EE2270 Curriculum III
EE2370 Family Studies III
EE2360 Adult Development
EE2450 Creative Activities III – Music
EE2451 Creative Activities IV – Movement
EE2500 School-Age Development and Care
EG1110 Engineering Graphics
EG1430 AutoCAD Essentials
EN2300 Environmental Law
EP1100 Entrepreneurial Studies
EP1110 Introduction to Business
EP1130 Business for Information Systems
EP2200 Business Planning
EP2250 Small Business Development
EP2400 Business Solution
FH1140 Childhood Nutrition
FH1320 Health, Safety and Wellness
FN2110 Business Finance
FW1150 Introduction to Field Placement
FW1310 Field Placement I
FW1311 Field Placement II
FW2310 Field Placement III
FW2311 Field Placement IV
HN1100 Industrial Relations
HN1200 Human Resource Management
HN1230 Human Resource Management I
HN1240 Human Resource Management II
HN1400 Occupational Health and Safety
HN2100 Collective Agreement Administration
HN2110 Dispute Settlement
HN2130 Recruitment and Selection
HN2140 Attendance and Disability Management
HN2150 Training and Development
HN2200 Strategic Compensation and Benefits
HN2210 Human Resource Planning
HN3110 Current Topics in Human Resource Management
HR2400 Professional Development
LW1120 Business Law
LW1210 Labour and Employment Law
LW1230 Business Law
LW1280 Information Management Law
MA1040 Math Fundamentals I
MA1041 Math Fundamentals II
MA1100 Mathematics
MA1211 Mathematics
MA1460 Mathematics of Finance I
MA1670 Statistics

23
MAC1080 Introduction to Computers
MAC1150 Productivity Tools
MAC1220 Productivity Tools I
MAC1221 Productivity Tools II
MAC1240 Computer Applications I
MAC1241 Computer Applications II
MAC2220 Productivity Tools III
MM1900 Problem Solving for IT
MM1950 Workplace Professionalism
MM2500 Computer Graphics
MN2600 Strategic Management
MN3100 Business Ethics
MN3200 Performance Management
MK1100 Marketing I
MK1210 Customer Service - Business
MK1270 Customer Service in Hospitality Industry
MK1600 Professional Selling
MK2100 Marketing II
MK2300 Marketing Research
MK2350 Electronic Commerce
MK2400 Marketing Communications
MUL110 Music and Culture
NC1834 Medical Terminology
OF1100 Office Management I
OF1101 Office Management II
OF2100 Office Management III
OF2101 Office Management IV
OF2300 MCP Billing
OF2400 Medical Office Management I
OF2401 Medical Office Management II
QJ1540 Work Exposure
QJ1520 Classification
OP1400 Records and Information Management I
OP1401 Records and Information Management II
OP1600 Electronic Records Management
PC1100 Political Science
PH1100 Physics
PH1101 Physics
PR1100 Website Project I
PR1101 Website Project II
PR2700 Project Management
PS1120 Psychology I
PS1150 Introduction to Psychology I
PS1151 Introduction to Psychology II
PS2220 Developmental Psychology
PS2340 Organizational Behaviour
RP1100 Record Management Principles
RP1101 Management and Control of Records
SC1120 Introduction to Sociology
SC1150 Principles of Sociology
SC1160 Sociology of Families
SC1400 Labrador Society and Culture
SD1140 Business General Knowledge Seminars I & II
SD1340 Student, Career & Portfolio Development I
SD1341 Student, Career & Portfolio Development II
SD1420 Workplace Skills
SD1630 Working in Health Care
SD1640 Ethics in Health Care
SD1750 College and Career Preparation
SD1910 Workplace Success for the Administrative Assistant
SD2340 Student, Career & Portfolio Development III
SD2341 Student, Career & Portfolio Development IV
SD2370 Student, Career & Portfolio Development II
TA1140 Orientation to Rehabilitation
TA1720 Human Movement and Kinesiology
TA1510 Introduction to Gerontology
TA1600 Introduction to Clinical Skills
TA1610 Clinical Orientation Placement
TA1611 Advanced Clinical Skills
TA1700 Clinical Placement I
TA2130 Disease, Injury and Intervention I
TA2131 Disease, Injury and Intervention II
TA2220 Communication Disorders in Rehabilitation
TA2520 Mental Health Concepts and Techniques
TA2670 Therapeutic Skills I for OTA
TA2680 Therapeutic Skills I for PTA
TA2690 Therapeutic Skills II for Rehabilitation Assistant (OTA and PTA)
TA2740 Clinical Placement II for OTA
TA2750 Clinical Placement II for PTA
TA2760 Clinical Placement III for the Rehabilitation Assistant (OTA and PTA)
TM1100 Medical Terminology I
TM1140 Medical Terminology
TM2100 Medical Terminology II
TR1600 Newfoundland Tourist Destinations
TR1610 Introduction to Tourism
WC1330 Work Term - Website Administrator
International Learners

College of the North Atlantic welcomes learners from all parts of the world. International learners are attracted by the college’s high quality education, reasonable costs, safe and friendly living environment, learner support services, and the acceptability and transferability of its certificates and diplomas. College of the North Atlantic places a high value on the contribution that international learners make towards the development of intercultural communications and understanding throughout the college and the community.

INTERNATIONAL LEARNER APPLICATION PROCEDURE

1. Applicants must complete an Application for Admission Form (available on-line at: http://www.cna.nl.ca/apply/application.asp) and forward it, along with the $100 application fee, proof of English competency and official academic transcripts and graduation certificates to the address listed below. While the application and application fee can be submitted on-line, all the supplementary documents are to be submitted in hard copies.

2. The application will be reviewed once all the appropriate documents are received by the International Learner Coordinator and, if accepted, a Letter of Acceptance will be issued to the learner. The letter will confirm fee, enrolment date, program of study and length of program.

3. Upon receipt of the Letter of Acceptance, the learner is required to pay the registration fee and tuition fee for the first semester of the program of studies. In the event that a student visa/study permit is not awarded by the Canadian Embassy and the learner provides a letter and evidence to support this claim, the tuition will be refunded in full.

4. Applicants should take their letter of acceptance to the nearest Canadian Embassy, High Commission, or Consulate to apply for a Student Visa (if required) and a Study Permit. Generally, applicants will need:
   - documentation verifying personal identification (such as a passport)
   - an original Letter of Acceptance
   - proof of funds available to cover tuition and living expenses
   - assurance that the learner will return to his/her country of residence

For more information regarding the application process, please visit the Citizenship and Immigration Canada website at: http://www.cic.gc.ca/english/study/study.asp.

5. Once an applicant has been issued a Study Permit, he/she should advise the college and make arrangements to travel to Canada to begin his/her program at College of the North Atlantic.

LANGUAGE REQUIREMENTS

All international learners must meet the college’s English proficiency requirements for acceptance into regular programs. The college will accept most internationally recognized tests of English proficiency (e.g. TOEFL paper based 550, TOEFL Internet based 79, TOEFL computer based 213 or equivalent, IELTS overall band score of 6.5 and 6.0 for reading and writing, MELAB minimum 85, etc.). Learners who have met the college’s program requirements but do not provide proof of English proficiency during application will be accepted into their program of choice on the condition that they will be tested for their English proficiency upon arrival at the college.

If learners successfully demonstrate English proficiency on this test, they are accepted into their program of choice and may begin immediately. If learners fail to meet the language requirement, they will be placed in the English as a Second Language (ESL) Program prior to admission to their program of choice. Learners may be allowed to complete some courses from their program concurrent with the ESL Program, depending on their English ability.

ACADEMIC PREREQUISITES

Entrance requirements for each program are set out in the program description. For most programs the entrance requirement is graduation from secondary school with marks equivalent to 60% or better in the Canadian system. Certain programs require achievement in specific subject areas, such as Mathematics, English Language, Physics, Chemistry or Biology. Applicants from British-oriented educational systems should present the General Certificate in Secondary Education. All applicants should submit the latest transcript of marks which will be assessed on an individual basis.

AGE OF LEARNERS

The minimum age accepted by College of the North Atlantic is 17 years.

PROGRAM START DATES

Normally, college programs commence in September of each year, however, at smaller campuses there is more flexibility around entry times. Learners with advanced standing may be able to enter a program in its second or third semester.

English as a Second Language (ESL) classes normally start in September, January, and May. Learners are welcome to start in any semester and may exit at the end of any semester according to their needs. For more information about the program, please contact the International Learner Coordinator.

LEARNER SERVICES AND ON-CAMPUS FACILITIES

The Division of Learner Services provides personal and academic counseling to all learners of the college. Learner tutoring and other learning resources are also available. The Student Council organizes various events/activities for learners throughout the year.

The International Learner Coordinator should be the first contact for all international learners. The Coordinator is sensitive to the special needs of international learners and is experienced in providing support to them. Below is a list of services provided by the Coordinator:

- Orientation.
- Field trips and monthly international events.
- Advice on study permit and student visa renewal, application for work permits, application for the Provincial Nominee Program (PNP) and immigration.
- Liaison with sponsoring agencies, foreign governments, consulates and embassies.
- General advising and counseling regarding personal and financial concerns.

All learners at College of the North Atlantic have free access to the Internet and a variety of software, accessible through the college’s many networked computers.

HEALTH INSURANCE

Newfoundland and Labrador’s Medical Care Plan (MCP) and International Students

The Medical Care Plan (MCP) program applies to any international learner issued an official study permit by Citizenship and Immigration Canada before entering the country. The individual must be attending a recognized post-secondary educational institution in Newfoundland and Labrador (including College of the North Atlantic) for a period of at least 12 months. Dependents of the learner will also be covered under MCP provided they are living in the province and have relevant documentation to support their application.

Coverage will become effective for eligible learners and dependents on the date of registration. Eligible learners must present a registration letter from the college and an MCP application form to be considered for the program. Coverage is renewable on a yearly basis, with a current enrollment letter, and will terminate upon completion of the study program or the end date of study permit, whichever is earlier. Learners must be attending school and residing in the province in order to avail of coverage. Work terms outside the province are not covered.

Please note that only services listed under the Medical Care Insured Services Regulations and the Hospital Insurance Plan Regulations will be accessible for international learners.

For the MCP application form and more information regarding the services offered under the plan, please visit the Newfoundland and Labrador government website at: www.health.gov.nl.ca/mcp/.

International Health Insurance Plan

Registered international learners of College of the North Atlantic are covered under an accident insurance plan. This DOES NOT provide routine medical coverage for learners. If a learner wishes to opt out from the plan, he or she must provide proof of purchase of a similar health insurance plan to the International Learner Coordinator before registration.

FEES AND COSTS

All amounts are in Canadian Dollars and all fees must be paid in Canadian Dollars.

Regular Academic Studies

Application Fee: CAD $100 non-refundable – must be sent with application

Lea
Tuition Fees:

Regular-Full-time programs
- CAD $3300 per semester (15 weeks - Fall or Winter Semester)

Intersession
- CAD $1650 per semester (7 weeks - Intersession)

In-class course - Part-time learners
- CAD $825 per course

DL courses
- CAD $660 per course + $50 Tech Fee

Co-op work term
- CAD $1650 per semester (12-16 weeks)

On the Job Training
- CAD $220 per week

Equipment/Materials
- CAD $55-$165 (varies from program to program and some exceptions may apply)

In general, for most programs one academic year consists of two 15-week semesters and one 7-week semester. For some programs, an academic year consists of three 15-week semesters. See program description in the college calendar for details.

Registration Fee:
- All programs CAD $95 per academic year (September to August)

Other Costs (Note: these are estimations of expenses, not exact figures)
- Textbooks CAD $500-1000 per semester
- Health Insurance CAD $500-550 per year

SCHEDULE OF PAYMENTS
- Application Fee ($100) must accompany application form
- Registration Fee ($95) due when learner receives Letter of Acceptance or during registration
- First semester tuition ($3300) due when learner receives Letter of Acceptance
- Tuition and Equipment/Materials are paid during registration at the beginning of each semester
- Health Insurance must be purchased before or upon arrival in Canada

ACCEPTABLE METHOD OF PAYMENTS
Payment can be made by credit card or direct transfer into the college’s account.

REFUNDS
The following outlines the international eligibility for tuition refund:
- Application fee and registration fee are non-refundable.
- In the event a learner has paid tuition fees in advance and he/she is not granted a visa by the Canadian Embassy and cannot attend the college as a result, any tuition paid will be fully refunded.
- In the event that a learner formally withdraws their acceptance to the college 30 days prior to the program registration date, a $1000 administration fee will be deducted and the remaining tuition fees will be refunded to the learner.
- Once a learner is registered in his/her program of study, he/she is not eligible for any refund of tuition for the semester in which he/she is registered or any prior semesters. If the learner has paid tuition fees for more than the current semester in which he/she is registered, tuition fees for subsequent semesters will be refunded. (The application fee and the registration fee are nonrefundable)

SCHOLARSHIPS
The college does not offer scholarships or bursaries to international learners upon admission. Once a learner is enrolled at the college, he or she may be eligible to apply for a scholarship or bursary. Eligibility for the college’s scholarships and bursaries is usually determined by the learner’s academic performance.

LIVING EXPENSES
An average monthly estimate of living expenses (not exact figure):
- Housing: $400.00-500.00
- Meals: $200.00-300.00
- Transportation: $70.00-100.00
- Total Average: $900.00
Economic development is strongly linked to the presence of an effective and responsive education system and the establishment of an educated and trained workforce. College of the North Atlantic embodies the concept of education-industry interface through the development of partnerships, tailor-made training, technical assistance and consultancies around the world to promote labour market renewal and develop relevant professional and skills training programs.

INTERNATIONAL CONTRACT TRAINING
College of the North Atlantic develops tailor-made training programmes to meet the needs of businesses and organizations worldwide. Customized training can vary in duration from a one-day session to programmes of several months. We pride ourselves in responding quickly and accurately to clients’ needs.

College of the North Atlantic’s instructional and support staff have the expertise to ensure quality programmes and services. Training expertise at College of the North Atlantic exists in a wide range of sectors:
- Petroleum/Oil & Gas
- Safety & Construction
- Tourism & Hospitality
- Health Sciences
- Engineering Technology
- Industrial Trades
- Business
- Information Technology
- Management & Leadership
- English as a Second Language
- Distance Learning Systems
- Natural Resources

INTERNATIONAL PARTNERSHIPS
College of the North Atlantic works in partnership with educational institutions in joint delivery of programs, training needs assessment, curriculum and program development, teacher training, and other areas of educational cooperation. We have an excellent track record in working with partner institutes and organizations.

In 2001, College of the North Atlantic was chosen by the State of Qatar as its partner in the creation of a world-class technological institute. The Qatar campus is growing steadily towards a learner population of 6000, with 22 brand new custom-designed buildings, state-of-the-art facilities and computer systems, classrooms, laboratories, industrial workshops and a comprehensive range of programs and learner services.

INTERNATIONAL CONSULTANCIES AND TECHNICAL ASSISTANCE
The college has extensive experience and proven success in sharing best practices and processes in both the administrative and pedagogical aspects of technical/vocational education. College of the North Atlantic has provided technical support and consultancy services to projects operated by private companies, governments, non-government organizations and development agencies such as the World Bank, the International Development Research Centre, the Canadian International Development Agency and the Association of Canadian Community Colleges.

GEOGRAPHIC EXPERIENCE
In the past decade alone, College of the North Atlantic has worked with clients in Libya, Lebanon, Yemen, Qatar, West Bank/Gaza, Jordan, Egypt, Peru, Argentina, Chile, Jamaica, Barbados, the Caribbean, Tanzania, Vietnam, Malaysia, Latvia, Lithuania, Russia, India, Pakistan, Thailand, and China.

For additional information regarding custom-designed training, partnerships, and other international business initiatives please contact:

Elizabeth Vincent
Business Development Manager
International Services
College of the North Atlantic
1 Prince Philip Drive
P. O. Box 1693
St. John’s, NL
Canada A1C 5P7
tel: +1 709 758-7261
fax: +1 709 758-7222
email: international@cna.nl.ca
web: www.cna.nl.ca
The Alumni and Advancement Office operates within the Division of Development and College Advancement. Its role is twofold: to foster a climate which creates and nurtures partnerships for the college – allowing for first-rate education opportunities for its learners; and to provide an opportunity for all Alumni to connect with the college and with one another.

ADVANCEMENT
Advancement activities within the college play a pivotal role in engaging community and corporate supporters. Financial support allows for the continuous growth of the college, and also ensures, through scholarships and bursaries, that students have access to high quality education, state of the art equipment and excellent career opportunities. Support for our advancement goals occurs through corporate and private donations and through our internal Faculty and Staff Appeal.

ALUMNI
College of the North Atlantic Alumni are those individuals who have graduated from an approved diploma or certificate program at CNA or one of its predecessor institutions.

The college has always felt a sense of responsibility, pride and interest in the lives of its graduates. With the development of an Alumni Office, our alumni have a lifelong connection to the college. This connection in turn encourages our many alumni worldwide to continue to support College of the North Atlantic and its students.

The Alumni and Advancement Office prides itself on providing key benefits to both former and current learners.

BENEFITS FOR REGISTERED ALUMNI
• A quarterly newsletter
• Opportunities to stay connected or to re-connect with the college, former teachers, classmates and friends through social media outlets and local events
• Continuing Education
• Free access to campus libraries
• Discounts from our select partners
• Career search services hosted by the Office of Alumni and Advancement
• Opportunities to give back to the college by serving as a college ambassador within their communities

BENEFITS FOR LEARNERS
• Learner scholarships, bursaries and awards are a key part of our Office’s activities. By securing corporate and community support, we encourage and support the development of our learners.
• We build connections between learners and alumni which facilitates career guidance or mentorships between these two groups.
• Learners can be confident in knowing that the relationships they are forming as learners will continue beyond graduation

To learn more about these benefits or to become involved contact:
Sonya Smith
Manager, Alumni and Advancement
College of the North Atlantic
1 Prince Philip Drive, Room #L202
P. O. Box 1693
St. John’s NL A1C 5P7
tel: 709 758-7515
dis: 709 758-7222
dora@sonya.smith@cna.nl.ca

Reconnect to the college
Visit: www.cna.nl.ca/alumni
College of the North Atlantic recognizes applied research as an important part of the college’s mission and mandate. The Office of Applied Research (OAR) is dedicated to carrying out the applied research mission of the college. Operating under the Director Programs and Institutional Research, our goal is to enhance the economic prosperity of the province through applied research, innovation and knowledge transfer. In pursuit of its mandate, OAR works toward building college capacity in applied research and innovation, responds to local industry needs in terms of problem solving, development of new products, processes, patents and licenses. Researchers within the college are encouraged to create new knowledge and/or innovative products and services beneficial to the community.

Our strategic research plan prioritizes applied research and innovation in areas of College’s traditional strength as well as in disciplines where significant potential for growth exists as a result of industry demand. These areas of strategic significance constitute the backbone of our applied research program. With a demonstrated capability in a number of disciplines such as engineering technology, physical sciences, trades and university transfer, the college furnishes the necessary building blocks for an applied research and innovation system. This includes infrastructure, state-of-the-art equipment and a cadre of highly qualified individuals committed to innovation and research. The college maintains a strong connection with the community and good working relationship with business and industry. Our areas of activity in applied research include:

- Digital Animation
- Energy
- Oil & Gas
- Renewable
- Engineering Technology
- Environmental Science
- Interdisciplinary Research
- Mining Technology
- Natural Resources
- Nanotechnology
- Social Sciences/Humanities/Community Based Research

The Office of Applied Research furnishes research support in a number of areas including project development and management, product designing, process optimization, software development, prototyping, patenting, etc. Our research in manufacturing sciences utilizes latest technologies in design software, 3-D printing, laser scanning, vacuum forming, injection molding, etc. Researchers are provided support throughout the research process from proposal development to technology transfer and commercialization. Projects involving multiple funding and community partnerships are ongoing in strategic areas of strength. Some of our leading initiatives include projects in; geospatial resource management, manufacturing technology and renewable energy. A detailed listing of current projects is available from Office of Applied Research on request.

The Office of Applied Research can be contacted at the following coordinates:

Office of Applied Research
College of the North Atlantic
Prince Philip Drive Campus (Room K203)
P. O. Box 1693
St. John’s, NL, CA
A1C 5P7
tel: 709 758-7474
fax: 709 758-7327
e-mail: Office.AppliedResearch@cna.nl.ca

Applied Research and Innovation
OFFICE OF APPLIED RESEARCH
CERTIFICATE
- One year
- September start
- Happy Valley-Goose Bay Campus

This program is designed to “bridge the educational gaps” in the lives of Aboriginal learners, enabling them to succeed in subsequent college programs of study. The Aboriginal Bridging program is, moreover, a valuable academic “refresher” for mature students returning to school for training, or to the workforce after a prolonged period of absence. Students enrolling in this program will receive instruction in reading comprehension, writing, numeracy, public speaking, researching, scientific experimentation, personal awareness, study skills, time management, and critical thinking.

In addition to academic courses in Communications, Mathematics and Science, the Aboriginal Bridging program also recognizes that personal skills training is often as important to success as academic studies, and that cultural supports are a necessary component for Aboriginal students entering post-secondary environments. Culturally relevant materials are therefore utilized to form a curriculum designed specifically for First Nations, Inuit, and Métis students. Elder and community participation will be incorporated into the classroom, and career and computer skills courses, as well as personal development and health and wellness training, will be offered as complements to the academics. Students will receive instruction in nutrition, for example, as well as stress management, healthy relationships, parenting, self-determination, and active lifestyles. Combined, this split focus – academic and personal skills development – forms a solid foundational year upon which future post-secondary success may be built.

The Aboriginal Bridging program is closely associated with the CAS Transition offering of courses and feeds directly into that college program. The successful completion of Aboriginal Bridging will enable students to gain specific credits which may be used in CAS Transition.

OBJECTIVES
1. To provide Aboriginal students, who are secondary level graduates or have mature status, with the opportunity to strengthen the academic and personal development skills necessary to succeed in future post-secondary programs.
2. To provide, in response to identified occupational needs, a bridging program that enhances Aboriginal student transition to higher education.
3. To enhance the employment opportunities of secondary level graduates and mature students through improving fundamental employability skills.

ENTRANCE REQUIREMENTS
1. High School
   Provincial High School Graduation Certificate, or equivalent,
2. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile).
3. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
Adult Basic Education (ABE) is a high school equivalency program designed for adults who did not complete high school. Those who have graduated high school but who wish to upgrade their credentials in one or more subject areas will be considered based on suitability of ABE program and availability of seats.

Adult Basic Education is offered in the context of the college’s Access to Training and Careers (ATC) delivery model. Students are provided with an opportunity to complete a Career Development Portfolio and to prepare a Personal Career Plan. An advising process is used to support students throughout their participation in this program.

ENTRANCE REQUIREMENTS
In order to enroll in the ABE Program, a student must be at least 17 years of age and out of the school system for at least one year. Any requests for special admissions/exemption will need a rationale/documentation (i.e. letter from parent, letter from guidance counsel; letter from applicant; transcript of marks; completed application) to be submitted to the ABE Program Consultant and Registrar.

The college offers the following three levels of this program:

Level I
Level I refers to basic literacy and equates roughly to K-6 in the regular school system. All curriculum materials are adapted to various reading levels while maintaining an adult focus. This level of learning uses an updated curriculum, new assessment tools and delivery practices to ensure that adult learners meet a standard of literacy necessary for success in everyday life, and that they are adequately prepared to meet the requirements of future levels of education.

Level II
Level II content is similar to that which is encountered in the intermediate level (grades 7-9) of the regular school system. A student who left school prior to Grade 10 in the regular system would normally be placed in Level II. Many students who have been out of the school system for a number of years also enroll in Level II to “brush up on the basics” before attempting Level III. Level II students complete courses in study skills, English and literature, mathematics and science.

Level III
Level III has undergone a comprehensive revision process to bring it more in line with the current program of studies in the high school system. The new ABE Level III program currently consists of three profiles that lead students to post-secondary study options. A student may choose to graduate under the Degree and Technical Profile, the Business-Related College Profile or the General College Profile. Graduation from any profile requires a minimum of 36 credits.

Note: For the specific number of credits required within subject areas/course categories in each profile, students are advised to see their ABE instructors/

academic advisors. A description of each profile is included below.

Degree and Technical Profile
This is an academic profile in which core courses are directly equivalent to corresponding courses in the high school system. It is designed for ABE students who intend to go on to university or other post-secondary programs that require an equivalent level of secondary education (e.g. Engineering Technology, Natural Resources, and Health Sciences programs).

Graduation requirements consist of a minimum of 36 credits, including the following:

English (9 Credits)
- English 1101A, 1101B, 1101C
- English 2101A, 2101B, 2101C
- English 3101A, 3101B, 3101C

Mathematics (9 Credits)
- Math 1104A, 1104B, 1104C
- Math 2104A, 2104B, 2104C
- Math 3104A, 3104B, 3104C

Science (8 Credits)
Credits must include:
2 credits from:
- Biology 1101
- Chemistry 1102
- Physics 1104
- Earth Systems 1109

Plus one of the following groupings:
- Biology 2101A, 2101B, 2101C
- Biology 3101A, 3101B, 3101C
- OR
- Chemistry 2102A, 2102B, 2102C
- Chemistry 3102A, 3102B, 3102C
- OR
- Physics 2104A, 2104B, 2104C
- Physics 3104A, 3104B, 3104C

Personal Development and Career Awareness (4 Credits):
- Economics Education 3101A, 3101B
- Computer Technology 3101, 3102
- IE3213 Career Awareness
- IE3214 Personal Development
- IE3213 and IE3214 are credits attained through College of the North Atlantic’s Access to Training and Careers (ATC), mandatory for graduation with ABE from College of the North Atlantic.

Electives and Adult-Oriented Electives
Additional credits including those from subject areas above and Adult-Oriented Electives, as needed to make up the minimum of 36 credits. Please see the Adult-Oriented Elective examples provided above.

General Options
- Maximum of 10 credits

General College Profile
This is a profile in which many of the core courses are equivalent to corresponding general courses in the high school system. It is designed for ABE students who intend to go on to post-secondary programs that require a high school graduation certification (e.g. Office Administration, Industrial Trades, and some Applied Arts programs). Certain options for courses in this profile have been designed specifically for preparation for Industrial Trades programs. Graduation requirements consist of a minimum of 36 credits, including the following:

English (9 Credits)
- English 1102A, 1102B, 1102C
- English 2102A, 2102B, 2102C
- English 3102A, 3102B, 3102C

Mathematics (6 Credits)
- Math 2105A, 2105B, 2105C
- plus one of the following groupings:
- Math 3107A, 3107B, 3107C
- OR
- Math 3109A, 3109B, 3109C
- OR
- Any Degree and Technical Profile mathematics credit counts towards the required 6. If a student has Mathematics 1104 A/B/C completed, he/she will select 1 of the 3000 level groupings above.

Business-Related College Profile
This is an academic profile in which many of the core courses are directly equivalent to corresponding academic courses in the high school system. It is designed for ABE students who intend to go on to business-related college programs (e.g. Business Administration, Business Management, and Information Technology programs). Graduation requirements consist of a minimum of 36 credits, including the following:

English (9 Credits)
- English 1101A, 1101B, 1101C
- English 2101A, 2101B, 2101C
- English 3101A, 3101B, 3101C

Mathematics (9 Credits)
- Math 1104A, 1104B, 1104C
- Math 2104A, 2104B, 2104C
- Math 3104A, 3104B, 3104C

Science (6 Credits)
- Students working under the Business Related College Profile may follow the graduation requirements in science for the Degree and Technical Profile or the General College Profile, to a minimum of 6 credits.

Personal Development and Career Awareness (4 Credits)
- Economic Education 3101A, 3101B
- Computer Technology 3101, 3102
- IE3213 Career Awareness
- IE3214 Personal Development

Electives and Adult-Oriented Electives
Additional credits including those from subject areas above and Adult-Oriented Electives, as needed to make up the minimum of 36 credits. Please see the Adult-Oriented Elective examples provided above.

General Options
- Maximum of 10 credits

General College Profile
This is a profile in which many of the core courses are equivalent to corresponding general courses in the high school system. It is designed for ABE students who intend to go on to post-secondary programs that require a high school graduation certification (e.g. Office Administration, Industrial Trades, and some Applied Arts programs). Certain options for courses in this profile have been designed specifically for preparation for Industrial Trades programs. Graduation requirements consist of a minimum of 36 credits, including the following:

English (9 Credits)
- English 1102A, 1102B, 1102C
- English 2102A, 2102B, 2102C
- English 3102A, 3102B, 3102C

Mathematics (6 Credits)
- Math 2105A, 2105B, 2105C
- plus one of the following groupings:
- Math 3107A, 3107B, 3107C
- OR
- Math 3109A, 3109B, 3109C
- OR
- Any Degree and Technical Profile mathematics credit counts towards the required 6. If a student has Mathematics 1104 A/B/C completed, he/she will select 1 of the 3000 level groupings above.
Science (6 Credits)
Credits must include:
3 credits from the following:
Science 3101
Science 3102
Science 3103
Science 3104
Science 3105
Science 3106
IS3214 Environmental Science

Plus 3 more credits from the list above
OR
Science 2100A
Science 2100B
Science 2100C
OR
Any science from Degree and Technical Profile (provided that pre-requisites are met)

Personal Development and Career Awareness (4 Credits)
Economics Education 3101A, 3101B
Computer Technology 3101, 3102
IE3213 Career Awareness*
IE3214 Personal Development*

* IE3213 and IE3214 are credits attained through College of the North Atlantic’s Access to Training and Careers (ATC), mandatory for graduation with ABE from College of the North Atlantic.

Electives and Adult-Oriented Electives
Additional credits including those from subject areas above and Adult-Oriented Electives, as needed to make up the minimum of 36 credits. Please see Adult-Oriented Elective examples provided above.

General Options
Maximum of 10 credits

Note: Although the above profiles are aligned with post-secondary programs as indicated above, students must check specific program entrance requirements if intending to apply to a post-secondary program.

All students are counseled upon registering to ensure that the courses which they select are appropriate for the career goal they are pursuing. Students should also note that they may be eligible for credits for courses or programs which they may have completed since leaving school, so it is important that all documentation (e.g. high school transcripts, certificates from other training) is obtained, preferably before registering.
CERTIFICATE
• One year
• To Be Determined
• Grand Falls-Windsor Campus

ACADEMICS

Comprehensive Arts and Science Trades

Comprehensive Arts and Science (CAS) Trades is designed for learners who will be 19 years of age at the commencement date of the program, and have a minimum of Grade 9 High School completion, or equivalent. The program is designed for learners who would like to improve their employability skills and/or who are lacking either the academic courses or the required grades to meet the admission requirements for entry into a College of the North Atlantic (CNA) Industrial Trades Program. The CAS Trades program also provides a valuable “refresher” for mature students who have been away from education, training and/or the workforce for some time.

Students in the CAS Trades program will be provided the opportunity to gain a wide range of knowledge and skills in preparation for further post-secondary training and/or employment in a trades environment. In addition to courses in English, Mathematics and Science, students will be exposed to courses ranging from Standard First Aid to introductory courses investigating trades such as Carpentry, Electrical, Plumbing and Welding. Courses such as Orientation to Safety provide students with the opportunity to develop safe working skills necessary for successful learning in a CNA Industrial Trades program. Graduates of this program will qualify for admission into one of 30 of the 34 Industrial Trade programs, or for admission into the CAS Transition program.

OBJECTIVES:

Upon successful completion of this one-year program, graduates will:
1. Have strengthened academic skills, particularly in the areas of English (reading comprehension; written and oral communications), Mathematics and Science
2. Have introductory knowledge and foundation skills in the trades, particularly in the areas of safety, apprenticeship process, and introductory courses investigating trades such as carpentry, electrical, plumbing and welding fundamentals
3. Have gained knowledge and skills in student success strategies and learning habits necessary for post-secondary programs
4. Have gained employability skills, particularly introductory skills necessary to assist trade professionals
5. Have the knowledge and skills necessary for entry in 30 of 34 Industrial Trades programs at the College (with the exceptions in Aircraft Maintenance Engineering Technician, Commercial Transport, Heavy Equipment Operator, and Mining Technician)
6. Have the knowledge and skills necessary for entry in the Comprehensive Arts and Science (CAS) Transition program at the College
7. Have explored options and interests for further post-secondary programs, particularly in the trades
8. Have the career planning skills, such as résumé and portfolio development, to assist in achieving career goals

ENTRANCE REQUIREMENTS:
Students must be at least 19 years of age at the commencement date of the program, and have a minimum of Grade 9 High School completion, or equivalent.

Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Learner Clause.

REQUIREMENTS FOR COMPLETION:
In order to complete the requirements of the Comprehensive Arts and Science (CAS) Trades Certificate program, students must complete all courses listed below. Students must attain a mark of not less than 70% in every course in the program, unless specified as Pass/Fail. Students must also meet all qualification requirements for the awarding of a Certificate from the College.

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<th>Code</th>
<th>Title</th>
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<td>MA1030</td>
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<tr>
<td>TG1190</td>
<td>Introduction to WHMIS</td>
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<td>TS1530</td>
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<td>TG1120</td>
<td>Multi-trade Hand Tools</td>
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<td>TG1140</td>
<td>Introduction to Rigging</td>
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<td>TG1150</td>
<td>Scaffolds and Ladders</td>
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<td>Portfolios</td>
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<td>LA1110</td>
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<td>HE1620</td>
<td>Powerline Hazards</td>
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<td>TG1200</td>
<td>Introduction to Carpentry</td>
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<td>Floor and Wall Framing Basics</td>
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<td>Residential Wiring Basics</td>
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<td>TG1270</td>
<td>Copper and Plastic Piping</td>
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<tr>
<td>TG1280</td>
<td>Introduction to Welding</td>
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CERTIFICATE
- One year
- September start
- Burin, Carbonear, Grand Falls-Windsor, Happy Valley-Goose Bay, and Labrador West Campuses

ACADEMICS

Comprehensive Arts & Science Transfer: College-University

COURSES

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<td>CM110</td>
<td>Critical Reading and Writing II (Fiction)</td>
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<td>CM165</td>
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<td>EC1140</td>
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<td>EC1550</td>
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<td>EN1100</td>
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<td>EN1102</td>
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<td>EL1150</td>
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<td>Fall</td>
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<td>EL1320</td>
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<td>EL1440</td>
<td>Introductory French III</td>
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<td>MA1104</td>
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<td>SI1500</td>
<td>Introduction to Physical and Life Science</td>
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<td>WM1100</td>
<td>Introduction to Women’s Studies</td>
<td>Fall</td>
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Comprehensive Arts and Science (CAS) Transfer: College-University program provides students with the opportunity to complete a suite of courses for which they will gain credit from College of the North Atlantic as well as from Memorial University of Newfoundland. It has been developed through an agreement with Memorial; courses identified in this section are developed in collaboration with Memorial’s respective departments.

Note: In the areas of curriculum content and testing methodologies, these courses are identical to Memorial’s.

These introductory courses are designed for students intending to transfer to university after completion of their first year at College of the North Atlantic.

OBJECTIVES

1. To enhance student access to courses that earn both university and college credits.
2. To provide an opportunity for students to gain university course credit at locations close to their home communities.
3. To allow students to choose career paths with maximum recognition of credit for work completed.

ENTRANCE REQUIREMENTS

1. High School
   Provincial High School Graduation with 60% overall average in the following courses (or equivalents):
   i. English 3201 or English 3202
   ii. Mathematics (2 credits) chosen from:
      - Advanced: 3205
      - Academic: 3204
   And
   - 2 credits chosen from:
      - Advanced: 2205
      - Academic: 2204
   iii. Science (4 credits) two of which must be selected from the following:
      - Biology 3201
      - Chemistry 3202
      - Physics 3204
      - Earth Systems 3209
   The remaining two credits may be selected from 2000 level courses in the above noted subject areas or from Science 1206.
   iv. Two credits at the 3000 level in a Social Science or a Modern/Classical Language. This category includes the following subject areas: History, Geography, Religious Studies, French, Spanish, other Modern/Classical Languages.
   v. Electives
      Two credits at the 3000 level in elective courses chosen from the subjects above or from additional courses approved by the Department of Education for offering at the 3000 level for certificate purposes.

2. Comprehensive Arts and Science (CAS) Transition
   Note: It is important that CAS Transition students who intend to enroll in the CAS Transfer program check course requirements for their intended post-secondary plans. It is strongly recommended that CAS Transition Certificate students complete:
   i. Math Fundamentals MA1040 and MA1051
   ii. Two Science courses chosen from one of the following three combinations:
      - a. Introductory Biology BL1020 and BL1021
      - b. Introductory Chemistry CH1030 and CH1031
      - c. Introductory Physics PH1050 and PH1051
   3. Adult Basic Education (ABE)
      Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses:
      i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
      iii. Science from one of the following sections:
      Applicants with Adult Basic Education (Level III) Graduation with a different Profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above has been completed.

4. Mature Student Status
   Applicants who do not meet the education prerequisites of this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

REQUIREMENTS FOR COMPLETION

In order to complete the requirements of the Comprehensive Arts and Science Transfer: College-University Certificate program, students must complete 10 courses from the CAS Transfer: College-University suite of courses with a minimum Grade Point Average of 2.00.

Note: For purposes of completion of the Certificate, MA1670 Statistics and EP1110 Introduction to Business may also be included in the CAS Transfer: College-University suite of courses. Students must also meet all qualification requirements for the awarding of a Certificate from the college.

Maximum number of CAS Transfer: College-University courses per semester (i.e. Fall; Winter) is five.
CH1136 INTRODUCTORY CHEMISTRY II
Transferable to MUN Chemistry 1011
This is a continuation of CH1135. This course will further develop the fundamental concepts of chemistry, with emphasis on physical properties of matter, intermolecular forces, molecular geometry and chemical bonding theory, rate of reaction, chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: physical properties of matter, molecular geometry, and rate of reaction, chemical equilibrium, acid-base equilibria, redox reactions and electrochemistry.
Prerequisite(s): CH1130 or MUN Chemistry 1010

CH1140 GENERAL CHEMISTRY I
Transferable to MUN Chem 1050
This course is designed for students who have previously studied Chemistry either in high school or university. It is designed to give students a knowledge and understanding of the fundamental chemical concepts which will form the basis for further studies in the field of science. Major Topics are: matter - its properties and measurement, atoms and atomic theory, chemical compounds, chemical reactions, introduction of reactions in aqueous solution, gases and hydrogen, electrons in atom, the Periodic Table and some atomic properties, chemical bonding I: basic concepts, chemical bonding II: additional aspects, liquids, solids, and intermolecular forces, solutions and physical properties.
Prerequisite(s): At least 75% in high school Chemistry 3202 and a pass in high school Advanced Mathematics 3205. Students must have a strong background in pre-university chemistry. The main objective of this course is not to re-teach core chemical concepts but to build on them. Students with a weak chemistry background are advised to register for Chemistry 1135.
Co-requisite(s): CH1130 (or MUN Math 1000) or MA2100. This course would be helpful especially for students who did not take Physics in high school.

CH1141 GENERAL CHEMISTRY II
Transferable to MUN Chemistry 1011
This is a continuation of CH1135. This course will further develop the fundamental concepts of chemistry, with emphasis on physical properties of matter, intermolecular forces, molecular geometry and chemical bonding theory, rate of reaction, chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: physical properties of matter, molecular geometry, and rate of reaction, chemical equilibrium, acid-base equilibria, redox reactions and electrochemistry.
Prerequisite(s): CH1135 or MUN Chemistry 1010

CH1150 INTRODUCTORY CHEMISTRY III
Transferable to MUN Chemistry 1031
This course is designed to prepare students who have completed Chemistry 1131 (or MUN chemistry 1011) for second year Chemistry courses. It deals with the topics in greater depth with emphasis on problem solving, as in Chemistry 1141.
Prerequisite(s): CH1131 or MUN Chem 1011.

CM1110 CRITICAL READING AND WRITING I
Transferable to MUN English 1080 or 1000
An exploration of literary texts, which will include such forms as poetry, short fiction, drama and the essay. Emphasis is placed on critical reading and writing including analyzing texts, framing and using questions, constructing essays, organizing paragraphs, quoting and documenting, revising and editing.
Prerequisite(s): None, but high school chemistry is recommended. However, mathematical skills are required, and students with low marks in high school Level III academic mathematics (less than 70%) are strongly recommended to upgrade their mathematics background before undertaking this course.

CM1115 CRITICAL READING AND WRITING II (FICTION)
Transferable to MUN English 1101 or 1001
This course is an introduction to such prose narrative forms as the novel, the novella, the story sequence and the autobiography. This course continues the emphasis on critical reading and writing begun in CM1120. It also introduces the student to longer prose narrative, particularly the novel form and to the practices of conducting research.
Prerequisite(s): CM1120 or MUN English 1080.

CM1145 CRITICAL READING AND WRITING II (CONTEXT, SUBSTANCE, STYLE)
Transferable to MUN English 1110 or 1001
This course is an introduction to the writing and analysis of prose. Students will analyze prose writing and practice a number of writing strategies that consider a variety of audiences and purposes. The course furthers the development of writing and analytical skills acquired in CM1120 English and introduces the student to writing intended to persuade, analyze.
Prerequisite(s): CM1120 or MUN English 1080.

CM115S CRITICAL READING AND WRITING II (DRAMA)
Transferable to MUN English 1102 or 1001
This course is an introduction to the study of plays, primarily as written texts. Elements of theatre history and dramatic theory and of live performance production processes may be introduced to enhance students’ understanding of this uniquely hybrid literary. This course continues to develop the critical reading and writing skills introduced in CM1120.
Prerequisite(s): CM1120 or MUN English 1080.

CM1165 CRITICAL READING AND WRITING II (POETRY)
Transferable to MUN English 1103 or 1001
English CM1165 introduces the writing and analysis of poetry. This course continues to develop critical reading and writing skills introduced in CM1120. Students will also learn to develop library/research skills.
Prerequisite(s): CM1120 or MUN English 1080.

EC1140 MICROECONOMICS
Transferable to MUN Economics 2010
This is a course in Microeconomics that is intended to prepare a student to take additional courses in economics which makes use of Microeconomic tools of analysis. In addition, the subject matter of this course will help in understanding some of the concepts, problems, and arguments that are presented in other courses or in the public press. When new projects or changes are announced by the government or the private sector, you will have a set of tools of analysis that will allow you to be more informed as to exactly what is involved in the decision making process; your
relevant questions, whether you like or dislike the initiative. The course will cover the following topics: Scarcity and Opportunity Cost, Demand and Supply, Elasticity, Short-Run and Long-Run Cost Functions, Perfect competition in the short-run and in the long-run, Monopoly. 
Prerequisite(s): Preferably high school Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test or MUN Math 1090.

**EC1150 INTRODUCTION TO MACROECONOMICS**
Transferable to MUN Economics 2020
This second year equivalent course is designed to introduce students to macroeconomics and is intended to prepare a student to take additional courses in economics and business. Topics that will be covered include national income accounting, aggregate income analysis, money, banking and foreign trade. The course examines the physical and monetary aspects of international trade, money, banking and monetary policy, the gross domestic product, national expenditure components, business cycles and fiscal policy. The emphasis is on Canadian examples where possible. 
Prerequisite(s): None but strong mathematical skills are required; preferably the same prerequisite as MA1104 (or MUN Math 1090).

**EH1100 EARTH SYSTEMS**
Transferable to MUN Earth Sciences 1000
A survey of major earth systems, including the interior of the earth, lithosphere, hydrosphere, atmosphere, and biosphere – their structure, composition and interaction. 
Prerequisite(s): None.

**EH1102 CONCEPTS AND METHODS IN EARTH SCIENCES**
Transferable to MUN Earth Sciences 1002
Introduction to a broad range of concepts concerning the development of the geological record and the Earth; practical methods for collection of field based data; topics in map interpretation and geometric analysis, stratigraphy, paleontology, structure and petrology, designed to develop the skills necessary to understand and prepare geologic maps and other general skills needed to pursue a career in Earth Sciences. 
Prerequisite(s): EH1100 or MUN Earth Sciences 1000. 
*Note:* This course is required for all Earth Sciences majors and minors and for all Joint Programs (Earth Sciences) at MUN.

**EL1150 INTRODUCTION TO FOLKLORE**
Transferable to MUN Folklore 1000
The role that tradition plays in communication, art and society will be discussed through an examination of folklore materials from Newfoundland and Labrador and the English-speaking world. Through assignments students will identify and reflect on folklore in their own lives and the lives of others.

**EL1320 FOLKLORE STUDIES**
Transferable to MUN Folklore 2401
An examination of the traditional cultures of Europe and North America with special reference to Newfoundland and Labrador. A selection of the following areas will be covered: settlement patterns, architecture, work and leisure patterns in the folk community, calendar customs, rites of passage, folk religion, folk medicine, language and folk culture, folk costume, foodways and folk art. 
Prerequisite(s): Normally EL1150 (MUN Folklore 1000) is the prerequisite for the course; this can be waived with special permission of the head of the Folklore Department.

**EL1340 INTRODUCTION TO ANTHROPOLOGY**
Transferable to MUN Anthropology 1031
This course is an introduction to the field of social and cultural anthropology. Taking a cross-cultural approach to the study of society and culture, the focus of this course will be on the global issues of ecology, technology, economy, politics, kinship and ideology. This course will also examine linguistic anthropology, but the emphasis will be on how we use language for human communication rather than on formal linguistics.

**EL1420 INTRODUCTORY FRENCH I**
Transferable to MUN French 1500
This is an introductory course for students with little or no previous knowledge of French and for those who wish to review the basic vocabulary and structure. The course uses only the present tense and basic vocabulary, and covers the most common situations of daily life. 
Prerequisite(s): None

**EL1430 INTRODUCTORY FRENCH II**
Transferable to MUN French 1501
This is a course which teaches the use of past tenses and more advanced structures. Students begin to read short texts, to write longer compositions and to explore more complex situations.

**EL1440 INTRODUCTORY FRENCH III**
Transferable to MUN French 1502
This course introduces ways of dealing with future and hypothetical situations, and cases where emotion and personal feelings color the issue. The work of composition and intensive vocabulary building continues, and students are expected to engage in more advanced oral practice.

**EL14430 INTRODUCTORY FRENCH IV**
Transferable to MUN French 1503
The course provides a general, fairly non-technical introduction to linguistics. Students will learn basic concepts about the nature of language and its function in communication. Some technical terminology and elementary analysis related to the study of language and linguistics will be introduced.

**MA1104 ALGEBRA AND TRIGONOMETRY**
Transferable to MUN Math 1090
This pre-calculus course is designed to strengthen students’ skills in basic algebra, review and develop a deeper understanding of the concept of a function and make students aware of the importance of trigonometry. The course also uses technology to enhance the students understanding. After completing this course a student will have the essential prerequisite elements to complete an introductory calculus course.

**MA1110 INTRODUCTORY PHYSICS I**
Transferable to MUN Physics 1020
Physics I is a non-calculus based introduction to mechanics. This is an introductory course designed to extend students’ knowledge and understanding of the basic concepts, principles and applications of mechanics. Topics covered include: kinematics in one and two dimensions, vectors, dynamics, equilibrium, work and energy, linear momentum, circular motion, equilibrium, torque and gravitation.

**MA1120 INTRODUCTORY PHYSICS II**
Transferable to MUN Physics 1021
Physics II is a non-calculus based introduction to mechanics. It is an introductory course which may be used as a transfer credit course in physics in a Memorial University academic degree program. Topics covered are: fluids, vibrations and waves, sound,
Prerequisite(s): PH1120 or MUN Physics 1020 or PH1130 or MUN physics 1050 and College MA1130 (or MUN Mathematics 1000). MA1130 (MUN Mathematics 1000) may be taken concurrently.

**PH1130 PHYSICS I**
Transferable to MUN Physics 1050
This course is a calculus-based introduction to mechanics. The course emphasizes problem solving. One goal is to extend students’ knowledge and understanding of the basic concepts, principles and applications of mechanics, which underlies so much of science. An equally important goal, however, is to develop methods of learning and problem solving which will be of value in whatever endeavors students ultimately choose to pursue. Topics covered include Measurement, Kinematics in one and two Dimensions, Vectors, Laws of Motion, Application of Newton’s Laws, Work and Energy, Momentum, and Static Equilibrium.

Prerequisite(s): Completion of Physics 2204 and Physics 3204 in high school and enrollment in Mathematics 1130 (MUN Mathematics 1000) concurrently.

**PH1131 GENERAL PHYSICS II**
Transferable to MUN Physics 1051
General Physics II is a calculus-based physics course. This course is integrated with the use of computers in a workshop environment. Computers will be used to collect and analyze data on simple physical systems. Physics 1130 (General Physics I) introduces mechanics. This course focuses on oscillation, wave motion, physical optics, electricity, and magnetism. This course further develops the processes of logical reasoning and critical thinking as applied to Physics in particular, and Science, in general. General Physics II is a college credit course which may be used as a transfer credit course in physics in a Memorial University degree program. Topics covered include oscillations, wave motion, physical optics, and electromagnetism.

Prerequisite(s): PH1130 (MUN Physics 1050) or PH1121 (MUN Physics 1021) or PH1120 (MUN Physics 1020) (with a minimum grade of 65%), and MA1131 (MUN Mathematics 1001). MA1131 (MUN Mathematics 1001) may be taken concurrently.

**PS1150 INTRODUCTION TO PSYCHOLOGY I**
Transferable to MUN Psychology 1000
This course introduces students to psychological theory and research in the areas of neuroscience, human development, learning and memory, sensation and perception of stimuli, and different states of consciousness.

Prerequisite(s): None

**PS1151 INTRODUCTION TO PSYCHOLOGY II**
Transferable to MUN Psychology 1001
An introduction to psychological theory and research in the areas of human cognition and emotion, motivation, personality, psychological disorders and treatment, social psychology, health and stress, and sexuality.

Prerequisite(s): PS1150 or MUN Psychology 1000.

**SC1150 PRINCIPLES OF SOCIOLOGY**
Transferable to MUN Sociology 1000
Sociology 1150 is an introduction to the concepts, principles and topics of sociology. The theoretical foundations of modern sociology are examined through the works of such social theorists as Karl Marx, Emile Durkheim and Max Weber, in addition to the contemporary theoretical perspectives of functionalism, feminism, conflict theory and symbolic interactionism. The course also examines a range of sociological topics and concepts including research methods, culture, socialization, social stratification, deviance and crime, race and ethnicity, sex and gender, health and healthcare, work and the economy, and populations.

Prerequisite(s): None

**SC1160 SOCIOLOGY OF FAMILIES**
Transferable to MUN Sociology 2270
Topics covered include: defining the family, sociological perspectives on the family, family diversity, dynamics of intimate relationships, marriage, children and parenting, lone parent families, separation, divorce and remarriage, the family and work, the family and poverty, midlife and beyond, social problems in the family, trends in Canadian family life.

Prerequisite(s): None

**SC1170 SOCIOLOGY OF WORK**
Transferable to MUN Sociology 2280
This course examines the sociology of work. The course deals with the organization of work, the importance of work in society, the socialization of individuals for work, the division of labor, and the structure of the workplace. Topics include: the organization of work, the importance of work in society, the socialization of individuals for work, the division of labor, and the structure of the workplace.

Prerequisite(s): None

**SC1190 INSTITUTIONAL THEORY**
Transferable to MUN Sociology/Anthropology 2220
This course examines the development of institutional theory in sociology. It focuses on the study of social institutions and their role in society. Topics include: the sociology of religion, the sociology of education, the sociology of the family, and the sociology of the economy.

Prerequisite(s): None

**SI1500 INTRODUCTION TO PHYSICAL AND LIFE SCIENCE I**
Transferable to MUN Science 1150
This course is designed for non-science majors and students who want to pursue a degree in primary and elementary education. This course is divided into two parts, the first part focuses on the earth and sky, and the second part focuses on living systems. The first half of the course deals with Earth in relation to the rest of the solar system, galaxy, and the universe, and the geology of the earth in more detail. This is followed by a section on the atmosphere and weather systems, then by a brief description of soils. Atmosphere and soils will lead into the second half which will concentrate on living systems with emphasis on ecology and elementary cell biology.

Prerequisite(s): None

**SI1501 INTRODUCTION TO PHYSICAL AND LIFE SCIENCE II**
Transferable to MUN Science 1151
This is a continuation of SI1500 course. This course will develop the fundamental concepts of chemistry and physics. It will emphasize the (1) energy of motion, which includes mechanical and thermal energy, laws of thermodynamics, kinetic theory, and energy transfer; (2) energy of the atom, which includes structure of the atom, bonding, chemical energy, radioactivity, relativity, and nuclear energy; and (3) energy of the electron (light and electricity), which includes radiant energy, behavior of waves, light and color, electric current and circuits, effects of electric current, and production of electric current.

Prerequisite(s): None

**WM1100 INTRODUCTION TO WOMEN’S STUDIES**
Transferable to MUN Gender Studies 1000
This course is a feminist introduction to the history, principles, and practices of Women’s Studies within a Canadian context. The initial readings document the key ideas leading to the rise of feminist consciousness in Western culture in general and the emergence of first wave feminism in Britain and North America specifically. The next group of readings documents the development of second wave feminism in Britain and North America, as well as second and third wave feminism in Canada. The impact of key second wave feminist theories on the establishment of Women’s Studies as an academic field of inquiry in Canada will form the context for the interdisciplinary analysis of a variety of Canadian women’s works, including (but not limited to) literature (fiction and non-fiction), film, artworks, and personal documents (for example, diaries, photographs, oral records) in archival collections.

Prerequisite(s): None
ACADEMICS

Comprehensive Arts & Science Transition

ENTRANCE REQUIREMENTS

1. High School
   Provincial High School Graduation Certificate, or equivalent

2. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)

3. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

FUTURE OPPORTUNITIES

One objective of the CAS Transition program is to increase opportunities for the youth of this province to gain post-secondary qualifications, and thus improve their lifetime employment and earnings potential. A number of recent government reports have documented the declining significance of high school graduation alone as a predictor of employability/employment status.

CAS Transition has the potential to significantly affect the employment and earnings potential of many adults in this province. For those who successfully make the transition to other college programs, the prospects for employment and increased lifetime earnings potential would be greatly enhanced. The transition program also provides students with a post-secondary credential which could be of immediate benefit to them in the labour market, both in securing part-time work during their college studies and in attaining full-time work if they choose to postpone or suspend their studies for any reason.

Graduates of the CAS Transition program who have successfully completed the appropriate courses may qualify for admission to other college programs, other post-secondary programs or they may elect to enter the workforce directly. Students are advised to speak to an Advisor regarding course selection. Students who complete the full certificate program may seek to meet admission criteria of Memorial University.

REQUIREMENTS FOR COMPLETION

In order to complete the requirements of the Comprehensive Arts and Science Transition Certificate program, students must attain 40 credits with a minimum Grade Point Average of 2.00. Credits must include completion of Essential English I and II, a minimum of 20 credits from Core Program courses, and a minimum of 6 credits from Electives. Students must also meet all qualification requirements for the awarding of a Certificate from the college. (Note: Students may qualify for exemption and attain credit for graduation for Essential English I or II and/or Math Fundamentals I or II provided the necessary requirements are met. Only Essential English and Math Fundamentals can be considered for exemption within the CAS Transition program using the program specific exemption form. Factors affecting the decision for Exemption include: previous high school course(s) completed and grade attained, assessment scores, subsequent program choice and advisor recommendation.)

OBJECTIVES

1. To provide the opportunity for secondary level graduates to meet entrance requirements for other college programs.

2. To provide secondary level graduates and mature students with the opportunity to strengthen academic skills and/or learning habits and strategies needed to succeed in post-secondary programs.

3. To enhance the employment opportunities of secondary level graduates and mature students through improving fundamental employability skills.

4. To provide the opportunity for secondary level graduates to clarify training and career goals.

5. To provide a refresher for mature students who have been away from education, training and/or the workforce for an extended period of time.

Note: In order to achieve the objectives the student must complete a minimum of 10 credits from Core Program courses and 4 credits from Required Courses. The required courses and core program courses may also be counted as Electives.

Semester 1
Course Title: Introduction to Human Services
Credits: 3
Labour: 3
Note: The student may choose any course from the CAS Transition program which meets the stated prerequisites, their schedules can accommodate the course, and any other regulations which may apply. Courses over and above the minimum credit requirements in the Core Program courses area may also be counted as Electives.

Note: Students in the CAS Transition program may select any available elective from the College Calendar provided that they meet the stated prerequisites, their schedules can accommodate the course, and any other regulations which may apply. Courses over and above the minimum credit requirements in the Core Program courses area may also be counted as Electives.

The CAS Transition program also provides students with the opportunity to develop the essential skills and strategies for successful learning in any college program. The completion of elective courses from other program areas will enable students to gain credits which may be used in a subsequent college program. (Note: The range of course offerings may vary between campuses. Prospective students are advised to check with the campus they will be attending to confirm available courses.)

Note: While it is possible to complete the required 40 credits by taking 5 courses per semester, students who select courses with a credit value of 3 or less may have to complete more than 5 courses per semester to graduate in two semesters. The maximum number of courses a student may complete per semester is 7.

Required Courses

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<tr>
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Program Access Courses

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<td>Math Fundamentals II</td>
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<td>4</td>
</tr>
<tr>
<td>Introductory Biology II</td>
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</tr>
<tr>
<td>Introductory Chemistry I</td>
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<td>Introductory Chemistry II</td>
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<td>Introductory Psychology I</td>
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<tr>
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<td>Sociology II</td>
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<td>Sociology-Student Service</td>
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<td>Entrepreneurial Studies I</td>
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<td>Technical Writing</td>
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<td>Creative Writing</td>
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<tr>
<td>Business Communications I</td>
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<td>Business Fundamentals</td>
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<td>Technology</td>
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<tr>
<td>Document Production Fundamentals</td>
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<tr>
<td>Document Production</td>
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</table>
College of the North Atlantic offers English as a Second Language (ESL) program which is designed to address language training for a variety of academic, personal and social goals. ESL courses in listening, speaking, reading and writing are offered at five levels: Beginner, Intermediate I, Intermediate II, Advanced I and Advanced II. Students enrolled at the Advanced Levels are offered the opportunity to enroll in college credit courses as part of their ESL study. This is an immersion program where the college environment and the community serve as a laboratory for learning. As a result, students inherently participate in Canadian culture through involvement in authentic activities that require specific language proficiencies.

**OBJECTIVES**

1. To address the language and cultural needs of students from diverse backgrounds.
2. To support the language needs of students destined for post-secondary education programs, including those offered at CNA.
3. To help students understand and integrate into Canadian academic and social culture.

**ENTRANCE REQUIREMENTS**

Students must be 17 years of age at the commencement date of the program.

Entry assessment into the ESL program: Students are assessed and assigned a level of instruction on an individual basis in each of the four skill areas of listening, speaking, reading and writing. Assessment tools include an oral interview, listening and reading comprehension, and a writing sample. Lower level courses in each language skill area will be exempted.

**ACADEMICS**

**English as a Second Language (ESL)**

All courses in each Level are required for successful completion of that Level. Levels IV and V have electives.
DIPLOMA
• Two years
• September start
• Prince Philip Drive Campus

APPLIED ARTS
Community Recreation Leadership

The two-year program, Community Recreation Leadership, has been developed in response to an increasing awareness of the technological and societal changes in modern society that influence people’s leisure time, pursuits, and retirement. The program also recognizes the opportunities and challenges inherent in providing recreation services to people.

The purpose of the program is to train personnel who may contribute to the development and extension of individual and group interests and endeavours as they relate to the leisure time of people in urban and rural communities of the province, encompassing all ages and abilities.

In addition to the costs for textbooks, students will be required to pay for special materials required for specific courses as well as fees for certification, participation in selected training seminars or conferences, and for activities associated with outdoor recreation (fees subject to change). The accumulated costs for these materials and activities will be outlined prior to registration.

OBJECTIVES
1. To provide students with training in various recreational pursuits including therapeutic recreation, outdoor recreation, and community-based programming appropriate to the province.
2. To provide students with training in program planning and administration in the use and management of recreational facilities.
3. To foster students’ appreciation of the nature of community life, including geographic structure, economic and social factors, and government controls.
4. To foster students’ appreciation of the various groups within a community and their particular recreational needs (including children, youth, adults, and older adults).
5. To provide students with leadership training to enable them to:
   a. exercise initiative in the development of leisure time activities.
   b. recognize and help strengthen established community activities.
   c. organize and stimulate growth at the community level.

CURRICULUM
1. General Education: Communications (oral and written), social sciences, psychology, accounting, and computers.
2. Specific Recreational Activities: Outdoor: cross-country skiing, camping, canoeing, hiking, dryland/aquatic fitness, creative activities, and physical activity programming.
3. Technical Training: Problem solving, supervision and administration of recreation programs, community recreational development for all age groups, and facility development and maintenance.
4. Field Work: Supervised field work experience is scheduled in BLOCK FORM for each semester. The schedule for the winter semesters may coincide with the Reading Break.

EMPLOYMENT OPPORTUNITIES
The graduate is awarded a Diploma in Community Recreation Leadership certifying successful completion of two years of post-secondary education combining theoretical knowledge and practical training. Graduates may obtain employment as program directors and supervisors, facility supervisors with agencies such as community centers, municipal recreational agencies, youth agencies and agencies providing therapeutic and rehabilitation services.

Note: Graduates of the Community Recreation Leadership program wishing to pursue further studies in recreation may receive course credits or exemptions from universities such as:
• Acadia University
• Dalhousie University
• Memorial University
• Concordia University
• University of New Brunswick
• Lakehead University
• University of Ottawa

ENTRANCE REQUIREMENTS
1. High School
   • Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
2. Comprehensive Arts and Science (CAS) Transition Certificate
3. 3. Adult Basic Education (ABE)
   • Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

A clear Certificate of Conduct is required. This certificate can be obtained from the Royal Newfoundland Constabulary (RNC) or the Royal Canadian Mounted Police (RCMP) and must be valid up until the last day of classes for each semester. As well, students must present a copy of a Vulnerable Sector Check along with the Certificate of Conduct.

Students must possess a valid First-Aid Certificate and basic Cardiopulmonary Resuscitation Certificate (CPR), valid until the end of the semester. A record of immunization is also required.

Please note: Copies of the required Certificate of Conduct, Vulnerable Sector Check, First-Aid, CPR and Immunization Records are to be submitted during registration; otherwise, students may not be able to register for certain courses.

Due to the physical nature of many of the courses offered throughout the two-year program, students are expected to be in good physical condition and demonstrate the ability to take part in intense physical activities in an outdoor setting.
DIPLOMA

- Two years
- September start
- Bay St. George, Carbonear, Grand Falls-Windsor, and Happy Valley-Goose Bay Campuses

Note: The first year of this program is offered every alternate year at the Carbonear and Grand Falls-Windsor Campuses. The Bay St. George Campus has an annual September intake.

Note: Community Studies is offered at the Happy Valley-Goose Bay Campus on a need-determined basis.

COURSES

<table>
<thead>
<tr>
<th>CODE</th>
<th>COURSE</th>
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<tr>
<td>CD2100</td>
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<td>CM1100</td>
<td>Writing Fundamentals</td>
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<td>HR1120</td>
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<td>HR1210</td>
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*Minimum credit value of 3

Semester 2

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<td>PS1121</td>
<td>Psychology II</td>
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Semester 3 (Intersession)

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<td>FW1450</td>
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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4

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<td>CS2500</td>
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*Minimum credit value of 3

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Community Studies Courses

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<td>Managing in the VNP Sector</td>
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<td>Contemporary Issues for Women</td>
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</tbody>
</table>

*Students should note that not all electives are available each semester. Offerings vary according to campus location.

APPLIED ARTS

Community Studies

The Community Studies Program is a two-year diploma program which prepares students for diverse roles in human service/community-based organizations. More specifically, the program focuses on leadership and other career-related skills required to work in a wide variety of human services. These services may range from one-on-one support to positions which involve coordination and facilitation of groups or communities. The courses are fast-paced and dynamic, and are founded on the tenets of experiential learning and direct involvement with individuals, families and communities. Students are challenged to think critically and to become self-directed, lifelong learners.

Throughout the program, students receive career counseling and academic advising to assist them in making course selections best suited to their particular career choices. To this end, students may choose courses available at the campuses from a number of the following areas: Addictions, Community Corrections, Community Development, Developmental Disabilities, Family Services, and Women’s Studies. Not all courses are available at all campus locations.

FUTURE OPPORTUNITIES

Examples of types of organizations, agencies, and departments where Community Studies graduates have been hired include the following:

- Aboriginal Communities, e.g. health and social programs
- College of the North Atlantic, e.g. resource facilitators
- Community-based Correctional Services, e.g. Youth Assessment Centres, John Howard Society and Residential Centres for ex-offenders
- Department of Health and Community Services/Department of Child, Youth and Family Services, e.g. mental health services, addiction services, family services
- Economic and Social Development Agencies, e.g. RED Boards, Family Resource Centres and Community Youth Networks
- Services and Advocacy Groups for Persons with Disabilities, e.g. Residential Support Boards, Associations for Community Living and School Boards
- Services for Women, e.g. Women’s Centres, Violence Prevention Programs and Transition Houses
- Social Programs for Older Adults, e.g. Long Term Care Centres and Congregate Housing

Grads who wish to further their education after graduation may choose to transfer credits to the Bachelor of Arts - Community Studies degree at the Cape Breton University or to the Bachelor of Professional Arts - Communication Studies or Criminal Justice degrees at Athabasca University. This program has provided many students with a foundation for advancement within the human services field or to pursue further education in areas such as Social Work or Education.

OBJECTIVES

1. To expose students to the knowledge, skills, and values needed to work in the human services field.
2. To develop students’ understanding of human relations and of the importance of interpersonal skills as a tool for positive growth and change.
3. To introduce students to the theories and practice of leadership.
4. To develop students’ abilities to perform the role of change agents with individuals, groups, and communities.

ENTRANCE REQUIREMENTS

1. High School
   - Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent

2. Comprehensive Arts and Science (CAS) Transition
   - Comprehensive Arts and Science (Transition) Certificate

3. Adult Basic Education (ABE)
   - Adult Basic Education (Level III) Graduation with a minimum pass mark of 60%

4. Mature Student Status
   - Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

AND

A Clear Certificate of Conduct will be required. This Certificate can be obtained from the Royal Newfoundland Constabulary (RNC) or the Royal Canadian Mounted Police (RCMP) and must be dated no more than three months prior to the first scheduled day of classes for the program.
Digital Animation is a two-year diploma program that combines comprehensive instruction in design fundamentals, industry standard animation software tools and collaborative production techniques, with creative problem solving and visual storytelling methods. From the practice of sequentially drawn images to the creation of fully realized 3D characters and environments, this approach allows the student to study the subject of Digital Animation with the broadest creative scope and range of technical application.

This program is task-oriented; successful progress is based on personal performance in a series of both individual and group production projects. These projects include animated short subject films and video productions from conception to the finished product. The program culminates in a final personal animation project, portfolio and resume suitable for presentation to potential employers.

**EMPLOYMENT OPPORTUNITIES**
Graduates will be prepared for employment in the global communications and entertainment industry, film, broadcasting, gaming and design, as well as visualization services for the medical, engineering, simulation training, architectural and publishing fields.

**OBJECTIVES**
Upon successful completion of the program, graduates will be able to:

1. Apply the concept of “Design” as a professional discipline and historical practice.
2. Use technical skills in areas such as narrative, design, storyboarding, modeling and animation to create digital animation.
3. Demonstrate appropriate work habits, attitudes and behaviors required for employment.

- **ENTRANCE REQUIREMENTS**

  1. **High School**
     Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
  2. **Comprehensive Arts and Science (CAS) Transition Certificate**
  3. **Adult Basic Education (ABE)**
     Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%
  4. **Mature Student Status**
     Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

**Note:** Basic computer skills along with an ability to draw are important and considered definite assets for success in this program.
Diploma - two years
Certificate - one year
• September start
• Corner Brook, Prince Philip Drive, and Happy Valley-Goose Bay Campuses

DIPLOMA COURSES

<table>
<thead>
<tr>
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<tr>
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<td>Positive Behaviour Guidance</td>
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<td>Creative Experiences</td>
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<td>FH1340</td>
<td>Health &amp; Safety</td>
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<tr>
<td>FW1600</td>
<td>Field Placement I</td>
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Five weeks of Field Placement during the semester; Field Placement lecture in the other 10 weeks. Hours of other courses will be adjusted to reflect 10 weeks of the semester.

Semester 2

<table>
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<td>Communications &amp; Human Relations</td>
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Five weeks of Field Placement during the semester; Field Placement lecture in the other 10 weeks. Hours of other courses will be adjusted to reflect 10 weeks of the semester.

Semester 3 (Intercession)

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<td>EE1440</td>
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The lecture and Lab hours per week are based on a 15-week semester. In Intersession, the Lecture and Lab hours will be adjusted to reflect the shorter semester length.

Semester 4

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<td>CM2130</td>
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<td>EE1870</td>
<td>Community Resources OR</td>
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<td>4wks</td>
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Four weeks of Field Placement during the semester; Field Placement lecture in the other 11 weeks. Hours of other courses will be adjusted to reflect 11 weeks of the semester.

Semester 5

<table>
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<td>Family Studies II</td>
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<td>Infant Development &amp; Care</td>
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<td>FW2601</td>
<td>Field Placement IV</td>
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</table>

Four weeks of Field Placement during the semester; Field Placement lecture in the other 11 weeks. Hours of other courses will be adjusted to reflect 11 weeks of the semester.

ECE Certificate courses are those listed in Semesters 1, 2 and 3 above.

APPLIED ARTS

Early Childhood Education

Early Childhood Educators (ECEs) have a lasting, positive impact on the development of children, and provide an essential support for families, communities, and society. They play an essential role in the education and care of children. Early literacy and numeracy, socialization, indoor and outdoor physical activities, and creative experiences in art, music, movement, and dramatic play, are some of the areas in which students will acquire knowledge and skills to support and encourage children's development. Students will have the opportunity to apply their learning on field placements, with different age groups, in the College's demonstration child care centres and a variety of child care settings.

The usual work environment for ECEs involves daily indoor and outdoor activity. Being in good health, energetic, patient, having physical stamina, and having good communication and interpersonal skills are all assets that will help students in this profession.

ENTRANCE REQUIREMENTS

1. High School
   - Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent.

2. Comprehensive Arts and Science (CAS) Transition
   - Comprehensive Arts and Science (CAS) Transition Certificate

3. Adult Basic Education (ABE)
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%

4. Mature Student Status
   - Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

AND

Early Childhood Education (ECE) Documentation Required:
1. Current record of immunizations
2. Clear Certificate of Conduct, including the "vulnerable sector" category, from the RNC or RCMP; to include all jurisdictions in which the applicant has lived in the past 10 years, and
3. Satisfactory Child Protection Records Check

The Certificate of Conduct and the Child Protection Records Check:
• Must be dated no more than three months prior to the first scheduled day of classes for the program;
• Are valid for a period of three years, unless the student is absent from the program for six months or more.

Where an applicant cannot provide a clear Certificate of Conduct, the applicant may contact the Provincial Director of Child Care Services requesting a review. Such a review would be based on a determination that the offence is not one that could reasonably be considered to pose a risk to children. The applicant should send the Certificate of Conduct and a request for a review to: Provincial Director of Child Care Services, Department of Child, Youth and Family Services, P.O. Box 8700, 95 Elizabeth Avenue, St. John's, NL A1B 3X4.

FIELD PLACEMENT

Students complete four Field Placements during the Diploma program, two in year 1 and two in year 2. Each Field Placement includes time spent in the College's demonstration child care centre.

CERTIFICATION

The graduate is awarded a Diploma of Applied Arts in Early Childhood Education from the College. This program indicates successful completion of two years of post-secondary education, combining theory and practical experience in the care, education, and guidance of children, as well as best practices in developmentally appropriate programming and environments. Completion of this program is one of the steps towards provincial Child Care Services (CCS) Certification granted through the Association of Early Childhood Educators of Newfoundland and Labrador.
Currently, the Early Childhood Education Diploma is awarded Level II CCS Certification for infant, preschool and school-age children.

Please note: Students must possess a valid First Aid Certificate to be eligible for a Diploma of Applied Arts in Early Childhood Education from the College.

EMPLOYMENT OPPORTUNITIES
Graduates of the Diploma program will be prepared for employment with organizations caring for children, or self-employment, providing child care. With relevant work experience, graduates will be able to develop programs for and/or supervise in child care services in communities throughout the province.

EARLY CHILDHOOD EDUCATION - CERTIFICATE
Students in the one-year Certificate program support children’s learning, and their development in all areas: physical, social, emotional, cognitive, and language development. The Early Childhood Education Certificate program is the first step in becoming a qualified ECE. Certificate graduates will be eligible for Level I Child Care Services Certification in preschool and school-age care (working with children ages 2-12). The one-year Certificate is also the same as the first year of the Early Childhood Education Diploma program, so graduates can continue on to complete the Diploma in just 2 more semesters.

OBJECTIVES
Upon successful completion of the Certificate program, graduates will be able to:
1. Support and promote the overall development of children aged 2 to 12 years.
2. Develop and maintain developmentally appropriate programs, and indoor and outdoor environments that reflect best practices.
3. Explain variations in the developmental abilities of children aged 2 to 12 years.
4. Maintain caring and responsive relationships with the children in their care.
5. Carry out effective and positive behaviour guidance, and discuss challenging behaviour.
6. Demonstrate professional behaviour and reflective practice in interactions with children, families and the community.
7. Identify and outline provincial child care legislation, standards and policies.

FIELD PLACEMENT
Students complete two Field Placements during the Certificate program. Each Field Placement includes time spent in the College’s demonstration child care centre.

CERTIFICATION
The graduate is awarded a Certificate of Applied Arts in Early Childhood Education from the College. This parchment indicates successful completion of one year of post-secondary education, combining theory and practical experience in the care, education, and guidance of children. This is one of the steps towards provincial Child Care Services (CCS) Certification through the Association of Early Childhood Educators of Newfoundland and Labrador (AECENL). Currently, the Early Childhood Education Certificate is awarded Level I CCS Certification for preschool and school-age children.

Please note: Students must possess a valid First Aid Certificate to be eligible for a Certificate of Applied Arts in Early Childhood Education from the College.

EMPLOYMENT OPPORTUNITIES
Graduates of the Certificate program will be prepared for employment with organizations caring for children, or self-employment, providing child care in communities throughout the province.
PROGRAM OF STUDIES
A plan for ECE course completion is developed with each student, based on an assessment of any previous ECE or related training they may already have, and any PLAR credits received.

Several courses require students to be currently working/volunteering directly with children in an early childhood setting, for a minimum of 15 hours per week for the semester. Please see the list of these courses below.

EE1180 Curriculum I
EE1290 Positive Behaviour Guidance
EE1420 Creative Experiences I
FH1340 Health & Safety
EE1811 Curriculum II
EE1341 Child Development II
EE1360 Observation
EE2421 Creative Experiences II
EE2500 School-Age Development & Care
EE1440 Family Studies I
EE2380 Curriculum III
EE2340 Child Development III
EE2255 Advanced Behaviour Guidance
EE2260 Introduction to Child Care Administration
EE2470 Infant Development & Care
EE1481 Inclusion II

Please note that this is not the full list of courses for the Diploma or Certificate program. For the complete listing of courses required for the Diploma and Certificate programs, please see the Early Childhood Education full-time program pages.

APPLIED ARTS
Early Childhood Education by Distance Education

Early Childhood Education (ECE) is also available by distance education, online through the college’s Office of Distributed Learning (DL). Program descriptions, objectives, and the list of courses may be found on the Early Childhood Education full-time program pages.

Distance students register each semester from a list of course offerings. These offerings, and other important information about ECE by Distance, are posted on the DL website at: http://dls.cna.nl.ca/ece. Students may enroll on a full-time or part-time basis. Since programs at the college are normally reviewed on a five-year cycle, students who go beyond the five-year time frame for completion by distance may be required to complete additional or revised courses before being deemed eligible to graduate.

Several courses in ECE by Distance require students to be currently working/volunteering directly with children in an early childhood setting, for a minimum of 15 hours per week for the semester. Each semester, all ECE distance students must submit a Learner Status for Course Registration form, which includes information on employment status.

ENTRANCE REQUIREMENTS
All entrance requirements listed on the Early Childhood Education full-time program pages must be met: both the academic requirements and the ECE program documentation requirements. Further information on obtaining ECE program documentation may be found at: http://dls.cna.nl.ca/ece.

In order to register for certain courses by distance education, please note the employment/volunteer requirement as stated above.

NOTE regarding ECE program documentation:

Applicants currently working in a regulated child care centre
An applicant may submit copies of their current satisfactory Certificate of Conduct, their current satisfactory Child Protection Records Check, and their current record of immunizations along with their Confirmation of Documentation and Employment Status form (available at: http://dls.cna.nl.ca/ece). The form must be dated no more than three months prior to the first scheduled day of classes.

Applicants not working in a regulated child care centre
An applicant must submit all the documentation as outlined in the requirements for the full-time program. Once admitted into the program, a student who does not enroll in courses for six months or more must submit a new Certificate of Conduct and Child Protection Records Check.

FIELD PLACEMENT
Students in the Diploma program will be required to complete four Field Placements. A minimum of 4 weeks must be completed at a CNA demonstration child care centre, over a maximum of two Field Placement courses. Field Placement courses are planned in conjunction with the ECE Distance Coordinator.

Students in the Certificate program will be required to complete two Field Placements. A minimum of 4 weeks must be completed at a CNA demonstration child care centre, over a maximum of the two Field Placement courses. Field Placement courses are planned in conjunction with the ECE Distance Coordinator.

CERTIFICATION
The Diploma program graduate is awarded a Diploma of Applied Arts in Early Childhood Education from the College. This parchment indicates successful completion of two years of post-secondary education, combining theory and practical experience in the care, education, and guidance of children, as well as best practices in developmentally appropriate programming and environments. Completion of this program is one of the steps towards provincial Child Care Services (CCS) Certification through the Association of Early Childhood Educators of Newfoundland and Labrador (AECENL). Currently, the Early Childhood Education Diploma is awarded Level II CCS Certification for infant, preschool and school-age children.

The Certificate program graduate is awarded a Certificate of Applied Arts in Early Childhood Education from the College. This parchment indicates successful completion of one year of post-secondary education, combining theory and practical experience in the care, education, and guidance of children. Completion of this program is one of the steps towards provincial CCS Certification through AECENL. Currently, the Early Childhood Education Certificate is awarded Level I CCS Certification for preschool and school-age children.

PRIOR LEARNING ASSESSMENT AND RECOGNITION (PLAR)
Students will be given every opportunity to receive credit for past learning experience through a comprehensive systematic process of evaluation. Once enrolled and active in the program, students will be permitted to submit PLAR applications for any courses in the program for which they believe they have already acquired the appropriate level of knowledge and skills, except Field Placements II, III and IV. Please refer to the ECE webpage at http://dls.cna.nl.ca/ece/plar.htm for further information.

EMPLOYMENT OPPORTUNITIES
Graduates of the Diploma program will be prepared for employment with organizations caring for children, or self-employment, providing child care. With relevant work experience, they will be able to develop programs for and/or supervise in child care services in communities throughout the province.

Graduates of the Certificate program will be prepared for employment with organizations caring for children, or self-employment, providing child care in communities throughout the province.

LOCATION
ECE by Distance is available province-wide with on-campus Field Placements currently held at the Prince Philip Drive, Corner Brook, and Happy Valley-Goose Bay Campuses.
APPLIED ARTS
Film and Video Production

This program is designed to prepare students to pursue new employment opportunities in the Film and Video Production industry and to produce quality entertainment and documentary products which reflect Newfoundland and Labrador’s unique cultural heritage. Graduates will also be positioned to avail of opportunities that arise nationally or internationally.

The film and video field encompasses the use of cameras, lighting and audio equipment, editing facilities and digital effects equipment. Areas of instruction include the history and evolution of the film industry, photography, screening and peer critique, cinematography, and rigging and grip. The primary focus of the program is to prepare students to perform the technical tasks associated with filmmaking. Graduates will be well-positioned to perform all of the tasks that occur behind the camera, while the acting and related talents that occur in front of the camera will be left to other specialized training programs.

OBJECTIVES
1. To provide students with an overview of the history and evolution of the film industry.
2. To provide students with the knowledge and technical training required to develop and produce quality entertainment and documentary products.
3. To provide students with an opportunity to develop teamwork skills and to acquire relevant industry certifications.

ENTRANCE REQUIREMENTS
1. High School
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent

2. Comprehensive Arts and Science (CAS) Transition Certificate

3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%

4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

EMPLOYMENT OPPORTUNITIES
The Province of Newfoundland and Labrador has committed itself to the development of a healthy and viable film production industry. The establishment of the Newfoundland and Labrador Film Development Corporation in 1997 represented a concerted focus on the part of government to attract film production projects to the province, and the subsequent introduction of the most generous incentives in North America signaled the depth of the commitment to this new sector.
**APPLIED ARTS**

**Graphic Communications**

Graphic Communications is a technology-based, two-year diploma program designed to provide training in modern principles and practices used in the printing and graphic communications industry. A comprehensive hands-on approach ensures that students receive a marketable set of skills within a positive learning environment.

The goal of the program is to help the student develop personal and professional competencies in communications, problem solving, teamwork, electronic pre-press, production technologies, and post-press operations that will help lead to successful employment. The program structure is in line with the national skills standards for the printing and graphic communications industry.

Program topics include: problem solving, basic layout & design, electronic pre-press, offset press operation, post-press operation skills, and screen printing. Students are exposed to the computer software applications commonly used in this industry, such as page layout, design, image manipulation, and computer graphics. Other topics include: digital scanning, colour proofing, digital photography, digital printing (colour and black & white), embroidery graphics, laser engraving and 3D printing.

Our fleet of equipment is constantly being modernized to offer an expanded range of technical skills. Some of our equipment and new additions include:

- Five modern Heidelberg offset presses
- Xerox colour digital press
- Computer-to-plate (CTP) platesetter
- Four-colour screen printing machine
- Vinyl cutter for signage and graphics
- Wide format inkjet printer
- Macintosh computer labs
- Embroidery machine
- Laser engraving machine
- 3D printers

A program resembling a real-world work environment reinforces the learning process for the students.

**OBJECTIVES**

Following successful completion of the program, the graduating student will be able to:

1. Demonstrate professional and personal competencies required for the printing and graphic communications industry.
2. Apply a teamwork approach to problem-solving techniques.
3. Demonstrate a hands-on knowledge of electronic pre-press methods and equipment.
4. Operate traditional and digital printing equipment.
5. Demonstrate strong technical skills for computer programs used in the printing and graphic communications industry.
6. Demonstrate safe operation of bindery and finishing equipment.
7. Operate related graphic communications equipment such as: wide-format printer, embroidery machine, screen printing machine, laser engraver, and 3D printer.

**EMPLOYMENT OPPORTUNITIES**

Graduates of the program may be employed in many areas of the printing and graphic communications industry. Some of the entry-level positions include: design & layout agencies, commercial printers, in-plant printers, government agencies, digital copy centers, sign printers and corporate promotional suppliers.

**ENTRANCE REQUIREMENTS**

1. **High School**
   - Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent.
2. **Comprehensive Arts and Science (CAS) Transition Certificate**
   - Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent.
3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%.
4. **Mature Student Status**
   - Applicants who do not meet the educational pre-requisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

**PLEASE NOTE:**

Basic computer literacy skills as well as strong core skills in English and Mathematics are definite assets for this program. These skills are important for success in the program.
## Courses

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The course and Lab hours per week are based on a 15 week semester. In intersession, the course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

| Semester 4 |                                            |    |    |    |
| GA1520   | Image Manipulation I                       | 3  | 2  | 2  |
| GA1880   | Business Practices                        | 3  | 3  | 0  |
| GA1351   | Motion II                                  | 3  | 3  | 0  |
| GA2380   | Production for Designers                   | 2  | 1  | 2  |
| PY1200   | Photography II                             | 3  | 2  | 3  |
| CR1531   | Web Design II                              | 2  | 1  | 2  |
| GA2640   | Illustration III                           | 2  | 1  | 3  |
| Semester 5 |                                            |    |    |    |
| GA2720   | Design Management Identity                 | 3  | 2  | 2  |
| GA2430   | Page Composition III                       | 3  | 2  | 2  |
| Elective |                                            | 3  | 2  | 2  |
| CR2530   | Web Design III                             | 2  | 2  | 1  |
| GA2350   | Motion III                                 | 3  | 2  | 3  |
| CM2200   | Oral Communications                        | 2  | 2  | 0  |
| JW2100   | Package Design                             | 3  | 2  | 2  |
| Semester 6 (Intersession II) |                                      |    |    |    |
| SD0150   | Field Placement Preparation I              | 1  | 1  | 0  |
| FW2800   | Field Placement                            | 4  | 4 weeks | |
| FW2801   | Field Placement Reflection                 | 1  | 1  | 0  |

The course and Lab hours per week are based on a 15 week semester. In intersession, the course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

### Graphic Design Electives

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Graphic Design is a technology-based two-year program that helps students hone their creativity while learning the cutting-edge design skills needed in today’s fast-paced global business environment. Graphic designers develop outstanding solutions for clients in an industry that embraces and rewards great ideas, a passion for excellence, attention to detail and a love of digital technology.

Specifically, students will learn how to:

- Create powerful, inspiring designs that work in a variety of media, from print to screen
- Design and compose flyers, brochures, books and magazines
- Develop eye-catching t-shirts, shopping bags, posters and billboards
- Create logos, illustrations, information and motion graphics
- Design way-finding systems and corporate identities
- Develop animations, websites and interactive projects
- Explore digital photography, package design, signage, traditional and digital printing, and much more

The College’s state-of-the-art facilities offer students the chance to gain hands-on experience on industry-standard tools and learn valuable real-world skills. The program’s strong technical core, as well as its focus on creative problem-solving, has helped students win dozens of regional, provincial and national awards over the past ten years. Graduates are working at exciting careers throughout Canada and around the world.

### Objectives

Upon successful completion of the program, graduates will be able to:

1. Demonstrate strong technical and conceptual design skills for print and screen.
2. Demonstrate hands-on knowledge of, and experience with, industry-standard design and production tools and equipment.
3. Demonstrate the business, communication, team-work and time-management skills necessary for this industry.
4. Apply an approach to the design process that focuses on creativity while meeting clients’ needs.
5. Successfully compete for entry-level employment in the Graphic Design industry.

### Employment Opportunities

Past graduates have a strong record of success in the Graphic Design industry, both within Newfoundland and Labrador and beyond. Graduates can choose from a variety of employment options such as advertising agencies, design companies and in-house art departments, as well as freelance work or self-employment with clients located anywhere in the world.

### Entrance Requirements

1. **High School**
   - Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
2. **Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate**
3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%
4. **Mature Student Status**
   - Applicants who do not meet the educational pre-requisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

### Application Portfolio Requirements

All applicants to the Graphic Design program must submit a portfolio as part of the admission requirements. A portfolio is a personal selection of the applicant’s work that shows the potential to build on demonstrated skills and aptitudes when in the program.

The applicant portfolio should consist of:

- A written personal statement explaining your reasons for wanting to be a graphic designer and your interest in the program at College of the North Atlantic. This should be no longer than 500 words or a single typed page.
- One project, that relates to the College’s Graphic Design program, chosen from the following three options:
  - A magazine ad promoting the program. The ad should focus on at least one positive attribute of the program, and should be produced in colour. The College’s website address should be included as well. The size of the ad should be no larger than 20 cm in any dimension.
  - A poster promoting the Graphic Design program. The poster should focus on one positive message about the program, and should include the program name, the College’s name and the College’s website address. The size of the poster should be 28 cm x 43 cm (11 x 17 inches).
  - A logo for the Graphic Design program. The logo should be produced in no more than two (2) colours, not including white. The program title (Graphic Design) and the College’s initials (CNA) should be part of the logo. Applicants should ensure that the logo suggests one or more of the positive attributes of the program.
- A minimum of five (5) personal portfolio pieces, which could include (but are not limited to) drawings and sketches, photographs, paintings, websites, computer-generated images, or motion-based work. It is preferable to submit works in more than one category but it is not required.

### Other Requirements

- Applicants should submit only copies of their work. No originals should be submitted.
- Do not submit any framed, fragile or 3-dimensional work.
- Applicants must ensure that the portfolio is legible and legible by a computer other than the one used to burn it. Only digital submissions that cannot be opened will not be considered.
- The applicant’s work should be submitted in a case, binder or folio, with measurements not exceeding 43 cm x 29 cm (11 x 11 inches).
- The applicant’s work should be submitted in a case, binder or folio, with measurements not exceeding 43 cm x 29 cm (11 x 17 inches).

**Please Note:** For further information on the portfolio process, please refer to the Graphic Design program page on the College’s website (www.cna.nf.ca).
This program prepares students to work as professional journalists. The curriculum provides a strong foundation in the fundamentals of reporting and news writing as well as in media technical skills. The program gives students hands-on training in print, radio, television and online journalism. Students hone their skills through the production of an online newspaper, a provincial youth newspaper, a weekly radio show, and various video projects. A special projects course in the fourth semester will allow students to focus on print, broadcast or online media. Students complete courses in academic and general interest fields, thereby broadening their educational backgrounds and assisting them to understand today's society. It is highly recommended that those applying for this program be competent in English language usage and that they possess a general knowledge of current affairs. It is further recommended that students have a word processing speed of 25 words per minute (wpm) before entering the program.

### OBJECTIVES

1. To enable the student to acquire an understanding of the news media, its influence on society, and the responsibilities of the journalist.
2. To provide students with training in the skills necessary to produce news for print, broadcast and online media.
3. To provide students with training in the skills necessary to gather, write and present news in an accurate, comprehensive and responsible manner.
4. To teach students about the realities of working in the journalism industry.
5. To train students in the production of quality copy in specialized areas of writing.
6. To enable students to acquire an understanding of the law as it applies to journalism.
7. To provide students with training in newspaper layout and design using software that can be applied to a variety of desktop publishing formats.

### ENTRANCE REQUIREMENTS

1. **High School**
   - Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent and a minimum of 60% in level 3000 English
2. **Comprehensive Arts and Science (CAS) Transition Certificate**
3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level iii) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%
4. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
## Applied Arts

### Journalism (Post Diploma)

This accelerated program allows students who already have a university degree or a two-year college diploma to obtain a Journalism diploma in one year.

This program prepares students to work as professional journalists. The curriculum provides a strong foundation in the fundamentals of reporting and news writing as well as in media technical skills. The program gives students hands-on training in print, radio, television and online journalism. Students hone their skills through the production of an online newspaper. A special projects course in the fourth semester will allow students to focus on print, broadcast or online media. Students complete courses in academic and general interest fields, thereby broadening their educational backgrounds and assisting them to understand today’s society.

It is highly recommended that those applying for this program be competent in English language usage and that they possess a general knowledge of current affairs. It is further recommended that students have a word processing speed of 25 words per minute (wpm) before entering the program.

### Objectives

1. To enable the student to acquire an understanding of the news media, its influence on society, and the responsibilities of the journalist.
2. To provide students with training in the skills necessary to produce news for print, broadcast and online media.
3. To provide students with training in the skills necessary to gather, write and present news in an accurate, comprehensive and responsible manner.
4. To teach students about the realities of working in the journalism industry.
5. To train students in the production of quality copy in specialized areas of writing.
6. To enable students to acquire an understanding of the law as it applies to journalism.
7. To provide students with training in newspaper layout and design using software that can be applied to a variety of desktop publishing formats.

### Entrance Requirements

A university degree OR a minimum of a two-year college diploma from an institution recognized by the College of the North Atlantic (OR a combination of other post-secondary work and industry experience acceptable to the college as an entrance requirement).

### Courses

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.
The Music Industry and Performance program is designed for students who wish to pursue careers as performers in the music industry. This industry has become increasingly prominent in recent years as evidenced in a dramatic increase in the number of successful acts from the Atlantic Provinces. Events such as the East Coast Music Awards and the Juno Awards highlight the success of such performers and demonstrate that the region is generating music that is gaining worldwide popularity.

The intent of this program is to provide an opportunity for students whose interests include country, traditional, fusion, pop, rock, blues, and other genres, to refine their skills in the company of like-minded students, while gaining exposure to all aspects of the music industry. Hands-on experience in the recording studio, scheduled performances in local venues and extensive exposure to sound, business, marketing and public relations skills, will enable students to realistically assess their prospects for success in a fiercely competitive industry. Indeed, some students may determine that they may not have what it takes to succeed as performers but are ideally suited for careers as agents or managers. In either case, the Music Industry and Performance program provides the skills which should ensure success.

It should be noted that the program is not intended for students seeking a career in the field of classical music. Universities provide excellent programs for students whose talents rest in this area, and the college strongly recommends these programs.

**Note:** Successful graduates from this program may consider returning to the college for a third year in which they can complete the Recording Arts diploma program. This option allows for the completion of both diploma programs in three (3) years.

**FUTURE OPPORTUNITIES**
Graduates from this program should not expect to enter into conventional 9-5 positions with established companies. The music industry is fuelled by a combination of solid talent and strong managerial personnel. Graduates can expect to operate as independent entrepreneurs while potentially establishing long-term partnerships with recording companies, distributors, managers, and other key industry stakeholders. The environment is challenging but there are plenty of success stories.

**OBJECTIVES**
1. To provide students with training in the technical and financial aspects of the music industry, with particular emphasis on the industry’s complex standard business practices.
2. To provide students with an opportunity to review the history of music and its evolution into distinct genres.
3. To provide students with an opportunity to refine musical talent and to demonstrate that talent through scheduled performances in local venues.
4. To provide students with opportunities for social and intellectual development in order to meet the challenges of a demanding industry.
DIPLOMA

• Two years
• September 2009
• Prince Philip Drive Campus
• Note: The first year of this program is offered every alternate year.

COURSES

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Semester 2

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Semester 3 (Intersession I)

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The lecture and lab hours per week are based on a 15-week semester. In intersession, the lecture and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4

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The lecture and lab hours per week are based on a 15-week semester. In intersession, the lecture and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

OBJECTIVES

1. To train students to participate in the management of food services in health care facilities, commercial catering services, educational facilities and the hospitality industry.
2. To provide students with a broad understanding of activities involved in the administration of food services.
3. To assist students in the development of supervisory skills (plan, organize, direct, control and evaluate).
4. To train students to supervise food preparation and distribution according to established regulations and standards.
5. To assist students in the development of human resource management skills in leadership, teamwork, cooperation and problem solving.
6. To train students to apply a knowledge of normal and clinical nutrition, and participate in the provision of nutritional care in a variety of settings.
7. To train students to communicate appropriately with clients, staff and management, and to exhibit professional conduct.

ENTRANCE REQUIREMENTS

1. High School

   1.1 Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent

2. Comprehensive Arts and Science (CAS) Transition

   Comprehensive Arts and Science (Transition) Certificate

3. Adult Basic Education (ABE)

   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%

4. Mature Student Status

   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

   AND

   A Health Certificate and a clear Certificate of Conduct are required. The Certificate of Conduct must be dated no more than three months prior to the first scheduled day of classes for the program.

   Students are required to successfully complete the National Sanitation Training Program and WHMIS to be eligible for a diploma in this program from the college.

   Students must also possess a valid First Aid Certificate to be eligible for a diploma in this program from the college.

NUTRITION AND FOODSERVICE MANAGEMENT

The two year program leading to a Diploma in Nutrition and Foodservice Management has been developed to achieve standards of skill and competency required in the field of food service management. Applicants for the program should have an interest in people, the ability to organize, an appreciation of food quality, an awareness of business principles as well as good health and vitality.

The program involves a combination of classroom work and practical experience. Students obtain theoretical and practical training in food preparation, nutrition, foodservice operations, supervision, accounting, purchasing procedures as well as first aid and sanitation.

Practical training which occurs in semesters 3 and 6 is spent in hospital and institutional settings.

APPLIED ARTS

Nutrition and Foodservice Management
The Recording Arts program is a two-year diploma program which provides training in the skill areas of sound recording and editing, sound reinforcement and digital processing of audio signals.

Sound recording involves studio design and setup, analog and digital multitrack recording, mixing and editing.

Sound reinforcement involves the design and operation of appropriate sound systems to support events such as theatre performance and music concerts in outdoor and indoor environments.

Digital processing of audio signals includes the recording and editing in a non-linear environment used in CD mastering, and editing sound effects and dialogue for film or theatre.

Recording Arts students receive hands-on training in sound system and studio setup, running live sound as well as recording/mixing and editing sessions in analog and digital media. The extensive hands-on experience will prepare the graduate for employment in any of the numerous occupations found in the sound recording and reinforcement industry. The business of music will be dealt with for graduates with an inclination toward independent recording projects and facilities as well as the independent sound reinforcement business.

Note: Successful graduates from this program may consider returning to the college for a third year in which they can complete the Music Industry and Performance diploma program. This option allows for the completion of both diploma programs in three (3) years.

OBJECTIVES

1. To provide students with training in the aural and technical aspects of recording, mixing and editing music in analog and digital media.

2. To assist students in developing skills in the recording and editing of music and sound effects for animation, film and video as well as operating same for live theatre productions. A lighting component will allow the graduate to fill theatre positions that often require a knowledge of lighting as well as sound.

3. To provide students with knowledge of basic business practices with particular emphasis placed on the complexities of the music business.

4. To assist students with the development of appropriate attitudes, behaviours, and work habits in preparation for employment as a sound recordist/operator.

EMPLOYMENT OPPORTUNITIES

Graduates of the Recording Arts program find (and have found) work as the following in their appropriate venues: Production Mixer, Boom Operator, Production Sound Assistant, Sound Transfer Operator, Sound Editing, Dialogue Editor, Sound Effects Editor, Music Editor, Assistant Sound Editor, ADR/Sound Effects Mixer, The Music Mixer, Re-recording Mixer (Dubbing Mixer), Dubbing Theatre Sound Camera Operator, and Sound Maintenance Engineer.

ENTRANCE REQUIREMENTS

1. High School
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent including:
   Mathematics (4 credits) chosen from: Advanced: 2205, 3205 (50% in each course)
   Academic: 2204 (50% minimum), 3204 (60% minimum)

2. Comprehensive Arts and Science (CAS) Transition Certificate with the following courses:
   Math Fundamentals MA1040 and MA1041

3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) including the following courses:

4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
DIPLOMA
- Two years
- September start
- Anna Templeton Center (Prince Philip Drive Campus)

COURSES

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Semester 2

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Semester 6 (Intersession)

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The lecture and lab hours per week are based on a 15-week semester. In intersession, the lecture and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

APPLIED ARTS

Textiles: Craft & Apparel Design

Textiles: Craft and Apparel Design provides a strong foundation in the skills and knowledge of design and construction for craft and apparel. Individuals with creative and artistic interests will learn by doing as they gain skills in drawing, design, sewing, embroidery and quilting, apparel construction, knitting, weaving, print and dye, and related areas.

Different skills, media and techniques are introduced in the first year of the program. Innovation and creativity are encouraged through contemporary applications of traditional skills and the incorporation of non-traditional materials into project ideas. The second year is an opportunity to focus on two studio areas. Students may choose to concentrate their studies in the areas of knitting, print and dye, embroidery and quilting, weaving, and/or apparel construction with a focus toward developing technical skills. Both years are supported by courses in computer applications, art and craft history, communication skills, entrepreneurial studies, portfolio development, proposal writing, and special projects.

The program strives for innovative training that reaches beyond the classroom. The emphasis is on “real life” experiences that include involvement in fine craft and design fairs, whole trade shows, gallery exhibitions, commissions, and fashion shows.

Graduates of the Textiles: Craft and Apparel Design program have a solid foundation to build a career as an independent textile artist or an employee in the craft and/or apparel industry. The program may also inspire individuals to pursue further studies in particular concentration areas.

OBJECTIVES

1. To develop students’ skills and knowledge in craft and apparel and on-going technical innovation in all studio areas and creative processes.
2. To provide an opportunity for students to explore and experiment with a variety of creative and artistic techniques.
3. To provide students with a strong foundation in design competencies and applications.
4. To provide students with an increased awareness of and appreciation for fine art and craft, and their varying schools of philosophical thought.
5. To assist students in the development of entrepreneurial skills through “real life” experiences and encourage a spirit of entrepreneurship.
6. To develop student’s ability to promote one’s work through the development of communication skills, portfolio development, and organizing special events.
7. To develop student’s desire for life-long learning.

ENTRANCE REQUIREMENTS

1. High School
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average Pass mark of 60%
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause

Please note: This program is not suitable for applicants with respiratory problems or color blindness.
Video games are a recognized technological, cultural and economic force in today's society. The game industry is a growing industry with a varying range of career opportunities. If you have a passion for creating stories, characters, environments and gameplay for video games, this is the program for you.

The primary focus of this program is Game Design. Today's Game Designer needs to have skills or knowledge in many different areas. The Video Game Design program provides students a marketable set of skills by studying game theory, level design, cinematics, art, animation, and production methods. It emphasizes creative writing and non-linear storytelling skills. Students will study design principles and game documentation, the creative process and pre-production planning, the processes of game design, level design, audio, and visual-based principles such as game interface design, and 2D and 3D modeling.

These skills are further built on by a rigorous look at the production process, project and team management techniques, and the business of games. The program's focus will allow students to create quality content to place in personal portfolios to demonstrate a thorough understanding of video game design.

**OBJECTIVES**

1. To introduce students to computer software and the hardware resources to create video games.
2. To provide students with the knowledge and technical training to design video games.
3. To assist students in the development of appropriate attitudes, behaviours, and work practices for employment in the game design industry.
4. To assist students in the development of the ability to promote their work through the advancement of communication skills and portfolio development.
5. To assist students in the development of skills to work productively in a team environment.
6. To assist students to cultivate a desire for life-long learning.

**ENTRANCE REQUIREMENTS**

1. **High School**
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent

2. **Comprehensive Arts and Science (CAS) Transition**
   Comprehensive Arts and Science (Transition) Certificate

3. **Adult Basic Education (ABE)**
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%

4. **Mature Student Status**
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause
DIPLOMA
- Two years
- September start
- Bay St. George Campus

APPLIED ARTS

Visual Arts

Please note that Studio Options are not available as electives.

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<tr>
<th>COURSES</th>
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Electives
A list of elective courses to be offered in each semester will be made available prior to registration. Please note that EL1160 Leisure Arts cannot be taken as an elective in this program. Other courses may be chosen provided that:
1. all prerequisites have been met,
2. the course is offered during the semester,
3. the maximum enrolment for the course is not exceeded,
4. the student's schedule can accommodate all scheduled classes for that course.

The Visual Arts program provides basic and intermediate studio experiences for the student. The four-semester program has been carefully designed to be both comprehensive and general in nature. Previous experience or a portfolio is not required; however, by the time the students complete the program, they will have developed skills in drawing, design, photography, art history, and a selection of visual art and craft areas. The program is designed to provide a foundation for people who have a general interest in art as well as for those who are interested in career-oriented training. Particular emphasis is placed on developing students’ personal and creative potential while learning new technical skills. Unique program features such as studio field trips, gallery visits, and guest artist lectures support the hands-on studio component of the curriculum as well as the business of art. At the end of year two, the students host an exhibition of their work and produce a catalogue highlighting their art work and personal development over the two years of study.

Through the production of a portfolio and relevant career counselling, students will be well prepared to make career choices in art-related fields and to apply for advanced standing in other art schools and training institutions.

OBJECTIVES
1. To provide students with training in a range of visual arts skills, media and techniques.
2. To provide students with opportunities to grow intellectually, culturally and socially by exploring the various facets of the arts and the nature of the creative process.
3. To provide students with opportunities to develop self-expression through the visual arts in a way that can be personally satisfying.

ENTRANCE REQUIREMENTS
1. High School
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
SCHOOL OF
BUSINESS &
INFORMATION
TECHNOLOGY
Academic:
Eligibility for admission to Business Administration/ Business Management programs requires the applicant to meet one of the following four academic criteria:

1. High School
   Provincial High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English 3201 or English 3202 (60% minimum)
   ii. Mathematics (4 credits) chosen from:
      - Advanced: 2205, 3205 (50% minimum in each course)
      - Academic: 2204 (50% minimum), 3204 (60% minimum)
   iii. Five credits at the 3000 Level

2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate with the following courses:
   i. Math Fundamentals: MA1040, MA1041

3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
   i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   Applicants with Adult Basic Education (Level III) Graduation with a different Profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status
   Applicants who do not meet the education prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
**CERTIFICATE**

- One year
- Start date varies: At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- Bay St. George, Burin, Carbonear, Clarenville, Corner Brook, Grand Falls-Windsor, Port aux Basques, and Prince Philip Drive Campuses and through Distributed Learning (DL)
- Note: The Business Administration Certificate Program is offered through Continuing Education at Prince Philip Drive Campus in addition to the regular full-time program.
- Note: The Business Administration program is offered every alternate year at the Carbonear Campus.

**COURSES**

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**Semester 2**

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**Semester 3 (Intersession)**

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

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**BUSINESS**

### Business Administration

#### ENTRANCE REQUIREMENTS

**Academic**

Eligibility for admission to Business Administration/Management programs requires the applicant to meet one of the following four academic criteria:

1. **High School**
   - Provincial High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     - English 3201 or English 3202 (60% minimum)
     - Mathematics (4 credits) chosen from:
       - Advanced: 2205, 3205 (50% minimum in each course)
       - Academic: 2204 (50% minimum), 3204 (60% minimum)
     - Five credits at the 3000 Level

2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate with the following courses:
     - Math Fundamentals: MA1040, MA1041

3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
     - English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   - Applicants with Adult Basic Education (Level III) Graduation with a different Profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. **Mature Student Status**
   - Applicants who do not meet the education prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

#### PROGRAM TRANSFERABILITY

The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

**Year 1**: The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

**Year 2**: Students select one area of specialization for the second year from the following options: Accounting, General, Human Resource Management, and Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

**Year 3**: The third-year options are Accounting, Human Resource Management, and Marketing. Students may graduate with a Business Management Diploma at the end of Year 3.

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- Cape Breton University, Sydney, Nova Scotia
- Athabasca University, Alberta
- Lakehead College, Alberta
- University of Lethbridge, Alberta
- Lakehead University, Ontario
- University of New Brunswick, Saint John campus
- Okanagan College, British Columbia
- Northwood University, Michigan, USA
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada
- The Payroll Association of Canada

Graduates may also wish to further their studies to achieve professional designations with:

- Canadian Institute of Financial Planning
- Canadian Professional Sales Association
- Canadian Public Relations Society
- International Personnel Management Association (IPMA) – Canada
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada
- The Payroll Association of Canada
**DIPLOMA**

- Two years
- Start date varies: At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- Burin, Carbonear, Clarenville, Corner Brook, Grand Falls-Windsor, and Prince Philip Drive Campuses

### COURSES

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The course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

**Year 1 courses can be completed at campuses offering the Business Administration certificate program.**

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### BUSINESS

**Business Administration (Accounting)**

The Business Administration (Accounting) program has been developed to provide the student with the knowledge and skills required in the field of general financial accounting. The graduate will be able to provide comprehensive information and comprehensive reports to management.

Throughout the program the student will develop a learning portfolio and career and educational plans.

**Note:** Year 2 of the Business Administration (Accounting) and the Business Management (Accounting) programs is common.

### OBJECTIVES

1. Prepare and analyze financial statements for internal and external decision making.
2. Use current technology to analyze results and generate appropriate reports.
3. Develop financial and budgetary plans based on varying business objectives, changing business environments, and underlying business assumptions.
4. Demonstrate accounting skills needed to secure employment in an entry-level accounting position.
5. Demonstrate application of the Conference Board of Canada employability skills.

### CAREER OPPORTUNITIES

Graduates may obtain employment in a variety of businesses, organizations and government departments. Possible positions are: accountant, comptroller, business analyst, taxation officer, financial officer, administrative manager, payroll officer.

### ACCREDITATION

Business Administration (Accounting) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

### PROGRAM TRANSFERABILITY

The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

**Year 1:** The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

**Year 2:** Students select one area of specialization for the second year from the following options: Accounting, General, Human Resource Management, and Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

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  - Certified General Accounts of Canada (CGA)
  - The Society of Management Accountants of Canada (CMA)
  - Canadian Institute of Financial Planning
  - The Payroll Association of Canada
Business Administration (General)

The successful business administrator must be an effective leader, communicator and problem solver; one who can integrate rapidly emerging technology with diverse business functions such as accounting, marketing, and human resource management.

Students in the Business Administration (General) program will develop interpersonal and organizational skills. They will use the latest computer technology in business decision making and learn practical skills which will help them to be productive members of the workforce. Graduates can expect to build on this solid base during their entire business career.

Note: Year 1 courses can be completed at campuses that offer the Business Administration certificate program.

OBJECTIVES
1. Demonstrate the ability to effectively engage in research and information gathering processes.
2. Integrate general knowledge of accounting, human resources, and marketing, for application in a business environment.
3. Apply entrepreneurship skills for use in small to medium sized business environment.
4. Demonstrate application of the Conference Board of Canada employability skills.

CAREER OPPORTUNITIES
Graduates may find entry level job opportunities in a wide spectrum of organizations such as public institutions, small and/or large businesses, and financial institutions.

ACCREDITATION
Business Administration (General) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

PROGRAM TRANSFERABILTY
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Year 1 courses can be completed at campuses offering the Business Administration certificate program.

Semester 4

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DIPLOMA

• Two years
• September start
• Bay St. George, Burin, Carbonear, Clarenville, Grand Falls-Windsor and Prince Philip Drive Campuses and through Distributed Learning (DL)

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Semester 6 (Intersession II) | Title | Cr | Le | La |
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CAREER OPPORTUNITIES

Graduates may obtain employment in a variety of areas such as private businesses, consulting agencies, associations, unions, federal/provincial/municipal governments.

The following is a brief list of the positions that graduates may occupy after successful completion of the program: recruitment/selection officer, personnel officer, training and development officer; compensation/benefits specialist, sexual harassment officer, employee assistance coordinator, labour relations officer, professional development officer, human resource officer, personnel manager, manager of human resources, classification officer.

BUSINESS

Business Administration (Human Resource Management)

The Business Administration (Human Resource Management) program has been designed to provide students with insight into the theory and practice of effective Human Resource Management. In today’s competitive business environment, managers recognize the importance of their human resources to the success of their organization.

The program is designed to provide students with an opportunity to pursue a career in Human Resource Management, Industrial/Labour Relations, Supervision and General Management.

Note: Year 2 of the Business Administration (Human Resource Management) and the Business Management (Human Resource Management) programs is common.

OBJECTIVES

1. Examine and critique the key fundamentals of strategic human resource management and the employment related legislation (regulations and acts).
2. Propose and apply various human resource practices to effectively manage an organization’s human resources.
3. Demonstrate effective research, negotiation, conflict resolution, and leadership skills for use in the business environment.
4. Demonstrate application of the Conference Board of Canada employability skills.

Graduates of the Business Administration/Management programs may have the opportunity to transfer credits to institutions/associations such as:

• Memorial University of Newfoundland
• Cape Breton University, Sydney, Nova Scotia
• Athabasca University, Alberta
• Lakehead College, Alberta
• University of Lethbridge, Alberta
• Lakehead University, Ontario
• University of New Brunswick, Saint John campus
• Okanagan College, British Columbia
• Northwood University, Michigan, USA

Graduates may also wish to further their studies to achieve professional designations with:

• Canadian Institute of Financial Planning
• Canadian Professional Sales Association
• Canadian Public Relations Society
• International Personnel Management Association (IPMA) – Canada
• Certified General Accountants of Canada (CGA)
• The Society of Management Accountants of Canada (CMA)
• The Payroll Association of Canada

ACCRREDITATION

Business Administration (Human Resource Management) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

PROGRAM TRANSFERABILITY

The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

Year 1: The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

Year 2: Students select one area of specialization for the second year from the following options: Accounting, General, Human Resource Management, and Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3: The third-year options are Accounting, Human Resource Management, and Marketing. Students may graduate with a Business Management Diploma at the end of Year 3.
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The Course and Lab hours per week are based on a 15 week semester. The course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

### Year 1 courses can be completed at campuses offering the Business Administration certificate program.

#### Semester 4
- CA1230 Report Writing: 2 Cr, 2 Le, 0 La
- EC1110 Microeconomics: 4 Cr, 4 Le, 0 La
- MA1570 Statistics: 4 Cr, 4 Le, 0 La
- MR1150 Consumer Behaviour: 3 Cr, 3 Le, 0 La
- MR1160 Professional Selling: 4 Cr, 3 Le, 2 La
- MR2100 Business Research: 4 Cr, 3 Le, 2 La
- Elective (minimum 3 credits): 3 Cr, 3 Le, 0 La

#### Semester 5
- EC1130 Macroeconomics: 4 Cr, 4 Le, 0 La
- EP2150 Entrepreneurship: 3 Cr, 3 Le, 0 La
- MR2200 Retailing: 3 Cr, 2 Le, 3 La
- MR2250 E-Business: 4 Cr, 3 Le, 2 La
- MR2400 Marketing Communications: 4 Cr, 3 Le, 2 La
- PR2170 Project Management: 2 Cr, 2 Le, 1 La
- SD2350 Student, Career & Portfolio Development III: 2 Cr, 2 Le, 0 La

#### Semester 6
- OJ1560 Work Exposure (Marketing): 6 Cr, 6 Le, 0 La

### BUSINESS

### Business Administration (Marketing)

The two-year program leading to a Diploma in Business Administration (Marketing) is designed to give students a broad background in business management with emphasis on the area of marketing. Graduates find employment in marketing, sales, retailing, administration, advertising, and general management.

**Note:** Year 2 of the Business Administration (Marketing) and the Business Management (Marketing) programs is common.

### OBJECTIVES

1. Analyze the marketing environment and develop, implement, and monitor a comprehensive marketing strategy.
2. Critically analyze and provide business solutions to marketing product, price, promotion, and distribution decisions.
3. Integrate ethical marketing strategies and tactics for application in both domestic and global marketing environments.
4. Create materials for use with a marketing strategy.
5. Demonstrate application of the Conference Board of Canada employability skills.

### CAREER OPPORTUNITIES

Graduates of this program may obtain employment in a variety of marketing areas such as distribution, media, advertising, retailing, and personal selling in a variety of industries and associations.

### ACCREDITATION

Business Administration (Marketing) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

### PROGRAM TRANSFERABILITY

The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

**Year 1:** The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

**Year 2:** Students select one area of specialization for the second year from the following options: Accounting, General, Human Resource Management, and Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Graduates of the Business Administration/Management programs may have the opportunity to transfer credits to institutions/associations such as:

- Memorial University of Newfoundland
- Cape Breton University, Sydney, Nova Scotia
- Athabasca University, Alberta
- Lakehead College, Alberta
- University of Lethbridge, Alberta
- Lakehead University, Ontario
- University of New Brunswick, Saint John campus
- Okanagan College, British Columbia
- Northwood University, Michigan, USA

Graduates may also wish to further their studies to achieve professional designations with:

- Canadian Institute of Financial Planning
- Canadian Professional Sales Association
- Canadian Public Relations Society
- International Personnel Management Association - Canada
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada
Diploma

- Three years
- September start
- Grand Falls-Windsor and Prince Philip Drive Campuses

COURSES

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Semester 1

Semester 2

AC2260   | Financial Accounting II                     | 5  | 4  | 3  |
CM1241   | Business Communications II                   | 4  | 4  | 0  |
HN1240   | Human Resource Management II                  | 3  | 3  | 1  |
HN2250   | Business Law                                 | 3  | 3  | 2  |
MA2400   | Mathematics of Finance II                     | 3  | 3  | 1  |
MR2100   | Marketing II                                 | 4  | 4  | 0  |
SD1341   | Student, Career & Portfolio Development II   | 1  | 1  | 0  |

Semester 3 (Intersession)

AC2230   | Computerized Accounting I                    | 3  | 2  | 3  |
CM2200   | Oral Communications                          | 2  | 2  | 0  |
MC1241   | Computer Applications II                      | 3  | 2  | 3  |

The course and lab hours per week are based on a 15 week semester. In intersession, the course and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Year 1 courses can be completed at campuses offering the Business Administration certificate program.

Semester 4

AC2220   | Intermediate Financial Accounting I          | 5  | 3  | 5  |
AC2250   | Managerial Accounting I                       | 4  | 3  | 2  |
AC2231   | Computerized Accounting II                    | 3  | 2  | 2  |
CM2300   | Report Writing                               | 2  | 2  | 0  |
EC1710   | Microeconomics                               | 4  | 4  | 0  |
MA1670   | Statistics                                   | 4  | 4  | 1  |

Semester 5

AC1350   | Income Tax                                   | 4  | 3  | 2  |
AC2220   | Intermediate Financial Accounting II          | 5  | 3  | 5  |
AC2250   | Managerial Accounting II                      | 4  | 3  | 2  |
AC2360   | Principles of Internal Auditing              | 3  | 2  | 2  |
EP2150   | Entrepreneurship                             | 3  | 3  | 0  |
SD2360   | Student, Career & Portfolio Development III  | 2  | 2  | 0  |

Semester 6 (Intersession II)

Q1580    | Work Exposure (Accounting)                   | 6 wks |

Year 2 courses can be completed at campuses offering the Business Administration (Accounting) diploma program.

Semester 7

AC2340   | Principles of Auditing                       | 4  | 3  | 3  |
EP2250   | Small Business Development                    | 4  | 3  | 2  |
HN2110   | Business Finance                             | 4  | 3  | 2  |
MN2600   | Strategic Management                          | 3  | 2  | 2  |
P5234    | Organizational Behaviour                      | 4  | 4  | 0  |

Option Course (minimum 3 credits, selected from list below)

Semester 8

AC2351   | Managerial Accounting III                    | 4  | 4  | 1  |
EC2310   | Microeconomics                               | 4  | 4  | 0  |
EP2200   | Business Planning                             | 4  | 2  | 5  |
MA3700   | Production & Operations Management            | 4  | 4  | 1  |
SD2361   | Student, Career & Portfolio Development IV    | 1  | 1  | 0  |

Option Course (minimum 3 credits, selected from list below)

The student is required to complete all of the courses that are listed above.

Options will be selected from the following list by each campus after consultation with the students and/or local industry. Please note that all courses may not be available at each campus.

Option Courses

AC2540   | Oil and Gas Production Accounting             | 4  | 3  | 2  |
HN2111   | Business Finance II                           | 4  | 3  | 2  |
AC2270   | Payroll and Commodity Taxes                   | 4  | 3  | 2  |
HN2200   | Strategic Compensation and Benefits           | 3  | 3  | 1  |
MN1520   | Supervisory Leadership                        | 4  | 4  | 0  |
HN2160   | Investments - An Overview                     | 4  | 4  | 0  |
BK1100   | Banking Operations I                           | 4  | 4  | 0  |

The three-year program leading to a Diploma in Business Management (Accounting) has been developed to achieve competencies required in the field of general financial accounting. Management now requires personnel with skills to provide complex information and to produce comprehensive reports.

Upon completion of this program, students will be capable of performing many accounting functions in small and large businesses and at various levels of government.

OBJECTIVES

1. Prepare and analyze financial statements for internal and external decision making.
2. Use current technology to analyze results and generate appropriate reports.
3. Develop financial budgetary plans based on varying business objectives, changing business environments, and underlying business assumptions.
4. Demonstrate accounting skills needed to secure employment in an entry-level accounting position.
5. Integrate business concepts for effective business planning and strategic management.
6. Demonstrate application of the Conference Board of Canada employability skills.

CAREER OPPORTUNITIES

Graduates may obtain employment in a variety of businesses, organizations and government departments including accountant, comptroller, auditor, business analyst, taxation officer, financial officer, administrative manager, and payroll officer.

ACCREDITATION

Business Management (Accounting) is accredited by the Accreditation Council for Business Schools and Programs (ACSBP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

PROGRAM TRANSFERABILITY

The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

Year 1: The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

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Year 3: The third-year options are Accounting, Human Resource Management, and Marketing. Students may graduate with a Business Management Diploma at the end of Year 3.

Graduates of the Business Administration/Management programs may have the opportunity to transfer credits to institutions/associations such as:

- Memorial University of Newfoundland
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- Lakehead College, Alberta
- University of Lethbridge, Alberta
- Lakehead University, Ontario
- University of New Brunswick, Saint John campus
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Graduates may also wish to further their studies to achieve professional designations with:

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- Canadian Public Relations Society
- International Personnel Management Association (IPMA) - Canada
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada

Encouraged to become members of the following associations:
## Business Management (Human Resource Management)

The Business Management (Human Resource Management) program has been designed to provide students with insight into the theory and practice of effective Human Resource Management. The program seeks to provide the student with a broad understanding of fundamental business principles and practices essential to effective and efficient management.

The Business Management (Human Resource Management) program is designed to provide students with an opportunity to pursue a career in Human Resource Management, Industrial/Labour Relations, Supervision and General Management.

### Objectives

1. Examine and critique the key fundamentals of strategic human resource management and the employment related legislation (regulations and acts).
2. Propose and apply various human resource practices to effectively manage an organization’s human resources.
3. Demonstrate effective research, negotiation, conflict resolution, and leadership skills for use in the business environment.
4. Integrate business concepts for effective business planning and strategic management.
5. Demonstrate application of the Conference Board of Canada employability skills.

### Career Opportunities

Graduates of the program may obtain employment in a variety of areas such as private business, Federal/Provincial/Municipal Government, industry, consulting agencies, institutions, associations, and unions.

The following is a list of positions that graduates may occupy after successful completion of the program: recruitment/selection officer, personnel officer, training and development officer, compensation/benefits specialist, sexual harassment officer, employee assistance coordinator, labour relations officer, professional development officer, human resource officer, personnel manager, manager of human resources, classification officer, and other business related occupations.

### Accreditation

Business Management (Human Resource Management) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

### Program Transferability

The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

**Year 1:** The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

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### Courses

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DIPLOMA
• Three years
• September start
• Grand Falls-Windsor and Prince Philip Drive Campuses

COURSES

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The course and Lab hours per week are based on a 15-week semester. In intersession, the course and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Year 1 courses can be completed at campuses offering the Business Administration certificate program.

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Year 2 courses can be completed at campuses offering the Business Administration (Marketing) diploma program.

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BUSINESS

Business Management (Marketing)

The three-year Business Management (Marketing) diploma program is designed to give students a background in business management with emphasis on the area of Marketing. Students acquire a solid understanding of the practices involved in marketing and promoting a product or service. This includes advertising, market research, professional selling, distribution, business planning, and customer relations.

OBJECTIVES
1. Analyze the marketing environment and develop, implement, and monitor a comprehensive marketing strategy.
2. Critically analyze and provide business solutions to marketing product, price, promotion, and distribution decisions.
3. Integrate ethical marketing strategies and tactics for application in both domestic and global marketing environments.
4. Create materials for use with a marketing strategy.
5. Integrate business concepts for effective business planning and strategic management.
6. Demonstrate application of the Conference Board of Canada employability skills.

CAREER OPPORTUNITIES
Graduates of the program may obtain employment in a variety of marketing areas such as distribution, media, advertising, retailing, and personal selling in a variety of industries and associations.

ACCREDITATION
Business Management (Marketing) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

PROGRAM TRANSFERABILITY
The Business Administration/Management programs offer exit points after Year 1, Year 2, and Year 3.

Year 1: The first year is a common year at the end of which students may graduate with a Business Administration Certificate.

Year 2: Students select one area of specialization for the second year from the following options: Accounting, General, Human Resource Management, and Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3: The third-year options are Accounting, Human Resource Management, and Marketing. Students may graduate with a Business Management Diploma at the end of Year 3.

Graduates may also wish to further their studies to achieve professional designations with:
- Canadian Institute of Financial Planning
- Canadian Professional Sales Association
- Canadian Public Relations Society
- International Personnel Management Association (IPMA) - Canada
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada

Graduates of the Business Administration/Management programs may have the opportunity to transfer credits to institutions/associations such as:
- Memorial University of Newfoundland
- Cape Breton University, Sydney, Nova Scotia
- Athabasca University, Alberta
- Lakehead College, Alberta
- University of Lethbridge, Alberta
- University of New Brunswick, Saint John campus
- Okanagan College, British Columbia
- Lakehead University, Ontario
- Northwood University, Michigan, USA

Graduates may also wish to further their studies to achieve professional designations with:
- Canadian Institute of Financial Planning
- Canadian Professional Sales Association
- Canadian Public Relations Society
- International Personnel Management Association (IPMA) - Canada
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada

CAP"
CERTIFICATE

- One year
- Start date varies: At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- Baie Verte, Bay St. George, Bonavista, Burin, Clarenville, Corner Brook, Grand Falls-Windsor, Labrador West, Port aux Basques, Prince Philip Drive, St. Anthony Campuses, and through Distributed Learning (DL)

BUSINESS
Office Administration

Graduates from the certificate program will acquire knowledge and office skills for entry-level employment in the office of today.

OBJECTIVES
1. Demonstrate a positive attitude in a business environment to help ensure successful integration into the workplace.
2. Independently organize and manage the activities of an administrative workplace environment for effective and efficient performance.
3. Demonstrate effective written and oral communication skills for use in the business environment.
4. Utilize effective interpersonal and teamwork skills to adapt to various business/community working environments.
5. Conduct research, analyze and present relevant data for use in a business environment.
6. Record financial transactions using generally accepted accounting principles for use in a business environment.
7. Utilize and integrate technology to produce business documents at an advanced level using standard document formatting guidelines.

CAREER OPPORTUNITIES
Graduates of the diploma program may expect to find employment opportunities in both the public and private sectors, including all levels of government, legal and medical offices, accounting firms, hospital and education facilities, and general business offices. As well as acquiring skills and knowledge necessary to become effective employees in today’s electronic office, graduates may gain insight into the creation of a small business of their own. Graduates are trained for the following specific positions: administrative assistant, word processing operator, computerized bookkeeping, data processing, legal transcription, medical transcription, microcomputer specialist as well as additional employment opportunities depending on electives selected.

Graduates from the certificate program may obtain employment as an entry-level administrative assistant, office clerk, data entry clerk, or word processing operator.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science Certificate
   (College Transition program)
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY
The Office Administration Program offers exit points after Year 1 and Year 2.
Year 1: The first year is a common year at the end of which students may graduate with an Office Administration Certificate.
Year 2: Students going on to complete the diploma program can select one area of specialization for the second year from the following options: Executive, Legal, Medical, Records and Information Management.

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The Office Administration Program offers exit points after Year 1 and Year 2.
Year 1: The first year is a common year at the end of which students may graduate with an Office Administration Certificate.
Year 2: Students going on to complete the diploma program can select one area of specialization for the second year from the following options: Executive, Legal, Medical, Records and Information Management.
**DIPLOMA**

- **Two years**
- **Start date varies**: At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- **Baie Verte, Bay St. George, Bonavista, Burin, Clarenville, Corner Brook, Grand Falls-Windsor, Happy Valley-Goose Bay, Labrador West, Port aux Basques, Prince Philip Drive, St. Anthony Campuses, and through Distributed Learning (DL)**

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Year 1 courses can be completed at campuses offering the Office Administration certificate program.

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**ENTRANCE REQUIREMENTS**

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation

2. **Comprehensive Arts and Science Certificate** (College Transition program)
   - Adult Basic Education Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)

3. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

**ACCREDITATION**

Office Administration (Executive) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP) in all campus locations. ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.

**BUSINESS**

**Office Administration (Executive)**

This two-year diploma program is designed to enable students to acquire the knowledge and skills needed to work as administrative assistants in today’s modern office.

The major components of the program include document production, transcription, and office management. Related courses include communications, computerized accounting, computer applications, and organizational behaviour.

**ENTRANCE REQUIREMENTS**

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation

2. **Comprehensive Arts and Science Certificate** (College Transition program)
   - Adult Basic Education Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)

3. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

**ACCREDITATION**

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DIPLOMA
• Two years
• September start
• Prince Philip Drive Campus

This two-year diploma program is designed to enable students to become administrative assistants in a legal or general office environment.

The program provides students with extensive knowledge and skills in the formatting and production of legal and general documentation, legal terminology, legal transcription and office management tasks.

Related courses include communications, computerized accounting, organizational behaviour and computerized business applications.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science Certificate
   (College Transition program)
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

ACCREDITATION
Office Administration (Legal) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.
DIPLOMA

- Two years
- September start
- Prince Philip Drive Campus and through Distributed Learning (DL)

COURSES

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Year 1 courses can be completed at campuses offering the Office Administration certificate program.

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Students are required to complete CPR and Red Cross or St. John Ambulance Emergency First Aid in Semester 3 or 4.

This two-year diploma program is designed to enable students to develop the knowledge, skills and abilities needed to be a medical secretary or a medical office assistant.

The major areas of the program include document production, medical transcription, medical terminology and medical office management. Related areas include communications, medical billing, computer applications and biology.

ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
   High School Graduation

2. Comprehensive Arts and Science Certificate
   (College Transition program)

3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)

4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

ACCREDITATION

Office Administration (Medical) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.
DIPLOMA

- Two years
- September start
- Bay St. George & Prince Philip Drive Campuses

COURSES

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Year 1 courses can be completed at campuses offering the Office Administration certificate program.

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This two-year diploma program incorporates a strong emphasis on office management, computer skills, and an intense study of records and information theories and practices. Major areas are Record Management Principles and Procedures, Document Production, and Office Management. Related areas include Communications (oral and written), Organizational Behaviour, and Human Resource Management.

ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science Certificate
   (College Transition program)
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

ACCREDITATION

Office Administration (Records & Information Management) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.
INFORMATION TECHNOLOGY
### COURSES

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### INFORMATION TECHNOLOGY

#### Computer Systems and Networking

The Computer Systems and Networking two-year program focuses on the skills, competencies and attitudes required to research, design, install and maintain computer systems and network infrastructure in a highly available and secure computing environment. The program combines theoretical and practical learning experiences in a team-oriented setting encompassing front-line computer systems, backend server environments and the local and wide-area network infrastructure.

The program includes course work, team-oriented projects, and a final 15-week work term focusing on areas of technical learning, team building, communications, interpersonal skills, ethics, and best practices. This diversity provides opportunities for the student to acquire the skills, professionalism and adaptability required to succeed in the dynamic and challenging field of Information Technology infrastructure support.

The student will create and maintain a career plan and learning portfolio throughout the program to provide the opportunity to continually assess skill development and create/adapt career plans that set personal expectations and professional goals.

The capstone project will enable the student to demonstrate the application of knowledge and skills developed throughout the program by performing an in-depth study of a problem, design, or technological application and fully documenting and presenting the findings.

#### OBJECTIVES

The aim of the Computer Systems and Networking program is to graduate a student with:

1. the theoretical and practical skills in information technology infrastructure support. This will enable her/him to:
   - provide computer technical assistance, support, and advice to customers and other users
   - install, modify and repair computer hardware and software
   - support local-area networks (LAN), wide-area networks (WAN), network segments, and Internet and intranet systems
   - design an organization’s computer system in which all of the components including computers, the network, and software, work properly together
   - plan, coordinate, and implement the organization’s information security policy
2. the skills required to interpret and effectively apply industry procedures and policies in the workplace
3. the social, interpersonal and communication skills necessary to be a productive member of a team in a software development environment
4. the self-awareness and reflective skills required to create, evaluate and modify personal growth and career plans

#### EMPLOYMENT OPPORTUNITIES

Given the presence of computer systems and networks in all industries, Computer Systems and Networking graduates may find employment in both the private and public sectors.

Graduates of the program will be able to fill roles in industry such as:

- Computer Support Specialist
- Network Specialist

#### ENTRANCE REQUIREMENTS

Eligibility for admission to Computer Systems and Networking program requires the applicant to meet one of the following four academic criteria:

1. **High School**
   - Provincial High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     - i. English 3201 or English 3202 (60% minimum)
     - ii. Mathematics (4 credits) chosen from: Advanced: 2205, 3205 (50% minimum in each course)
     - Academic: 2204 (50% minimum), 3204 (60% minimum)
   - iii. 5 credits from 3000 Level

2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate with the following courses:
     - i. Math Fundamentals: MA1040, MA1041

3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
     - i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   - Applicants with Adult Basic Education (Level III) Graduation with a different profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. **Mature Student Status**

Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

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79
**POST DIPLOMA**

- One year
- September start
- Through Distributed Learning (DL)

**COURSES**

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**Semester 2**

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**Semester 3**

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</table>

The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

The Information Management professional organizes and manages all activities involved in the information life cycle. This program is designed to provide students with the knowledge, skills and attitudes needed to function in this role.

The program is designed so that the student gains knowledge and skills in:
- the theory of records and Information Management (IM)
- the operation of IT infrastructure and its relation to IM
- information security and its relation to IM
- the legal environment that impacts IM
- project management
- analysis and design
- educational workshop design and delivery

The student will complete a capstone project where she/he will apply her/his knowledge and skills to analyze and design a solution to an IM problem. There is an emphasis on effective communication and interpersonal skills throughout the curricula.

**OBJECTIVES**

The objective of the Information Management program is to develop graduates with the ability to:

1. organize and manage all activities involved in the record life cycle
2. efficiently gather and analyze data required to inform the information management processes of an organization
3. conduct themselves professionally in a business environment
4. participate as a member of a team involved in information management policy development and implementation
5. advocate the importance of and advise on Information Management policies and procedures throughout the organization through education, training and consultation
6. utilize and integrate technology to manage enterprise records and content at an advanced level conforming to the Information Management policies

**ACADEMIC ADVISING**

Each student will be assigned an academic advisor to help guide you through the college experience. He or she is trained to advise you on college-related issues or to make mutually agreed upon referrals for you to other college professionals.

Students intending to complete the program on a part-time basis (less than four courses per semester) will be contacted by her/his advisor to create an academic plan that will enable them to complete the program. A part-time student must complete the program within five years from the date of program enrolment.

**EMPLOYMENT OPPORTUNITIES**

Graduates of the Information Management program can expect to find employment as Information Management Analysts, Records Analysts, and Records Management Consultants in industries such as oil & gas, healthcare and in government agencies.

Due to the nature of this field, employers may require a clear Certificate of Conduct from the Royal Newfoundland Constabulary (RNC), the Royal Canadian Mounted Police (RCMP) or local provincial/municipal police force prior to hiring.

**ENTRANCE REQUIREMENTS**

Graduation from a recognized two or three year post-secondary diploma or degree, or a combination of other postsecondary work and industry experience acceptable to the College.
Programmer Analyst (Business) Co-op is a three-year program which trains the student to work effectively as a team member in a wide variety of business application development environments. This is a co-operative education program that offers the student work term placements in May of the first academic year, in January of the second academic year and in September of the third academic year. Each work term placement affords the student 12 to 16 weeks of workplace experience, for a total of 36 to 48 weeks during the three-year program.

The program’s main emphasis is on the design and development of a variety of business-oriented applications using the most recent versions of widely used computer programming languages. Emphasis is on database design and programming, the traditional and object-oriented system development life cycles, web-based programming. As well, ethics, best practices, team building, communications and interpersonal skills are developed throughout the program via coursework and participation on project teams.

The student is required to create a career plan and learn portfolio throughout the life of the program. The student will be given opportunities to assess skills, create/modify career plans and to reflect on her/his progress. The student must complete a comprehensive project in the final semester thereby consolidating all of the skills and knowledge acquired throughout the program.

The combination of coursework and work term experience provides the student with a skill set that will prepare her/him for an entry-level business programming position. With relevant work experience, the student should be able to follow the career progression to Programmer Analyst and eventually to Systems Analyst.

OBJECTIVES
The aim of the Programmer Analyst (Business) Co-op program is to graduate a student with:

1. the theoretical knowledge and practical programming skills enabling her/him to function as an entry-level programmer in an object-oriented, database-oriented business programming environment.
2. the skills required to interpret and effectively apply industry procedures and policies in the workplace.
3. the social, interpersonal and communication skills necessary to be a productive member of a team in a software development environment.
4. the self-awareness and reflective skills to create, evaluate and modify personal growth, learning plans and career plans.

ACCREDITATION
The Programmer Analyst (Business) Co-op program has been accredited by the Canadian Information Processing Society (CIPS) until 2013. The Co-op delivery method of the program has been accredited by the Canadian Association for Co-operative Education (CACE) until 2015.

EMPLOYMENT OPPORTUNITIES
Graduates of the Programmer Analyst (Business) Co-op program may find employment in computer-related industries, such as: provincial and federal government departments, as well as small, medium and large corporations. Typical activities may include computer programming, database design and development, and web page and web component implementation.

ENTRANCE REQUIREMENTS
Eligibility for admission to Programmer Analyst (Business) Co-op program requires the applicant to meet one of the following four academic criteria:

1. High School
   Provincial High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English 3201 or English 3202 (60% minimum)
   ii. Mathematics (4 credits) chosen from:
      Advanced: 2205, 3205 (50% minimum in each course)
      Academic: 2204 (50% minimum), 3204 (60% minimum)

2. Comprehensive Arts and Science (CAS) Transition Certificate or Business Operations in Information Systems Certificate with the following courses:
   i. Math Fundamentals: MA1040, MA1041

3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
   i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   Applicants with Adult Basic Education (Level III) Graduation with a different profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

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Eligibility for admission to Programmer Analyst (Business) Co-op program requires the applicant to meet one of the following four academic criteria:

1. High School
   Provincial High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English 3201 or English 3202 (60% minimum)
   ii. Mathematics (4 credits) chosen from:
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   Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
   i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   Applicants with Adult Basic Education (Level III) Graduation with a different profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
**DIPLOMA**
- Two Years
- September Start
- Corner Brook Campus

**SOFTWARE DEVELOPMENT**

The Software Development two-year program focuses on the competencies required to design, implement and maintain software systems that operate in a secure networked environment containing stationary and mobile devices. The program combines theoretical and practical learning experiences in a team-oriented setting.

The program includes course work, team projects, and a 15-week work term. The program focuses on computer programming, database design and development, systems analysis, team building, communications, interpersonal skills, ethics, and best practices. This diversity provides opportunities for the student to acquire the skills, professionalism and adaptability required to succeed in the dynamic and challenging field of Software Development.

The student will create and maintain a career plan and learning portfolio throughout the program to provide the opportunity to continually assess skill development and create/adapt career plans that set personal expectations and professional goals.

**OBJECTIVES**

The aim of the Software Development program is to graduate a student with the:

1. the knowledge of the fundamental computing skills necessary to work effectively and efficiently in the Information Technology industry
2. the problem solving and programming skills in desktop, enterprise, and internet environments
3. the ability to analyze, write, and maintain secure, customized computer applications based on user requirements
4. effective communication skills, a capacity for leadership, teamwork, quality assurance and cooperation in problem solving
5. the skills required to design and develop database applications

**EMPLOYMENT OPPORTUNITIES**

Software Development graduates may find employment in both the private and public sectors.

Graduates of the program will be able to fill roles in industry such as:
- Software Developer
- Web Developer
- Computer Programmer
- Database Developer

**NOTE:** Some employers may require the graduate to have a Certificate of Conduct from the Royal Newfoundland Constabulary (RNC), the Royal Canadian Mounted Police (RCMP) or local provincial/municipal police force as a condition of employment.

**ENTRANCE REQUIREMENTS**

Eligibility for admission to Software Development program requires the applicant to meet one of the following four academic criteria:

1. **High School**
   - Provincial High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     i. English 3201 or English 3202 (60% minimum)
     ii. Mathematics (4 credits) chosen from:
        Advanced: 2205, 3205 (50% minimum in each course)
        Academic: 2204 (50% minimum), 3204 (60% minimum)
     iii. 5 credits from 3000 Level

2. **Comprehensive Arts and Science (CAS) Transition Certificate** with the following courses:
   - iii. 5 credits from 3000 Level

3. **Adapt Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
     i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   - Applicants with Adult Basic Education (Level III) Graduation with a different profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
The Web Development two-year program provides the student with the competencies required to design, implement and maintain web based applications. The emphasis is on the aesthetic design of client interfaces utilizing Web 2.0 techniques and tools while working in a team-oriented, creative design environment with theoretical and practical learning experiences.

Students will gain knowledge of computer programming, Web design and development, database design and development, systems analysis, interface design, business and business solutions, and personal and career development. This diversity provides opportunities for the student to acquire the skills, professionalism and adaptability required to succeed in the dynamic and challenging field of Web Development.

The student will create and maintain a career plan and learning portfolio throughout the program to provide the opportunity to continually assess skill development and create/adapt career plans that set personal expectations and professional goals.

The website project courses will enable the student to demonstrate the application of knowledge and skills developed throughout the program by performing an in-depth analysis of a client’s needs; designing a website that meets the client’s needs; creating web pages, graphics and software to support the design; implementing software to support the website; documenting the solution; and presenting the solution to team members and the client.

OBJECTIVES
The aim of the Web Development program is to graduate a student with the:
1. the knowledge of the fundamental computing skills necessary to work effectively and efficiently in the Information Technology industry
2. the problem solving, design and programming skills to create web sites that utilize the features of Web 2.0
3. the ability to analyze, design, implement and maintain secure web sites based on user requirements
4. effective communication skills, a capacity for leadership, teamwork, quality assurance and cooperation in problem solving
5. the skills required to design and develop content-driven interactive Web sites

EMPLOYMENT OPPORTUNITIES
Web Development graduates may find employment in both the private and public sectors in small, medium and large businesses. Graduates of the program will be able to fill roles in industry such as:
• Web Designer
• Web Developer
• Website Administrator/Developer

ENTRANCE REQUIREMENTS
Academic
Eligibility for admission to the Web Development program requires the applicant to meet one of the following four academic criteria:
1. High School
   Provincial High School Graduation Certificate with 60% overall average in the following (or equivalent):
   i. English 3201 or English 3202 (60% minimum)
   ii. Mathematics (4 credits) chosen from:
      Advanced: 2205, 3205 (50% minimum in each course)
      Academic: 2204 (50% minimum), 3204 (60% minimum)
   iii. 5 credits from 3000 Level
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate with the following courses:
   i. Math Fundamentals: MA1040, MA1041
3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
   i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   Applicants with Adult Basic Education (Level III) Graduation with a different Profile may be eligible for admission to the program provided the appropriate selection of courses including those outline above have been completed.
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

DIPLOMA
• Two years
• September start
• Through Distributed Learning

COURSES

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<td>Software Development with ASP.NET</td>
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The Course and Lab hours per week are based on a 15 week semester. The Course and Lab hours will be adjusted to reflect the shorter semester length.

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<td>Object-Oriented Programming in Java</td>
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ENGLISH TECHNOLOGY

Engineering Technology (First Year)

SELECTION PROCESS
The college offers a common first year in the Engineering Technology programs. This initiative allows learners to attend the first two semesters of an engineering technology program at the campus nearest their hometown. After completing the first two semesters, learners then enter the campus which offers the program of their choice to complete the seven-week Intersession (May/June), and the subsequent years of their program.

Individuals must submit their application to the campus where they intend to complete the first two semesters of their program. This begins a first step, first served provincial process which reserves a seat at the designated campus for the appropriate Intersession, and subsequent years of program study.

After successful completion of the first two semesters, learners progress to the Intersession in the program for which a seat has already been reserved. Any learner who, after registration, wishes to change his/her original program choice MUST apply for a Program Transfer (see below).

TRANSFER PROCESS
If a learner wishes to change his/her original program choice, he/she MUST request a program transfer and complete the appropriate form (Request to Transfer Form) which is available through the Registrar’s Office.

Applicants cannot request a change in program prior to entry into the first year. A request to transfer does not guarantee entry into one’s alternate, “new” program choice. Program transfer will be granted only if sufficient space is available. The following conditions apply:

1. The Request to Transfer Form must be received at the Registrar’s Office by February 15.

2. Transfers are granted based on 1) space availability and 2) the learner’s weighted average at the end of semester one. In cases where the learner has been exempted from courses in the first semester, the mark(s) obtained by the learner at another campus program administrators.

3. The college offers a common first year in the Engineering Technology programs (on a course by course basis). Every effort has been made to ensure that the maximum numbers of transfer credits are attainable by articulating new and revised courses for common curriculum areas.

TRANSFERABILITY
Currently there are a number of agreements in place with other colleges and universities where learners can obtain advanced standing into Engineering and Bachelor of Technology Programs.

- Memorial University – Bachelor of Technology
- Lakehead University – Bachelor of Engineering
- Memorial University – Bachelor of Engineering
- Cape Breton University – Bachelor of Technology
- Athabasca University – Bachelor of Science (Post Diploma)
- Indiana University Purdue University at Indianapolis – Bachelor and Master of Science
- Camosun College - Engineering Bridge Programs
- University of Victoria - Bachelor of Engineering
- University of British Columbia – Bachelor of Engineering
- College of the North Atlantic – Other engineering technology programs (on a course by course basis).

Every effort has been made to ensure that the maximum numbers of transfer credits are attainable by articulating new and revised courses for common curriculum areas.

Note: Transfer and articulation agreements with other post-secondary institutes are continuing to evolve. To find out about the latest educational opportunities, please contact the Registrar’s Office or any of the campus program administrators.
ENGGINEERING TECHNOLOGY

Architectural Engineering Technology

Buildings are an exciting and vital part of our physical environment. Not only must they provide shelter, but they must do it in a way which provides safe, healthy, and comfortable environments which can be built and operated within given cost guidelines. To achieve these goals buildings have become complex structures requiring teams of specialists. An important member of the design and construction team is the Architectural Engineering Technologist.

The Architectural Engineering Technology Program has been developed in response to provincial needs with input from professionals associated with the design and construction of buildings. Projects and assignments are designed to be as close as possible to the type of work graduates will encounter when entering the workforce.

Every effort is made to expose the learner to the latest technology. Computers are used as a tool in problem solving in many technical courses. Microcomputers, computer-aided drafting (CAD) equipment, and a variety of architectural and engineering software packages are made available to learners to carry out their projects and assignments.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

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Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

ACCREDITATION
This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES
As an architectural engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Prepare complete sets of architectural drawings and related documentation for residential and commercial construction/renovation projects.
2. Have a complete understanding of the basic architectural principles in building design and detailing.
3. Apply the principles of building science and construction engineering to analyze and solve technical problems for construction projects.
4. Understand the relationship between architectural, structural, mechanical, electrical, and environmental building systems.
5. Apply the principles of project management to planning, scheduling, and monitoring of project development.
6. Communicate effectively with clients, contractors, other building professionals and municipal authorities during the design and construction of the building project.
7. Apply knowledge of applicable codes, zoning bylaws, and regulations to the building project.

CURRICULUM
General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrical and Magnetic Theory, Engineering Graphics, Engineering Technology Awareness.

Specific education in various aspects (theory and principles) of the Architectural Engineering Technologist profession including building services, site supervision, project management and construction management.

Practical education in various aspects of working drawings, architectural utility systems, and architectural graphics layouts.

CAREER OPPORTUNITIES
The need is growing for people trained in building technology. Graduates may find employment in a variety of areas such as architectural firms, engineering firms, government departments, crown corporations, construction firms, manufacturing industries, and supply and sales companies.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

DIPLOMA
• Three years
• September start
• Ridge Road Campus (St. John’s)

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DIPLOMA
- September start
- Three years
- Ridge Road Campus (St. John’s)

ENGGINEERING TECHNOLOGY
Chemical Process Engineering Technology (Co-op)

Chemical Process Engineering Technologists play a vital role in the monitoring, operation, control and maintenance of equipment in a variety of industries including oil & gas. The program equips graduates with both the knowledge and practical skills necessary to begin their career as competent process operators, chemical engineering technologists and power engineers.

The program covers safe practices, process operations, chemical engineering principles and regulatory processes, process stream analysis, instrumentation and process control. Learners will also acquire valuable work experience through the completion of two co-op work terms.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

ACCREDITATION
College of the North Atlantic will seek accreditation for this program from the Canadian Technology Accreditation Board (CTAB) of the Canadian Council of Technicians and Technologists (CCTT).

OBJECTIVES
As a chemical process engineering technologist, the graduate will have the knowledge and skills that will allow him/her to:

1. Assist in safe and efficient design, operation, troubleshooting, and maintenance of chemical process equipment.
3. Establish and maintain a safe work environment by following and enforcing safety standards and procedures and adhering to established standards, practices, and procedures.
4. Work with other technologists, engineers and skilled trades persons to develop innovative solutions to problems in chemical process industries.
5. Work and communicate as members of a team with other professionals, as well as supervise the work of skilled professionals and trades persons in a variety of chemical processes and procedures.

CURRICULUM
General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrical and Magnetic Theory, Engineering Graphics, Engineering Technology Awareness.

Specific education in various aspects (theory and principles) of the chemical process control discipline including industrial chemistry, fluid mechanics, and power plant systems.

This program is currently under review and is subject to change.
DIPLOMA
- Three years
- September start
- Corner Brook and Ridge Road (St. John’s) Campuses

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The Course and Lab hours per week are based on a 15 week semester. The Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

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The Course and Lab hours per week are based on a 15 week semester. The Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Civil Engineering Technology Camp

Learners in Civil Engineering Technology (Co-op) will be required to complete FT1340 during Semester 6 prior to beginning their work term.

Safety Certification

Learners in Civil Engineering Technology (Co-op) will be required to complete certifications in the following training: Standard First Aid/Heart Start and WHMIS during the second year of studies.

Semester 7 (Fall)

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The field of civil design and construction plays a central role in the economic viability of many industries and the province as a whole. The civil field includes such areas as residential, commercial, and industrial buildings; harbours, airports, roads, and other transportation facilities; and municipal infrastructure.

Natural resource development projects (hydropower, oil and gas, mineral processing, etc.) will continue to create substantial employment opportunities for Civil Engineering Technology (Co-op) graduates.

The Civil Engineering Technology (Co-op) program will enable graduates to play an important role in the professional team which is responsible for the translation of ideas into the finished product. The program will ensure that the graduates understand the need for, and have the skills to contribute to, the cost effective and efficient planning of construction projects from concept to completion.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

ACCREDITATION

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES

The main objective of the program is to produce graduates who can function in the Civil Engineering environment at the technologist level. Some of the tasks which a graduate will be able to perform are:

1. Analyze the structural reactions of engineering work.
2. Participate in the scheduling of civil engineering projects and monitor the work.
3. Assist in planning, designing, inspecting, supervising, and constructing civil engineering projects.
4. Plan and design municipal infrastructure projects.

5. Assist with designing, inspecting and troubleshooting of transportation infrastructure.
6. Design, calculate and test asphalt and concrete mixes to industry standards and specifications.
7. Carry out engineering survey and construction layouts using conventional survey instruments, GIS, and GPS systems.

CURRICULUM

General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrical and Magnetic Theory, Engineering Graphics, Engineering Technology Awareness.

Specific education in various aspects (theory and principles) of the civil discipline including strength of materials, structures, fluid mechanics, soils & foundations, building codes & services and planning & estimating.

Practical education in various aspects of the civil discipline including CADD drawings, material testing, highway technology, and construction surveying.

Work exposure consisting of field experience, gained from a compensated work term, in the field of civil engineering technology.

CAREER OPPORTUNITIES

The learner, upon graduation, may find employment with contractors, consultants, house builders, manufacturers, suppliers, municipalities, provincial and federal governments and their agencies, and many others involved in such projects as the design of offshore and onshore structures and facilities, testing and inspection of structural components, estimation, sales, construction surveying, and project management.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

Note: Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
DIPLOMA
- Three years Co-op
- September start
- Ridge Road Campus (St. John’s)

**COURSES**

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

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<td>MS Office Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>MA3530</td>
<td>Statistics</td>
<td>2</td>
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</tbody>
</table>

**Semester 5 (Winter)**

<table>
<thead>
<tr>
<th>Cr</th>
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<th>La</th>
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</thead>
<tbody>
<tr>
<td>CM2800</td>
<td>Oral/Written Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>CE1210</td>
<td>Basic Communications Networks I</td>
<td>4</td>
</tr>
<tr>
<td>CP2530</td>
<td>Data Structures &amp; Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>DP2120</td>
<td>Digital Systems II (Interfacing)</td>
<td>5</td>
</tr>
<tr>
<td>CT2530</td>
<td>MS Office Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>MA3530</td>
<td>Statistics</td>
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**Semester 6 (Spring)**

<table>
<thead>
<tr>
<th>Cr</th>
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<tbody>
<tr>
<td>CE3430</td>
<td>Network Cabling</td>
<td>4</td>
</tr>
<tr>
<td>(3 week block delivery)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AE4330</td>
<td>Active Circuit Applications</td>
<td>4</td>
</tr>
<tr>
<td>CE3370</td>
<td>Switching &amp; L2 Security</td>
<td>4</td>
</tr>
<tr>
<td>CP1490</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CP3520</td>
<td>Databases</td>
<td>4</td>
</tr>
<tr>
<td>PR3150</td>
<td>Project Management and Financial Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PR2760</td>
<td>Capstone Project I (Seminar)</td>
<td>P/F</td>
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**Semester 7 (Fall)**

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<tbody>
<tr>
<td>AE5330</td>
<td>Active Circuit Applications</td>
<td>4</td>
</tr>
<tr>
<td>CE5370</td>
<td>Switching &amp; L2 Security</td>
<td>4</td>
</tr>
<tr>
<td>CP5490</td>
<td>Software Engineering</td>
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<tr>
<td>CP5520</td>
<td>Databases</td>
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<tr>
<td>PR5150</td>
<td>Project Management and Financial Analysis</td>
<td>4</td>
</tr>
<tr>
<td>PR2760</td>
<td>Capstone Project I (Seminar)</td>
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</table>

**Semester 8 (Winter)**

<table>
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<tr>
<th>Cr</th>
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<tbody>
<tr>
<td>WC1700</td>
<td>Work Term I</td>
<td>5</td>
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<tr>
<td>(12 weeks minimum)</td>
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<tr>
<td>WC1701</td>
<td>Work Term II</td>
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**Semester 9 (Spring)**

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<th>Cr</th>
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</thead>
<tbody>
<tr>
<td>GE3380</td>
<td>IP Routing, IPv6 &amp; Security</td>
<td>4</td>
</tr>
<tr>
<td>CP3620</td>
<td>Web Programming</td>
<td>4</td>
</tr>
<tr>
<td>CP3580</td>
<td>Mobile Application Development</td>
<td>4</td>
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<tr>
<td>CP3830</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>DP3200</td>
<td>Embedded Controller Applications</td>
<td>4</td>
</tr>
<tr>
<td>PR2761</td>
<td>Capstone Project II</td>
<td>4</td>
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</table>

The Computing Systems Engineering Technology (Co-op) program prepares learners for the field of scientific and engineering computing. A combination of programming theory and practice, networking, and electronics ensures the graduate will be prepared to work in the emerging fields of cloud computing and mobile device application development such as smart phones and tablets. Graduates will obtain theoretical foundations as well as practical hands on experience with analog electronics, digital systems, including logic, microprocessor interfacing, and embedded microcontrollers and applications. Graduates will work with mobile devices, robotic systems, and wireless control. Specialized skills in the software stream include, but will not be limited to, object-oriented programming, databases, networking, and modern web technologies. Graduates of this three year program receive the Diploma of Computing Systems Engineering Technology (Co-op).

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

Graduates enrolled in this program will also complete courses in the Cisco Networking Academy program which will place them on the path to Cisco certification at the CCNA level.

Note: This program may not be suitable for applicants who do not have normal colour perception.

**ACCREDITATION**

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

**OBJECTIVES**

As engineering technologists, graduates of this program will have the knowledge and skills that will allow them to:

1. Analyze, build, implement, and maintain computing systems and applications.
2. Design, develop, and implement relational database management systems.
3. Develop applications using object-oriented programming methods and practices.
4. Design and develop applications for mobile devices such as smart phones and tablets.
5. Prepare a quality assurance plan for testing and evaluation of software.
6. Design and implement computing systems suitable for cloud computing applications.
7. Specify, select, design, build, and troubleshoot microprocessor or micro-controller based systems.
### DIPLOMA
- Three years
- September start
- Burin Campus

#### COURSES

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs/wk</th>
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<tbody>
<tr>
<td></td>
<td>Semester 1 and 2 - Refer to Engineering Technology (First Year)</td>
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<td></td>
<td>Semester 3 (Intersession)</td>
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<tr>
<td>AE1240</td>
<td>Electronic Devices</td>
<td>5</td>
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<tr>
<td>CI1310</td>
<td>Electrical/Electronic Fabrication Techniques</td>
<td>3 2</td>
</tr>
<tr>
<td>ET2100</td>
<td>Electrical Technology</td>
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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs/wk</th>
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<tbody>
<tr>
<td>CE1210</td>
<td>Basic Communications Networks I</td>
<td>4 3 3</td>
</tr>
<tr>
<td>CI1350</td>
<td>Basic Process Automation</td>
<td>2 1</td>
</tr>
<tr>
<td>CM2000</td>
<td>Oral/Written Communication Skills</td>
<td>3 3 0</td>
</tr>
<tr>
<td>DP1110</td>
<td>Digital Systems I (Logic)</td>
<td>4 3 2</td>
</tr>
<tr>
<td>MA2100</td>
<td>Mathematics</td>
<td>5 5 0</td>
</tr>
<tr>
<td>PE1510</td>
<td>Electrical Rotating Machines</td>
<td>4 3 2</td>
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<table>
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<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>CE1900</td>
<td>Pressure and Level Measurement and Control</td>
<td>4 3 3</td>
</tr>
<tr>
<td>DR2120</td>
<td>Engineering Graphics for Electrical</td>
<td>2 1 2</td>
</tr>
<tr>
<td>MA2101</td>
<td>Mathematics</td>
<td>5 5 0</td>
</tr>
<tr>
<td>PE1511</td>
<td>Electrical Stationary Machines</td>
<td>3 3 1</td>
</tr>
<tr>
<td>XD2300</td>
<td>Electromechanical Motor Controls</td>
<td>4 3 2</td>
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<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs/wk</th>
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<tbody>
<tr>
<td>PR3150</td>
<td>Project Management and Financial Analysis</td>
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<tr>
<td>XD1810</td>
<td>Solid State Motor Controls</td>
<td>4 3 2</td>
</tr>
<tr>
<td>XD2500</td>
<td>Programmable Controllers I</td>
<td>4 3 2</td>
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</table>

The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

<table>
<thead>
<tr>
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<th>Hrs/wk</th>
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</thead>
<tbody>
<tr>
<td>ET2100</td>
<td>Electrotechnology</td>
<td>3 2 2</td>
</tr>
<tr>
<td>FM1200</td>
<td>Fluid Power (Hydraulics/Pneumatics)</td>
<td>3 3 1</td>
</tr>
<tr>
<td>DP2340</td>
<td>Robotics &amp; CAM</td>
<td>4 3 2</td>
</tr>
<tr>
<td>DP3240</td>
<td>DCS Configuration</td>
<td>4 3 2</td>
</tr>
<tr>
<td>MA1530</td>
<td>Statistics</td>
<td>2 2 1</td>
</tr>
<tr>
<td>PR2731</td>
<td>Capstone Project II</td>
<td>4 3 0</td>
</tr>
<tr>
<td>XD1550</td>
<td>Environment &amp; Ethics</td>
<td>2 2 0</td>
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</table>

The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q61420</td>
<td>Work Exposure</td>
<td>3 wks</td>
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</table>

Certifications: In addition to the formal semester courses listed in the program of studies, learners in the Electrical Engineering Technology (Industrial Controls) program may obtain a certificate of completion of Standard First Aid/Heart Start and Workplace Hazardous Materials Information System (WHMIS) over their three-year period of studies.

The three-year Electrical Engineering Technology (Industrial Controls) program specializes in Electrical Industrial Controls. It has been developed in response to provincial and national needs with input from professionals associated with the design, installation, operation and maintenance of industrial control systems.

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### ENGENINEERING TECHNOLOGY

## Electrical Engineering Technology (Industrial Controls)

Industrial control systems are designed to control processes to ensure safe and predictable operation. Control Systems monitor many types of sensors, and based on design parameters, maintain the stability and correct operation of a wide range of industrial processes.

A common first year introduces academic subjects supporting the more technical areas emphasized in the second and third years. Projects and assignments reflect as closely as possible the type of work learners will encounter upon graduation.

Once in the workplace, the graduate Technologist may be responsible for designing, installing, commissioning, maintaining and troubleshooting various industrial automated systems. This may involve motor controls, industrial instrumentation, programmable logic controllers, robotics, and distributed control systems.

Learners have access to the latest technologies and learning experiences in the classrooms and laboratories. Computers provide problem-solving tools in many technical courses and are an essential component in many training applications. Training focuses on theoretical and practical skills in a broad range of industrial applications. Training focuses on theoretical and practical skills in a broad range of industrial control applications; motors, generators, variable speed drives, analog/digital electronic devices, programmable logic controllers, distributed control systems, industrial instrumentation, process control, pneumatic/hydraulic systems, and robotics.

Learners are provided the opportunity to apply the theory in real work applications. Semesters seven and eight include project development and management, followed by a three-week industry work exposure.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with the college of the North Atlantic.

### CAREER OPPORTUNITIES

A graduate of the Electrical Engineering Technology (Industrial Controls) program can find employment in a broad range of industries. Typical industry employment areas include manufacturing and processing, oil and gas exploration/production, oil refining, offshore service supply, utility (power and communications), forestry (paper and wood products), provincial and federal governments, electrical sales and service, shipyards, and consulting engineering companies.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P.Tech) upon completion of a Professional Practice and Ethics Exam.

### OBJECTIVES

As engineering technologists, graduates of this program will have the knowledge and skills that will allow them to:

1. Analyze, configure and assist in the design of computerized industrial control systems (including but not limited to computer aided manufacturing systems, robotic systems, programmable logic controllers and distributed control systems).
2. Analyze, configure and assist in the design of electrical industrial control systems (including but not limited to rotating and stationary machines, power electronics, transformers and power supply systems).
3. Plan, install and commission industrial control systems using project management techniques.
4. Operate, troubleshoot and maintain industrial control systems, instrumentation systems and test equipment.
5. Apply the Canadian Electrical Code, other industry standards, best practices and workplace procedures.

### CURRICULUM

General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrical and Magnetic Theory, Engineering Graphics, Engineering Technology Awareness.

Specific education in various aspects (theory and principles) of the electrical industrial control discipline including computerized and electronic control systems, robotics, instrumentation and electrical machines.

Practical education in various aspects of electrical industrial control applications including planning, analysis, design, installation, configuration, commissioning, operations, testing and maintenance. Work exposure consisting of the development and management of a project followed by a three-week industry work exposure.

### ACCREDITATION

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

Note: This program may not be suitable for applicants who do not have normal colour perception.
DIPLOMA
- Three years
- September start
- Ridge Road Campus (St. John’s)

COURSES

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs/wk</th>
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<tbody>
<tr>
<td></td>
<td>Semester 1 and 2 - Refer to Engineering Technology (First Year)</td>
<td></td>
</tr>
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</table>

Semester 3 (Intersession)  
ET2100 Electrotechnology  3  2  2  
ET2110 Electronic Device  3  2  2  
ET1110 Electrical/Electronic Fabrication Techniques  3  2  2  

The course and Lab hours per week are based on a 15 week semester. In intersession, the course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4 (Fall)  
DR2320 Engineering Graphics for Electrical  2  1  2  
MA2100 Mathematics  5  5  0  
MP2150 AC Circuits  4  3  3  
MP2910 DC Machines  4  3  3  
DP1310 Introduction to Programmable Logic Controllers  4  3  3  
PCE2000 Electrical Practices  2  1  3  

Semester 5 (Winter)  
MA1670 Statistics  4  4  1  
CM2800 Oral/Written Communication Skills  3  3  0  
DP2540 Advanced Programmable Logic Controllers  4  3  3  
MP2350 Transformers  4  3  3  
MP2920 AC Machines  4  3  3  
PCE2501 Electrical Practices  2  1  3  

Semester 6 (Spring)  
AP2230 Power System Harmonics  2  2  1  
AE2260 Electronic Power Devices and Circuits  5  4  2  
MP1700 Control Engineering  2  1  3  
PCE1000 Electrical Practices  3  2  3  
WC1200 Work Term I (minimum 11 weeks)  5  0  0  

The course and Lab hours per week are based on a 15 week semester. The course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Learners in Electrical Engineering Technology (Power and Controls) (Co-op) will be required to complete MP2230, AE2260, MP1700 and PE3100 prior to beginning their work term.

Semester 7 (Fall)  
PCE2560 Technical Thesis I  5  5  0  
MP2525 Emergency Standby Systems and Altemate Energy Sources  3  3  0  
MP3215 Power Systems: Analysis  4  3  3  
MP3310 Motor Control Systems  4  3  3  
CI2170 Instrumentation Controls & Automation  3  2  2  
PCE3101 Electrical Practices (facility Design)  4  3  2  
PCE3150 Project Management and Financial Analysis  4  4  0  

Semester 8 (Winter)  
WC1301 Work Term II  5  0  0  

Semester 9 (Spring)  
PCE2561 Technical Thesis II  5  5  0  
MP3225 Power Systems: Analysis & Operation  4  3  3  
MP3150 Power Devices & Motor Drives  4  3  3  
CI3600 Industrial Process Control  4  3  3  
PCE4110 Electrical Practices (facility Design)  4  3  3  

Certifications: In addition to the formal semester courses listed in the program of studies, learners in the Electrical Engineering Technology (Power & Controls) Co-op program are required to obtain a certificate of completion of Standard First Aid/Heart Start over their three-year period of studies.

ENGGINEERING TECHNOLOGY

Electrical Engineering Technology (Power & Controls) Co-op is a three-year cooperative education program providing a comprehensive coverage of the electrical power discipline with emphasis on power systems, control systems and electrical design. The theoretical aspects of this program are complemented by extensive practical components that allow learners to gain invaluable experience with installation, operation and maintenance practices. This is further supplemented with real-world experience provided by two work terms.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

The theoretical aspects of this program are complemented by extensive practical components that allow learners to gain invaluable experience with installation, operation and maintenance practices. This is further supplemented with real-world experience provided by two work terms.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

The program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

Note: This program may not be suitable for applicants who do not have normal colour perception.

As an electrical engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Analyze and design electrical generation, transmission and distribution systems.
2. Install, operate, troubleshoot and maintain electrical equipment (including, but not limited to, motors, generators, transformers and related control and protection devices) found in utilities and industrial plants.
3. Apply the Canadian Electrical Code and employ specific computer software to plan, design and specify building electrical systems (including, but not limited to, power, lighting, heating, control and protection circuitry).

The program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

CAREER OPPORTUNITIES

A graduate of the Electrical Engineering Technology (Power & Controls) Co-op program can find employment with a wide variety of companies involved in the electrical industry. Typical employers include production plants, oil and gas exploration production companies, refineries, offshore servicing companies, power utilities, pulp and paper mills, electrical sales and service groups, shipyards, provincial and federal government departments and consulting engineering companies.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

Note: Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
The three year Electronics Engineering Technology Program is general in nature to ensure graduates will have access to job opportunities in a variety of areas, including: telecommunications, software programming, networking, computer aided design, industrial instrumentation, and process control.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

Note: This program may not be suitable for applicants who do not have normal colour perception.

The three year Electronics Engineering Technology Program is designed to produce a well rounded graduate who will be capable of working in a variety of electronic related fields. Past graduates have obtained employment in the areas of telecommunications, pulp and paper, computer sales, service and support, provincial agencies, federal agencies, consulting firms, business equipment servicing, school boards, industrial sales, aircraft navigation, R&D and power companies.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist upon completion of their training.

92
DIPLOMA
• Three years
• September start
• Ridge Road Campus (St. John’s)

COURSES

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs/wk</th>
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</thead>
<tbody>
<tr>
<td>AE1200</td>
<td>Electronic Devices</td>
<td>5</td>
</tr>
<tr>
<td>AE1310</td>
<td>Electrical/Electronic Fabrication</td>
<td>3</td>
</tr>
<tr>
<td>ET2100</td>
<td>Electrotechnology</td>
<td>3</td>
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</table>

Semester 3 (Intersession) Cr Le La

The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4 (Fall) Cr Le La

AE2210  Power Control Devices  3  3  0
CE2730  RF Transmission & Antennas  3  3  0
AE2301  Analog Electronics II  4  4  2
CM2300  Report Writing  2  2  0
CT2300  Applied Programming  4  4  2
DP1110  Digital Systems I (Logic)  4  4  2
DR2410  Electronic Computer Aided Design I  2  2  2
MA2100  Mathematics  5  5  0

Semester 5 (Winter) Cr Le La

AE2301  Analog Electronics II  4  4  2
CE2270  Electronic Analog Communication  4  4  2
CE2730  RF Transmission & Antennas  4  4  2
DP2140  Digital/Microprocessors  4  4  2
EC1700  Engineering Economics  2  2  0
MA2101  Mathematics  5  5  0

Semester 6 (Intersession) Cr Le La

AE2210  Power Control Devices  3  3  0
AE2400  Problem Solving/Effective Troubleshooting  1  1  2
CN2200  Oral Communications  2  2  0
DR2411  Electronic Computer Aided Design II  2  2  2

Semester 7 (Fall) Cr Le La

AE2310  Analog Integrated Circuits  4  4  2
BL1300  Anatomy & Physiology  3  3  0
GI5200  Health Care and Safety I  2  2  2
GI3400  Engineering Management  3  3  0
GI3400  Biomedical Instrumentation I  4  4  2
DP3310  Microprocessors Interfacing  4  4  2
PR6210  Technical Thesis  0  0  1

Semester 8 (Winter) Cr Le La

GI6201  Health Care and Safety II  3  3  2
GI2400  Biochemistry  4  4  2
EI3401  Biomedical Instrumentation II  4  4  4
GI3500  Medical Imaging  4  4  2
DP3300  Embedded Controller Applications  4  4  2
PR6211  Technical Thesis  3  3  3

Semester 9 (Intersession) Cr Le La

WT1700  Biomedical Practicum  R/P

Note: The final semester of year 3 is a 7 week work term. The requirements for all Health Boards are not the same. It is standard practice for any government position to provide a letter of conduct from local law enforcement (typically RNC or RCMP). Due to the nature of any work in Health care and its’ inherent risk, it is also required that health vaccination records be updated and any outstanding vaccinations be received prior to commencement of the praction. As well any allergies or sensitivities should be identified at this time. These requirements are initiated and completed during semester 8. (Winter semester, year 3)

This program is currently under review and is subject to change.

ENGINEERING TECHNOLOGY

Electronics Engineering Technology Biomedical

The Electronics Engineering Technology (Biomedical) Program is an option available in the three-year Electronics Engineering Technology Program. The program is designed to provide graduates with the knowledge and ability to ensure medical electronic equipment is performing safely and effectively. The program includes a seven week practicum where the learners will work in hospital-based biomedical departments or medical equipment sales and service companies. Student memberships in the Canadian Medical and Biological Engineering Society (CMBES) as well as the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL) are encouraged. Education and training is provided in the areas of biomedical instrumentation, microprocessor applications in the health care setting, anatomy and physiology, chemistry, biochemistry, health care and safety.

ACCREDITATION

This Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

Note: This program may not be suitable for applicants who do not have normal colour perception.

OBJECTIVES

As an electronics engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Demonstrate an awareness of and concern for patient and staff safety in the health care environment.
2. Apply an engineering systems approach to problem solving with respect to the health care environment, to enable the graduate to readily update their knowledge and skills.
3. Operate proficiently specialized biomedical test instrumentation including patient simulators and analysers, pressure and flow measurement devices and electrical safety analysers.
4. Troubleshoot, maintain, and calibrate complex, electro-medical equipment utilizing industry recognized techniques and protocols
5. Demonstrate proficiency in the safe operation of electro-medical devices including patient care monitoring systems, defibrillators, electrosurgery units, diagnostic medical imaging systems, clinical laboratory instrumentation, dialysis delivery systems, respiratory care devices and other diagnostic, therapeutic and patient care instruments
6. Modify, design, and construct medical electronic devices through the application of electronic and patient data acquisition principles

General education consisting of Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Engineering Graphics, Technology Awareness and Learner Success.

Specific education in the theory and application of analog and digital electronics with a specialized emphasis on Biomedical instruments, equipment and techniques.

Practical education in Health Care environment through curriculum integrated labs.

Work exposure consisting of field experience, gained from the biomedical practicum.

CAREER OPPORTUNITIES

The graduates of this program may enter the workforce in the employment of hospital biomedical engineering departments, with manufacturers and distributors of biomedical instrumentation, as well as independent sales and service organizations.

Employment may include design and development of medical instrumentation, as well as purchase evaluation, acceptance testing, preventive and demand maintenance and operator training.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.
DIPLOMA
- Three years
- September start
- Ridge Road Campus (St. John’s)

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Semester 3 (Intersession) | Cr | Le | La |
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Semester 6 (Spring) | Cr | Le | La |
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Geomatics is the art and science of acquiring, analyzing, presenting, and managing geographical and spatial data. Geomatics includes the traditional surveying and mapping sciences together with new study areas such as Geographical Information Systems (GIS) and the satellite controlled positioning system the Global Positioning Systems (GPS). With the development of off-shore petroleum, management of the fishery, infrastructure and hydro development and the resulting expansion in the construction industry, the need for more and better trained Geomatics/Surveying Engineering Technologists becomes apparent.

The three-year diploma level Geomatics/Surveying Engineering Technology program is a cooperative education program. It is designed to train persons who will become the senior field members of land, hydrographic, geodetic or engineering survey teams or supervisors in digital data management, analysis and presentation.

The study of Geomatics includes such diverse subjects as photogrammetry, cartography, geodesy, astronomy, hydrography, cadastral surveying, digital mapping, and GIS. These subjects are based on a firm foundation in the sciences of mathematics, physics and chemistry. The associated areas of communications, management, and economics are also an integral part of the program.

In addition to theoretical instruction, the learner obtains considerable field and office experience during labs, field camps, and work terms.

ACCRREDITATION

This Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with the University of New Brunswick.

For graduates who desire to further their careers in Geomatics, the University of New Brunswick awards a limited number of credits for this program toward a Bachelor’s Degree in Surveying Engineering.

This program is also CAFEE (Canadian Association for Cooperative Education) accredited.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES

Upon successful completion of the Geomatics/Surveying Engineering Technology program the graduate will be able to:

1. Collect, analyze, manage and distribute of spatial information as per standard industry practices.
2. Apply professional and quality assurance standards to execute Geomatics project activities for delivery in response to the need of the private and public industry.
3. Utilize industry standards and specifications to analyze the positional accuracy of measurement systems in preparing land records and engineering drawings.
4. Utilize an appropriate mastery of the knowledge, techniques, skills, and modern tools of Geomatics.
5. Adapt to the emerging applications and equipment within the Geomatics field.

CURRICULUM

General education consisting of Communications (oral or written), Mathematics, Physics, Chemistry, Electrotechnology, Computers, and Engineering Graphics.

Specific education in all aspects of Geomatics.

Practical education employing extensive field training to provide experience with instrumentation and software, through Surveying Camps and practical lab sessions.

Work exposure consisting of field experience, gained from co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
Industrial Engineering Technology (Co-op)

**OBJECTIVES**

As an industrial engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Analyse industrial operations, using industrial engineering principles, to improve productivity.
2. Optimize process designs that are both safe and productive while ensuring quality standards are met at minimal cost.
3. Employ problem solving and management strategies that are fundamental to success in various industry settings.
4. Create quality assurance / quality control procedures, in an industrial environment, to improve the effectiveness of the business.
5. Formulate efficiency improvement plans using lean manufacturing techniques.

**CURRICULUM**


Specific education in generic engineering technology consisting of computer based analysis and design, materials science, strength of materials, hydraulics and pneumatics, and shop processes.

Practical education employing labs and shops focused on industrial engineering technology such as ergonomics, work measurement, plant layout, facility planning, production planning, and computer integrated manufacturing.

Work exposure consisting of field experience, gained from compensated work terms, in the field of industrial engineering.

**CAREER OPPORTUNITIES**

Graduates of this program may obtain employment in both the service and production sectors. Previous graduates have been successful in obtaining employment with oil and gas servicing, aerospace, fish processing, mining, ship building, manufacturing and health services industries.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

Note: Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
DIPLOMA
- Three years
- September start
- Ridge Road Campus (St. John’s)

COURSES

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CERTIFICATIONS
In addition to the formal semester courses listed in the program of studies, learners in the Instrumentation and Controls Engineering Technology program are required to obtain a certificate of completion of Standard First Aid/Heart Start over their three-year period of studies.

Graduates of the program will receive a “Hazardous Areas Training Certificate.” This certification is industry recognized and is designed for personnel carrying out inspections, installation and maintenance of electrical apparatus in potentially hazardous explosive areas in the onshore and offshore oil and gas industries.

The International Society of Automation (ISA) defines instrumentation as “the art and science of measurement and control”. It involves using and/or working with instruments used to measure, record, and control process variables (such as level, flow, temperature, and pressure). Complex process control and measurement systems are found in the oil and gas industries, chemical processing industry, food processing operations, power generation, and the pulp and paper industry. Control systems are becoming increasingly used in automating industrial processes to improve productivity, conserve energy, and reduce pollution. This has created a strong demand for trained instrumentation professionals. As our provincial industrial sector grows, instrumentation and controls continues to be an extremely important field of technology.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

ACCREDITATION
This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

CAREER OPPORTUNITIES
Instrumentation and Controls Engineering Technologist is a very multifaceted career choice. It prepares graduating learners for opportunities in employment locally and internationally in industries such as oil and gas, chemical processing, pulp and paper, power generation, food processing, and manufacturing. Typical positions for a graduate are instrumentation technologist, technical sales/service representative, consultant, plant maintenance person, testing & commissioning technologist, instrument designer, or control systems technologist.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

OBJECTIVES
As engineering technologists, graduates of this program will have the knowledge and skills that will allow them to:

1. Design, install, troubleshoot and maintain process automation field and control room devices and systems such as distributed control systems (DCS), programmable logic controllers (PLC), and emergency shutdown systems.
2. Design and program control system interfaces, human machine interfaces (HMI) and graphical interfaces.
# Mechanical Engineering Technology

**COURSES**

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<tr>
<td>Automation</td>
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<tr>
<td>CI1211</td>
<td>Instrumentation Controls &amp; Automation</td>
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<tr>
<td>FM2450</td>
<td>OGS Management Systems</td>
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<tr>
<td>SP1200</td>
<td>Machine Shop Practice</td>
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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

**Semester 4 (Fall)**

<table>
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<tr>
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<tr>
<td>GF1100</td>
<td>Materials and Processes</td>
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<tr>
<td>GT3540</td>
<td>Mechanics of Solids</td>
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<td>EC1700</td>
<td>Engineering Economics</td>
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<td>MA2100</td>
<td>Mathematics</td>
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<td>MH2330</td>
<td>Power Plant Components</td>
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<td>SP1700</td>
<td>CNC Machining 1</td>
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<td>TD2100</td>
<td>Thermodynamics</td>
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**Semester 5 (Winter)**

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<tr>
<td>GT1120</td>
<td>Materials and Processes</td>
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<td>FM2100</td>
<td>Fluid Mechanics</td>
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<tr>
<td>FM3100</td>
<td>Fluid Power (Hydraulics/Pneumatics)</td>
<td>3</td>
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<tr>
<td>MA2330</td>
<td>Applied Mathematics</td>
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<tr>
<td>MH2820</td>
<td>Power Plant Systems</td>
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<td>MH2801</td>
<td>HVAC Systems</td>
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<td>SP1400</td>
<td>Facilities Engineering</td>
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**Semester 6 (Intersession)**

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<td>WT1460</td>
<td>Work Placement</td>
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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

**Semester 7 (Fall)**

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<td>E2511</td>
<td>Strength of Materials</td>
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<td>CI1210</td>
<td>Instrumentation Controls &amp; Automation</td>
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<tr>
<td>EM2201</td>
<td>Mechanics (Dynamics)</td>
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<td>MIH401</td>
<td>Refrigeration Systems</td>
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<td>MH3220</td>
<td>Building System Design</td>
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<td>SF2200</td>
<td>Quality Assurance</td>
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**Semester 8 (Winter)**

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<td>CG3400</td>
<td>Engineering Management</td>
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<td>CI1211</td>
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<td>EM3200</td>
<td>Machine Design</td>
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<td>MIH4301</td>
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<td>MIH4510</td>
<td>Prime Movers</td>
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<td>MIH4500</td>
<td>Plant Systems Design</td>
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<td>PR3722</td>
<td>Technical Thesis</td>
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<tr>
<td>TD3100</td>
<td>Applied Thermodynamics (Refrigeration and Air Conditioning)</td>
<td>3</td>
<td>3</td>
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</tbody>
</table>

This program is currently under review and is subject to change.

**OBJECTIVES**

Through this program of study, graduates are equipped with the technical knowledge and “hands-on” skills required for:

1. The design, implementation, implementation, operation, maintenance, and management of power generation systems, Heating Ventilation and Air Conditioning (HVAC) systems, and general mechanical support systems which are required for petroleum production systems, petroleum refineries, processing plants, office buildings and residences.

2. The development of mechanical working drawings and computer based models of mechanical systems using AutoCAD and related engineering analysis software.

**ACREDITATION**

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

**CAREER OPPORTUNITIES**

The broad base of competencies acquired through this program of study prepares graduates for careers in a wide variety of industries including the petroleum sector, mining, electrical power generation, food processing, manufacturing, and engineering consulting.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

**CURRICULUM**

General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Computers, Engineering Graphics, Technology Awareness, and Learner Success.

Specific education consisting of discipline-specific courses such as Mechanics, Strengths, Thermodynamics, Machine Design, Hydraulics and Pneumatics, Economics, Engineering Management, Quality Assurance, Maintenance, Machining Process Controls and Technological Thesis (Design Project).


Work exposure consisting of field experience, gained from a minimum seven week work placement which provides learners the opportunity to gain valuable related work experience.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETNL), as well as any similar association in Canada.

Graduates may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

The program is currently under review and is subject to change.
DIPLOMA
- Three years
- September start
- Ridge Road Campus (St. John’s)

COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Lecture</th>
<th>Lab</th>
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<tr>
<td></td>
<td>CODING/COMPUTER SCIENCE/TELECOMMUNICATIONS</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Computing Fundamentals (with high school credit)</td>
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<tr>
<td></td>
<td>CAREER DEVELOPMENT</td>
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<tr>
<td></td>
<td>english</td>
<td>2</td>
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<tr>
<td></td>
<td>Communication Skills Browning</td>
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<td></td>
<td>English Academic Series</td>
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<tr>
<td></td>
<td>Mathematics</td>
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</tr>
<tr>
<td></td>
<td>Science</td>
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<td></td>
<td>Technical Writing</td>
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</tr>
<tr>
<td></td>
<td>Work Experience</td>
<td>3</td>
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</tbody>
</table>

Mechanical Engineering Technology (Manufacturing) Co-op

Mechanical Engineering Technologists, who complete a studies focus in manufacturing, are proficient in the specification, implementation, operation, maintenance and supervision of manufacturing systems and personnel. These technologists are prepared to assume the role of decision maker early in their careers in both the traditional and advanced manufacturing sectors. The knowledge of core mechanical engineering principles, above average problem-solving ability, and superior “hands-on” skills also make these graduates well suited to employment in related industries.

The course and lab hours per week are based on a 15 week semester. In intersession, the course and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 3 (Intersession) Cr Le La
CG1200 Work Methods and Measurement 4 3 2
EG1520 Engineering Graphics for Mechanical Engineering Technologists 2 1 2
SP1200 Machine Shop Practice 1 0 3
MA1470 Statistics 4 4 1

Semester 4 (Fall) Cr Le La
GF1100 Materials and Processes 3 3 1
CM2800 Oral/Written Communication Skills 3 3 0
GF1540 Mechanics of Solids 3 3 1
SP1450 OWS Management Systems 4 4 0
SP1730 CNC Machining I 3 3 1
SP1830 Metrology and Quality Control 4 3 2
MA2100 Mathematics 5 5 0

Semester 5 (Winter) Cr Le La
CT1240 Instrumentation, Motor Control and Programmable Logic Controllers 3 2 2
GF1120 Materials and Processes 3 3 1
FM1100 Fluid Mechanics 3 1
FM3100 Fluid Power (Hydraulics/Pneumatics) 3 3 1
TD1210 Thermodynamics 3 3 1
SP2160 Quality Control and Reliability 2 1 2
SP1731 CNC Machining II 4 3 2

Semester 6 (Spring) Cr Le La
WC1900 Work Term I 5 0 0

Semester 7 (Fall) Cr Le La
EG2130 Engineering Graphics 3 2 2
UW1500 Law and Ethics 3 3 0
PR6360 Technical Thesis (Seminar) 1
FM1200 Machine Design 3 3 0
DE3430 Computer Integrated Manufacturing 3 3 1
CG1500 CNC Machining II 3 3 1
OR2100 Tool Design I 3 3 1
OR3100 Advanced Processes 3 3 2

Semester 8 (Winter) Cr Le La
WC1901 Work Term II 5 0 0

Semester 9 (Spring) Cr Le La
FM2201 Mechanics (Dynamics) 3 3 1
SP2300 Quality Assurance 3 3 0
PR3150 Project Management and Financial Analysis 4 4 0
PR3724 Technical Thesis 4 1 2
FM2220 Machine Design 3 3 1
SP1400 Facilities Engineering 3 2 2
DR3721 Tool Design II 3 2 2

ACCREDITATION
This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of graduates of accredited programs exist with consulting firms, manufacturing firms, shipbuilding yards, oil & gas servicing industry, food processing plants, research institutions and government departments. Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P.Tech.) upon completion of a Professional Practice and Ethics Exam.

OBJECTIVES

Upon the successful completion of the Mechanical Engineering Technology (Manufacturing) Co-op program the graduate will be able to:

1. Utilize Computer Aided Design and Computer Aided Manufacturing (CAD/CAM) software as per industry standards.
2. Design mechanical components/assemblies and create engineering drawings and specifications through the use of 2D and 3D CAD and Modeling software.

3. Develop electro-pneumatic and other automation systems, through hands-on practical experience with programming and operating Computer Numerical Control (CNC) equipment, Robotics, Programmable Logic Controllers (PLCs).
4. Operate Computer Integrated Manufacturing (CIM) systems drawing on the knowledge learned through core-engineering concepts of materials science, strength of materials, and machine design.
5. Apply quality assurance standards and practical quality control techniques in precision measurement.
6. Manage projects, resources and people in a supervisor role through the use of problem solving and related skills.

CURRICULUM

General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Computers, Engineering Graphics, Technology Awareness, and Learner Success.


Work exposure consisting of field experience, gained from compensated work terms, in the field of manufacturing.

CAREER OPPORTUNITIES

Career opportunities for graduates of this program exist with consulting firms, manufacturing firms, shipbuilding yards, oil & gas servicing industry, food processing plants, research institutions and government departments.

Note: Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
## COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours/Week</th>
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<tbody>
<tr>
<td>Semester 1 and 2 - Refer to Engineering Technology (First Year)</td>
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<tr>
<td>Semester 3 (Intersession)</td>
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<tr>
<td>CH2320 Petroleum Chemistry I</td>
<td>3</td>
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<tr>
<td>EG1520 Engineering Graphics for Mechanical Engineering Technologies</td>
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<td>GE1500 Petroleum Geology I</td>
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<tr>
<td>SF2410 Safety Engineering Technology</td>
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<tr>
<td>The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.</td>
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<tr>
<td>Semester 4 (Fall)</td>
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<tr>
<td>CI2231 Petroleum Chemistry II</td>
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<td>CM2300 Report Writing</td>
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<td>MA2100 Mathematics</td>
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<td>CT2240 Mechanics of Solids</td>
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<td>FM2100 Fluid Mechanics</td>
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<td>QG1501 Petroleum Geology II</td>
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<td>FT1100 Materials and Processes</td>
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<td>Semester 5 (Winter)</td>
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<tr>
<td>MA1670 Statistics</td>
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<td>PK2120 Drilling Technology I</td>
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<td>TQ2100 Thermodynamics</td>
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<td>GE2500 Petroleum Geology III</td>
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<td>PM2500 Facilities Engineering</td>
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<tr>
<td>CI1110 Instrumentation Controls &amp; Automation</td>
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<td>Semester 6 (Spring)</td>
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<td>FT1620 Petroleum Field Camp and Safety</td>
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<td>WT1400 Work Term</td>
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<td>Petroleum Field Camp</td>
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<tr>
<td>Learners in Petroleum Engineering Technology will be required to complete a one week drill camp (FT1620) during semester 6 prior to beginning their work term.</td>
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<tr>
<td>Safety Certifications</td>
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<tr>
<td>Learners in Petroleum Engineering Technology will be required to complete safety certifications in the following training: ACS, First Aid, WHMIS and Transportation of Dangerous Goods (TDG) during the second year of studies.</td>
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<td>Semester 7 (Fall)</td>
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<td>PK2121 Drilling Technology II</td>
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<td>TQ2120 Thermodynamics</td>
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<td>PH1100 Geophysics</td>
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<tr>
<td>PM2220 Petroleum Production I</td>
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<tr>
<td>PM2120 Reservoir I</td>
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<td>EC1700 Engineering Economics</td>
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<td>Semester 8 (Winter)</td>
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<td>PK3272 Technical Thesis</td>
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<td>PK2400 Logging and Formation Evaluation</td>
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<td>PM2221 Petroleum Production II</td>
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<td>PK2301 Reservoir II</td>
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<td>CG4000 Engineering Management</td>
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<tr>
<td>PK3201 Production Logging &amp; Applications</td>
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<td>PK3210 Petroleum Production III</td>
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<tr>
<td>EN1300 Environmental Technology</td>
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</table>

### ACCREDITATION

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The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (ACETNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

### CAREER OPPORTUNITIES

The graduate of this program may obtain employment in all aspects of the petroleum industry. These opportunities include but are not limited to oil and natural gas exploration, production and processing, refining, oil and gas pipeline construction, gas utilities, as well as a variety of related activities associated with refining and transportation.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

### ACCREDITATION

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The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

### OBJECTIVES

As a petroleum engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Construct and interpret maps and sections using surface geology, subsurface (drill hole) geology and geophysical data.
2. Interpret topographic maps & profiles, geologic maps & sections, and seismic data to assist in resource exploration and development.
3. Analyze drill cuttings, drill core, and data from open-hole & cased-hole logging tools in order to evaluate reservoir formations in terms of porosity, permeability, fluid saturation and netpay.
4. Assist in planning, designing, inspecting, supervising, and constructing oil and gas wells.
5. Estimate petroleum reserves and optimize productivity using petroleum engineering principles.
6. Select, operate, troubleshoot and maintain the equipment associated with the separation of the produced gas/oil/water fluids.
ENGINEERING TECHNOLOGY

Process Operations Engineering Technology

The Process Operations Engineering Technology program is designed to train graduates to operate and optimize modern industrial plants and processes. Typically, the graduates will work as process operators, process technologists and supervisors in pulp and paper, mineral processing, and petroleum related industries. They will graduate with the knowledge and skills needed to optimize manufacturing processes, improve product quality, and reduce costs.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with college of the North Atlantic.

ACCREDITATION

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The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES

As a process operations engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Apply process principles, to achieve optimal performance of a wide range of industrial processes with special emphasis on mineral processing, oil & gas and pulp & paper industries
2. Evaluate the process chemistry for various industrial operations
3. Apply the principles of quality and process control for the identification of process problems and mitigation measures
4. Evaluate opportunities to reduce waste and preserve the environment while an appreciation of market forces and cost control
5. Operate various process equipment safely and efficiently
6. Organize the stages involved in problem-solving to achieve team and cooperate objectives within the constraints of scope, time, and cost

CURRICULUM

General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Computers, Engineering Graphics, Technology Awareness, and Learner Success.

Specific education in Process Optimization, Quality Management, and Environmental Abatements. This core curriculum is supported by courses which bring together technological concepts and competencies from the fields of process control, automation, chemical and environmental engineering, mechanical systems, and information technology.

Practical education employing labs and shops focused on manufacturing processes and associated systems.

CAREER OPPORTUNITIES

Career opportunities for graduates of this program exist with pulp and paper companies, mineral processing plants, oil & gas refining, petrochemical plants, and specialty chemical companies. As all process industries have common unit operations, graduates possess the skills required to perform in many other processing facilities other than those identified here.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech).
In the present economic climate, the human and financial costs of workplace accidents have increased to such an extent that they have become a negative factor in economic growth. Progressive companies and organizations are constantly looking for ways in which they can reduce costs and become more competitive. Due to recent changes in the Occupational Health & Safety Act and in the administration of Workers’ Compensation employer assessments, employers are becoming increasingly aware that an opportunity exists for them to significantly improve efficiency and profitability through a reduction of losses due to accidents and occupational disease. Employer due diligence requirements have been considerably expanded with the implementation of these recent legislative changes.

Safety Engineering Technology (Post Diploma) Co-op utilizes a combination of engineering, physical and behavioural sciences to reduce and eliminate losses. The program consists of two academic terms which may be completed either full-time or part-time on a course credit basis. Completion of the Diploma also requires a cooperative education work term during which the learner conducts a comprehensive on-the-job identification, analysis and evaluation of the various stages necessary to initiate or upgrade an existing safety program.

OBJECTIVES
A graduate of the Post Diploma in Safety Engineering Technology (Co-op), the graduate will have the knowledge and skill that will allow him/her to:

1. Understand the methods of recognition, evaluation and control of hazards to people, facilities, equipment and the environment.
2. Develop and implement programs, systems, procedures and techniques to reduce the losses associated with accidents and occupational disease in industry, government and the service sector.
DIPLOMA

• Three years
• September start
• Ridge Road Campus (St. John’s)

COURSES

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4 (Fall) | Cr | Le | La |
| AE2231 | Analog Electronics I | 4 | 3 | 2 |
| CE2280 | Modulation & Encoding | 5 | 4 | 2 |
| DP1110 | Digital Systems I (Logic) | 4 | 3 | 2 |
| MA2100 | Mathematics | 5 | 5 | 0 |
| MP2140 | Circuit Analysis I | 4 | 3 | 2 |

Semester 5 (Winter) | Cr | Le | La |
| AE2231 | Analog Electronics II | 4 | 3 | 2 |
| CM2000 | Oral / Written Communication Skills | 3 | 3 | 0 |
| CE3210 | Basic Communications Networks I | 4 | 3 | 3 |
| DP2110 | Digital Systems II (Interfacing) | 5 | 4 | 3 |
| DR2410 | Electronic Computer Aided Design I | 2 | 1 | 2 |
| ET2150 | Advanced Circuit Analysis | 5 | 5 | 0 |

Semester 6 (Spring) | Cr | Le | La |
| CE3310 | Network Cabling | 4 | 3 | 3 |
| CE3430 | Network Cabling | 4 | 3 | 3 |

The Course and Lab hours per week are based on a 15 week semester. The Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

WT1760 | Work Term I | 5 | 0 | 0 |
| (12 weeks minimum) |

Semester 7 (Fall) | Cr | Le | La |
| AE3130 | Active Circuit Applications | 4 | 3 | 2 |
| CE2730 | RF Transmission & Antennas | 4 | 3 | 2 |
| CE3210 | Carrier Networks | 4 | 3 | 2 |
| CE380 | IP Routing, IPv6 & Security | 4 | 3 | 2 |
| CE370 | Switching & L2 Security | 4 | 3 | 2 |
| PR3150 | Project Management and Financial Analysis | 4 | 4 | 0 |
| PR2690 | Capstone Project I (Seminar) | PPT | 1 | 0 |

Semester 8 (Winter) | Cr | Le | La |
| WT176 | Work Term II | 5 | 0 | 0 |

Semester 9 (Spring) | Cr | Le | La |
| CE3110 | Wireless Communications Systems | 5 | 4 | 3 |
| CE3270 | WAMS & SP Operations | 4 | 3 | 2 |
| CE3650 | Unified Communications | 4 | 3 | 3 |
| DP3200 | Embedded Controller Applications | 4 | 3 | 2 |
| MA1520 | Statistics | 2 | 2 | 1 |
| PR2691 | Capstone Project II | 4 | 3 | 0 |

The Telecommunications Engineering Technology (Co-op) Program is an electronics engineering technology program with a focus on Information and Communications Technology (ICT). The program is designed to provide graduates with the skills and knowledge to work with modern communication systems including mobile voice and data services, service provider Internet services, and wireless and wired systems – including fiber optic principles. Graduates will obtain both theory and practical hands-on experience with embedded microcontrollers and applications including robotic controls, mechanics, and wireless control which are used in a wide variety of devices today. Graduates will have hands on experience in maintaining and aligning communications systems as well as the ability to design systems using established methods. Graduates of this three year program receive the Diploma of Telecommunications Engineering Technology (Co-op).

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

Graduates complete courses in the Cisco Networking Academy program which offers a strong foundation in computer networking skills and knowledge using the industry’s leading equipment provider. These courses prepare the graduates to obtain Cisco’s CCNA and CCNA - Voice certification.

Note: This program may not be suitable for applicants who do not have normal colour perception.

ACCRREDITATION

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES

As engineering technologists, graduates of this program will have the knowledge and skills that will allow them to:

1. Develop a high level of skill in the application of electronics principles.
2. Specify, design, construct, troubleshoot, and characterize modern communication systems.
3. Analyze, troubleshoot and design computer networks for use in the secure transmission of data.
4. Manage telecommunications network systems.
5. Specify, select, design, build, and troubleshoot micro-processor or micro-controller based systems.
6. Analyze and design electronic systems using computer aided design software or traditional workbench

CURRICULUM
Diploma

- Two years
- September start
- Burin Campus

**ENGINNEERING TECHNOLOGY**

**Welding Engineering Technician**

This program is designed to develop the skills and knowledge required to ensure that welding processes, procedures, and weldments conform to engineering specifications and related codes.

The program is supported by modern shop and laboratory facilities for instruction in Welding, Materials, Science, Nondestructive Testing and Computer Aided Design/Computer Aided Manufacturing (CAD/CAM).

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

**ACCREDITATION**

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

The academic credentials of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

**OBJECTIVES**

As a welding engineering technician, the graduate will have the knowledge and skill that will allow him/her to:

1. Implement and enforce quality control
2. Interpret and apply specifications and codes
3. Determine inspection procedures
4. Execute welding inspection and nondestructive testing procedures as defined by specifications and codes
5. Interpret and evaluate test results
6. Verify procedures and welder or welding operator qualifications
7. Verify the application of approved procedures
8. Prepare and maintain inspection records and reports
9. Set up equipment, lay out work to specifications and weld to prescribed standards

**CURRICULUM**

General education consisting of Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Engineering Graphics, Technology Awareness, and Learner Success.

Specific education in the theory and application of welding processes, procedures, and weldments.


Work exposure consisting of field experience, gained from an optional one week work exposure, in the field of welding engineering technology.

**CAREER OPPORTUNITIES**

The learner, upon graduation, may find employment with contractors, metal fabricators, quality assurance/quality control consultants, welding inspection firms, suppliers, oil & gas exploration/production/processing facilities and any other group that must comply with standards associated with the welding industry.

Graduates with two years of progressive work experience may be eligible to receive the designation of Certified Technician (C. Tech) upon completion of a Professional Practice and Ethics Exam.

**ENTRANCE REQUIREMENTS**

Eligibility for admission requires the applicant to meet one of the following four academic criteria:

1. **High School**
   - High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     i. English (2 credits) (minimum 60%) from: 3201 or 3202
     ii. Mathematics (4 credits) chosen from:
        - Advanced: 2205, 3205 (50% minimum in each course)
        - Academic: 2204 (50% minimum), 3204 (60% minimum)
     iii. Science (4 credits) two of which must be selected from:
        - Biology: 3201
        - Physics: 3204
        - Chemistry: 3202
        - Earth Systems: 3209
   - Note: The remaining two Science credits to be chosen from the highest Science mark in level 1, 2 or 3

2. **2.Comprehensive Arts and Science (CAS) Transition Certificate**
   - **Comprehensive Arts and Science (Transition) Certificate** with the following courses:
     - i. Math MA1040, MA1041
     - ii. Two Science courses chosen from one of the following three combinations:
        - a. Introductory Biology: BL1020, BL1021
        - b. Introductory Chemistry: CH1030, CH1031
        - c. Introductory Physics: PH1050, PH1051
   - Note: It is strongly recommended that CAS learners who intend to enroll in Engineering Technology programs complete both of the Introductory Chemistry courses and both of the Introductory Physics courses.

3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses (or equivalent):
     - i. English: 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
     - iii. Science from one of the following sections:
   - Applicants with Adult Basic Education (Level III) Graduation with a different Profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. **Mature Student Status**
   - Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.
HEALTH SCIENCES

Health Sciences Programs

OBJECTIVES
1. To provide education in the Allied Health Sciences as considered necessary by the Government, the college, registering associations and the community.
2. To graduate well trained personnel who can serve their employers and the community with the highest degree of competence.
3. To develop in students the ability to freely communicate with their fellow workers in the allied health professions.
4. To promote professionalism and a high level of responsibility in the student.
5. To impress on students the vital importance of maintaining at all times a high level of competence in the performance of their duties.
6. To foster in students the importance of maintaining up to date knowledge in their profession.
7. To provide continuing education programs for graduates.

NOTICE
Prospective students should NOTE CAREFULLY that while the college may admit students to a program of studies in Health Sciences, the right to practice is granted only through the appropriate authority of the Province in conjunction with national registration/credentialing bodies. Applicants with prior convictions or offences, or mental/physical disabilities should communicate with the appropriate organization involved.

APPLICATION PROCESS FOR MEDICAL LABORATORY SCIENCES, MEDICAL RADIOGRAPHY AND RESPIRATORY THERAPY PROGRAMS

Please note the following change in process:

Until December 31, 2009, all eligible applicants to these three programs were placed on a combined eligibility list for Medical Sciences I (General) and will be accepted on a first-come first-served basis.
This process will continue until the combined eligibility list has been exhausted. Medical Sciences (I) General is a two semester program of academic courses that is common to the three programs.
Selection to the third program-specific semester occurs through a competitive process based on academic standing in the first two semesters.

As of January 1, 2010, eligible applicants are placed on program-specific eligibility lists and will be accepted into one of Medical Laboratory Sciences, Medical Radiography, or Respiratory Therapy on a first-come first-served basis. Entrance requirements for these three programs were placed on a combined eligibility list for Medical Sciences I (General) and will remain the same as the current entrance requirements for Medical Sciences I (General).

HEALTH SCIENCES PROGRAMS EDUCATION REGULATIONS

1. Examinations and Promotions
The general rules and regulations of the college shall govern, except in instances specifically covered by the following regulations.
a. The faculty constitutes the examining body for all examinations. The standing of every student will be assessed at the end of each semester and will be communicated to individual students by the Registrar.
b. Students have the right to appeal a decision made with respect to their promotions.
c. To be promoted a student must, in addition to obtaining the requisite academic standard, complete and deliver all laboratories, assignments, and work reports as required.
d. The Primary Care Paramedicine program is taught in block format and does not align with the College’s annual academic schedule. Drop / add course dates, final examination schedules, etc. will differ and will be provided to each class at the beginning of each semester.
2. Medical Sciences I (General)
a. The college regulations govern promotion from semester 1 to semester 2.
b. Students must pass all first and second semester courses (minimum 50%) and have a minimum G.P.A. of 2.00 to be promoted from the second to the third semester.
c. Students who do not meet this standard and have not been academically dismissed under the college regulations may be readmitted to the first year of the program and repeat all deficiencies.
c. Promotion from semester 2 to semester 3 will be governed by the following:
   i. Students will compete for places in the third semester of the programs.
   ii. Competition will be based on academic standing in semesters 1 and 2 of the program.
   iii. The student’s weighted average at the end of the second semester will be used to calculate academic standing for purposes of competition.
   iv. In the case of students who have been exempted from courses in the first and second semester, the mark obtained in the course completed by the student at another post-secondary institution or other college program will be used in calculating the weighted average as if the course had been completed as part of the Medical Sciences I (General) program.
3. Course Pass Mark
a. Medical Sciences I (General), Rehabilitation Assistant – 50%
b. Diagnostic Ultrasoundography, Medical Laboratory Assistant, Medical Laboratory Sciences II and III, Medical Radiography II and III, Respiratory Therapy II and III – 60%, including a minimum of 60% on the final exam.
c. Primary Care Paramedicine – 80%, including a minimum of 80% on the final exam.
d. Promotion from semester 5 to semester 6 for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy. Students must have passed all courses in semesters 1, 2, 3, 4 and 5 and have a minimum G.P.A. of 2.00 to be promoted to the sixth semester (start of the clinical training).
   i. Promotion to the Clinical and Field Practicum training block in semester 1 and 2 for Primary Care Paramedicine. Students must pass all courses in the semester to be promoted to the practicum training block.
   ii. Students may be required to withdraw from the program at any time if, in the opinion of the Campus Administrator, they are unlikely to profit from continued attendance.
   iii. Students enrolled in accredited Health Sciences programs will be permitted a maximum of one additional year to complete their program of study. Students will be required to withdraw from the program at the point where completion of the program within the allowable time frame is not possible. Students will be required to reapply for admission under re-admission guidelines as outlined in the current College Calendar.

HEALTH SCIENCES PROGRAMS ADMISSION REQUIREMENTS

Academic entrance requirements are listed separately for each program on the following pages. Applicants meeting academic requirements must also submit the following documentation before final acceptance into a Health Sciences program will be granted:

1. Current Certificate of Conduct obtained from the Royal Newfoundland Constabulary, the Royal Canadian Mounted Police, or local provincial/municipal forces, including the “Vulnerable Sector Check”. Applicants with a criminal offence listed on their Certificate of Conduct may be denied admission to the School of Health Sciences.
2. Immunization Record, obtained from a Public Health nurse in the applicant’s area. The record must document the following vaccinations:
   i. DPT (Diphtheria, Polio, Tetanus)
   ii. MMR (Measles, Mumps, Rubella)
   iii. Varicella (Chickenpox)
   iv. Hepatitis B

The applicant is responsible for ensuring that all immunization requirements are fulfilled, and the immunization record complete, before submission. Certain vaccinations require a series of immunizations over a period of time; it is therefore important to start the process as early as possible.

3. The College’s Health Assessment Form, which includes:
   i. Section A: Family medical history, to be completed by the applicant.
   ii. Section B: Medical history and physical examination, to be completed by a physician.
   iii. Section C: Immunization requirements, to be completed by a physician.

In Section C, laboratory test results must be recorded. The physician will arrange for the applicant to have the following tests:
   • A blood test, to determine immunization status to the MMR, Varicella, and Hepatitis B vaccinations. If the blood test indicates insufficient immunity, the applicant will be advised to obtain the appropriate vaccine(s) from a health care practitioner, and to ensure their immunization record is updated accordingly.
   • A tuberculin skin test, to determine if the applicant has been exposed to tuberculosis. A two-step test is required for applicants who have not been tested before; a one-step test is sufficient in all other cases. If the tuberculin test is positive the applicant will be required to have a chest x-ray.

The applicant is responsible for ensuring that all medical requirements are fulfilled, and the documentation complete, before submission. The applicant is also responsible for all associated costs (vaccinations, laboratory testing, physician fees, certificate of conduct fees, etc.).

HEALTH SCIENCES CLINICAL TRAINING PRACTICUMS

All Health Sciences programs include mandatory clinical training components (practicums). Students will be assigned to affiliated hospital / clinical sites, and will be responsible for meeting the site’s pre-employment requirements. Detailed instructions will be provided by program faculty prior to the start of each practicum.

Students may request to complete a clinical training practicum at a site that is not currently offered as an affiliated site. In these cases the College will make every effort to accommodate the request but it is important to note that it will not always be possible to do so. A legal agreement with the requested institution must first be established, and this lengthy process cannot always be accomplished in the requested time frame. The earlier a request is made, the greater the likelihood of success.
POST DIPLOMA
• Thirteen Months
• September start
• Prince Philip Drive Campus

COURSES

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Note: UL4310 has a Clinical Component of 2.5 hours per week for 9 weeks.

Semester 2  Cr Le La

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<td>Clinical Training</td>
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Course Lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In semester 3, the Lecture and Lab hours will be adjusted to account for the clinical training component.

Students must possess a valid Emergency First Aid Certificate and a Basic Cardiopulmonary Resuscitation Certificate to be eligible for a diploma from the college.

Ultrasonography encompasses the medical use of sound waves to evaluate internal anatomy in real time and to produce diagnostic images. With the continuously expanding applications of ultrasound in today’s technologically advanced society, it has made for an exciting and demanding career field. Ultrasound images are used by Radiologists to retrieve critical information regarding the patient and their subsequent diagnosis and treatment. Ultrasound has grown to include applications in abdomen, obstetrics, gynecology, small parts, vascular and superficial structures.

OBJECTIVES
1. To provide the academic knowledge outlined in the National Competency Profile of the Canadian Association of Registered Diagnostic Ultrasound Professionals.
2. To apply the learned academic knowledge in clinical practice.
3. To prepare students in the ability to perform and complete the clinical competencies required by the Canadian Association of Registered Diagnostic Ultrasound Professionals.
4. To maintain a high level of professional conduct in the performance of all duties.

CURRICULUM
This is a thirteen month program, which includes training at the college and Eastern Regional Health Authority. Graduates of the program at the Prince Philip Drive Campus will be eligible to write the certification examinations set by the American Registry of Diagnostic Medical Sonographers (ARDMS) and the examinations set by the Canadian Association of Registered Diagnostic Ultrasound Professionals (CARDUP).

HEALTH SCIENCES
Diagnostic Ultrasonography (Post Diploma)

ACCREDITATION
The program at the Prince Philip Drive Campus is accredited by the Canadian Medical Association.

PROGRAM TRANSFERABILITY
Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland or a Bachelor of Science (Post Diploma, Human Science) from Athabasca University.

ENTRANCE REQUIREMENTS
To be accepted into the Diagnostic Ultrasonography program, an individual must have successfully completed an accredited program in Medical Radiation Technology (Medical Radiography, Radiation Therapy or Nuclear Medicine) and possess a certificate of registration with the Canadian Association of Medical Radiation Technologists (CAMRT).

Interested applicants should submit to the Registrar’s Office at the college an official application form along with a certified copy of: (1) high school marks (2) Medical Radiation Technology program marks (3) results of CAMRT examinations and (4) proof of current registration with the CAMRT.

Students meeting academic entrance requirements are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the “Health Sciences Programs Admission Requirements” section of the Calendar for details.
Medical Laboratory Assistant

Medical Laboratory Assistants are medical laboratory professionals who collect patient specimens, perform pre-analytical procedures to prepare them for analysis, and do data entry, clerical and reception duties. As an integral member of the health care team, the medical laboratory assistant is part of the front line laboratory staff and is often the first person with whom patients and clients interact. The profession therefore requires strong communication and organizational/time management skills as well as professional conduct.

OBJECTIVES
1. To provide the academic knowledge outlined in the Canadian Society for Medical Laboratory Science (CSMLS) competency profile, and to apply the learned knowledge in clinical practice.
2. To provide the knowledge and skills necessary to perform pre-analytical clinical laboratory procedures.
3. To develop the ability to communicate effectively with the patient and other members of the health care team.
4. To maintain a high level of professional conduct in the performance of duty.

CURRICULUM
This is a 36-week program, which includes training at the College as well as clinical placements at various hospitals/clinics throughout Newfoundland and Labrador. Semesters 1 and 2 (15 weeks each in duration) take place at the College whereas Semester 3 consists of a 6-week clinical placement. Graduates of the program will be eligible to write the certification examination set by the Canadian Society for Medical Laboratory Science.

ENTRANCE REQUIREMENTS
Eligibility for admission to the Medical Laboratory Assistant program requires the applicant to meet one of the following academic criteria:

1. High School
   High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   1 English 3201 or 3202 (minimum 60%)
   2 Mathematics (4 credits) chosen from:
      Advanced: 2205, 3205 (50% minimum in each course)
      Academic: 2204 (50% minimum), 3204 (60% minimum)
   3 Science – (4 credits) chosen from two of:
      Biology: 2201
      Physics: 3204
      Chemistry: 3202
      Earth Systems: 3209

   7 Electives (2 additional credits) chosen from any of the remaining 2000 level courses offered in the Senior High School Program.

2. Comprehensive Arts and Science (CAS) Transition Certificate with the following courses:
   1 English (minimum 60%): CM1060, CM1061
   2 Math (minimum 60%): MA1040, MA1041
   3 Four Science courses chosen from two of the following combinations:
      a. Biology: BL1020, BL1021
      b. Chemistry: CH1030, CH1031
      c. Physics: PH1050, PH1051

   Note: It is strongly recommended that CAS students who intend to enroll in the Medical Laboratory Assistant program complete the Introductory Biology and the Introductory Chemistry courses.

3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with Degree and Technical Profile (overall 60% average) including the following courses (or equivalent):
   1 English (minimum of 60%) 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   2 Mathematics (minimum of 60%) 1104A, 1104B, 1104C, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C
   3 Science from two of the following sections:
      b. Chemistry 1102, 2102A, 2102B, 2102C, 3102A, 3102B, 3102C
      c. Physics 1104, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C

   Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status
   Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

Students meeting academic entrance requirements are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the ‘Health Sciences Programs Admission Requirements’ section of the calendar for details.
• Two semesters
• September Start
• Prince Philip Drive Campus

COURSES

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At the end of the second semester, students will be selected into one of the specified allied health programs (Medical Laboratory Sciences, Medical Radiography, or Respiratory Therapy). Admission will be competitive and based on the student’s weighted average. See the “Health Sciences Programs Education Regulations” section of the calendar for more information on the competitive process and the weighted average.

PLEASE NOTE: This section does not apply to candidates who are currently applying to Medical Laboratory Sciences, Medical Radiography, or Respiratory Therapy. As of January 2010 candidates apply directly to their program of choice. Please refer to the “Application Process for Medical Laboratory Sciences, Medical Radiography and Respiratory Therapy Programs” section of the Calendar for details on the revised admissions process.

For the 2012-2013 Academic Year applicants wishing to pursue a career in Medical Laboratory Sciences, Medical Radiography or Respiratory Therapy will be admitted to a common two-semester program, Medical Sciences I (General). Selection to the specific allied health program (third semester) is competitive and will occur at the end of the second semester.

ENTRANCE REQUIREMENTS
Eligibility for admission to Medical Sciences I (General) requires the applicant to meet one of the following four academic criteria:

1. High School
   - High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     i. English 3201 or 3202 (minimum 60%)
     ii. Mathematics (4 credits) chosen from:
        Advanced: 2205, 3205 (50% minimum in each course)
        Academic: 2204 (50% minimum), 3204 (60% minimum)
     iii. Science (4 credits) chosen from:
        Biology: 3201
        Chemistry: 3202
        Earth Systems: 3209
   - Academic: 2204 (50% minimum), 3204 (60% minimum)
   - Science (4 credits) chosen from:
     i. Biology: 3201
     ii. Chemistry: 3202
     iii. Earth Systems: 3209

2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate with the following courses:
   i. English (minimum 60%): CM1060, CM1061
   ii. Math (minimum 60%): MA1040, MA1041
   iii. Four Science courses chosen from:
      Biology: BL1020, BL1021
      Chemistry: CH1030, CH1031
      Physics: PH1050, PH1051

Note: It is strongly recommended that all CAS students who intend to enroll in a Health Sciences program complete BL1020 and BL1021. In addition, it is recommended that students who intend to enroll in the Medical Laboratory Sciences program or the Respiratory Therapy program complete CH1030 and CH1031, and students intending to enroll in the Medical Radiography program complete PH1050 and PH1051.

3. Adult Basic Education (ABE)
   - Adult Basic Education (Level III) Graduation with Degree and Technical Profile (overall 60% average) including the following courses (or equivalent):
     i. English (minimum of 60%) 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
     ii. Mathematics (minimum of 60%) 1104A, 1104B, 1104C, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C
   - Science from two of the following sections:
     Biology: 1101, 2101A, 2101B, 2101C, 3101A, 3101B, 3101C
     Chemistry: 1102, 2102A, 2102B, 2102C, 3102A, 3102B, 3102C
     Physics: 1104, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C
   - Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status
   Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

Students meeting academic entrance requirements are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted: see the “Health Sciences Programs Admission Requirements” section of the calendar for details.
DIPLOMA
• Three years
• September start – Prince Philip Drive Campus
• To Be Determined - Grand Falls-Windsor Campus

COURSES

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Course Lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In intersession the Lecture and Lab hours will be adjusted to reflect the shorter semester length.

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Program Transferability
Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland or a Bachelor of Sciences (Post Diploma, Human Science) from Athabasca University.

Enrollment Requirements
For the 2012-2013 academic year, applicants who wish to pursue a career in Medical Laboratory Sciences must complete the Medical Sciences I (General) program of studies. Selection to Medical Laboratory Sciences is competitive and will occur at the end of the second semester.

Medical Sciences
Medical Laboratory Technologists are integral members of the health care team who perform diagnostic laboratory testing on blood, body fluids and tissues to aid the physician in the diagnosis, treatment and prevention of disease. It is a fast-paced and challenging profession that will appeal to students with a fascination for biological science.

The medical laboratory technologist examines bacterial cultures for identification and antibiotic sensitivity, assures the compatibility of blood for transfusion, identifies abnormal cells and analyzes the chemical composition of body fluids. As one of Canada’s largest group of health care professionals they play an essential role in the health care system.

This profession requires manual dexterity, visual color discrimination, a keen eye for detail, organizational/time management skills and judgment/decision-making ability.

Objectives
To provide the academic knowledge outlined in the Canadian Society for Medical Laboratory Science (CSMLS) competency profile, and to apply the learned knowledge in clinical practice.

To provide the basic knowledge and skills necessary to perform clinical laboratory procedures.

To develop the ability to communicate effectively with the patient and with other members of the health team.

To maintain a high level of professional conduct in the performance of duty.

Curriculum
The curriculum for this program is designed to encompass three years of training. The first two years are spent at the college and the emphasis is placed on academic and theoretical training.

During the sixth, seventh, eighth and ninth semesters emphasis is placed upon practical training with clinical experience being conducted in health care institutions and a simulated hospital laboratory environment.

Graduates of the program at the Prince Philip Drive Campus will be eligible to sit the certification examination set by the Canadian Society for Medical Laboratory Science (CSMLS). The CSMLS is the national professional body for medical laboratory technologists.

Accreditation
The program at the Prince Philip Drive Campus is accredited by the Canadian Medical Association.

Program Transferability
Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland or a Bachelor of Sciences (Post Diploma, Human Science) from Athabasca University.

Enrollment Requirements
For the 2012-2013 academic year, applicants who wish to pursue a career in Medical Laboratory Sciences must complete the Medical Sciences I (General) program of studies. Selection to Medical Laboratory Sciences is competitive and will occur at the end of the second semester.
**Medical Radiography**

Medical Radiological Technologists play a vital role in the diagnosis and treatment of many injuries and illnesses. At a physician’s request, Radiological Technologists use equipment that emits x-rays to produce images of a body part or system. Their work involves a broad variety of procedures and specialties including: routine general radiography, mammography, angiography, fluoroscopy and computerized tomography.

**OBJECTIVES**

1. To provide the academic knowledge outlined in the Canadian Association of Medical Radiation Technologists (CAMRT) Competency Profile.
2. To apply the learned academic knowledge in clinical practice.
3. To develop a sense of professionalism and responsibility.
4. To provide comprehensive knowledge of the hazards involved and appropriate protection methods.
5. To provide the community with trained personnel who can serve their employers and patients with the highest degree of competence.

**CURRICULUM**

The curriculum for this program emphasizes theory and practice of medical radiography. Second year classroom and laboratory sessions are supplemented by weekly assignments at Eastern Regional Integrated Health Authority. The clinical phase of the program is designed to train the student in practical aspects of medical radiography and to discipline the student to the working conditions of the radiology department. This portion of the course is a clinical training period during which the student will apply, under supervision, the theories and principles learned during the previous years of training.

The aim of this portion of the program is:

1. To ensure that the student can accurately and confidently perform the varied examinations that are carried out on a daily basis in a radiology department.
2. To ensure that the student has performed the number and variety of examinations required to complete the course.

The clinical phase will consist of 48 weeks of training. The program is conducted at sites of Eastern Regional Health Authority. Students will follow a rotation schedule designed to provide broad clinical exposure to the different radiographic specialties.

Graduates of the program will be eligible to write Canadian Association of Medical Radiation Technologists (CAMRT) certification examinations. The CAMRT is the national professional body for medical radiation technologists.

**ACREDITATION**

The program at the Prince Philip Drive Campus is accredited by the Canadian Medical Association.

**PROGRAM TRANSFERABILITY**

Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland or a Bachelor of Sciences (Post Diploma, Human Science) from Athabasca University.

**ENTRANCE REQUIREMENTS**

For the 2012-2013 academic year, applicants wishing to pursue a career in Medical Radiography must complete the Medical Sciences I (General) program of studies. Selection to Medical Radiography is competitive and will occur at the end of the second semester.

**PLEASE NOTE** a change in the application process for the Medical Radiography program effective January 1, 2010. See the “Application Process for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy Programs” section of the calendar for details.

**Selection:**

1. Students will compete for entry into the third semester.
2. Competition will be based on academic standing in semesters 1 and 2 of the Medical Sciences I (General) program. Students must pass all first and second semester (minimum 50%) courses and have a minimum G.P.A. of 2.00 to be considered for admission to the third semester.
3. The student’s weighted average at the end of the second semester will be used to calculate academic standing for purposes of competition. In the case of students who have been exempted from courses in the first and second semesters, the mark obtained in the course completed by the student at another post secondary institution, or other college program will be used in calculating the weighted average as if the course had been completed as part of the Medical Sciences I (General) program.

**ENTRANCE REQUIREMENTS**

For the academic year, applicants wishing to pursue a career in Medical Radiography must complete the Medical Sciences I (General) program of studies. Selection to Medical Radiography is competitive and will occur at the end of the second semester.

**PLEASE NOTE** a change in the application process for the Medical Radiography program effective January 1, 2010. See the “Application Process for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy Programs” section of the calendar for details.

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For the 2012-2013 academic year, applicants wishing to pursue a career in Medical Radiography must complete the Medical Sciences I (General) program of studies. Selection to Medical Radiography is competitive and will occur at the end of the second semester.

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**ENTRANCE REQUIREMENTS**

For the academic year, applicants wishing to pursue a career in Medical Radiography must complete the Medical Sciences I (General) program of studies. Selection to Medical Radiography is competitive and will occur at the end of the second semester.

**PLEASE NOTE** a change in the application process for the Medical Radiography program effective January 1, 2010. See the “Application Process for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy Programs” section of the calendar for details.

**Selection:**

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3. The student’s weighted average at the end of the second semester will be used to calculate academic standing for purposes of competition. In the case of students who have been exempted from courses in the first and second semesters, the mark obtained in the course completed by the student at another post secondary institution, or other college program will be used in calculating the weighted average as if the course had been completed as part of the Medical Sciences I (General) program.

**ENTRANCE REQUIREMENTS**

For the academic year, applicants wishing to pursue a career in Medical Radiography must complete the Medical Sciences I (General) program of studies. Selection to Medical Radiography is competitive and will occur at the end of the second semester.

**PLEASE NOTE** a change in the application process for the Medical Radiography program effective January 1, 2010. See the “Application Process for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy Programs” section of the calendar for details.

**Selection:**

1. Students will compete for entry into the third semester.
2. Competition will be based on academic standing in semesters 1 and 2 of the Medical Sciences I (General) program. Students must pass all first and second semester (minimum 50%) courses and have a minimum G.P.A. of 2.00 to be considered for admission to the third semester.
3. The student’s weighted average at the end of the second semester will be used to calculate academic standing for purposes of competition. In the case of students who have been exempted from courses in the first and second semesters, the mark obtained in the course completed by the student at another post secondary institution, or other college program will be used in calculating the weighted average as if the course had been completed as part of the Medical Sciences I (General) program.
HEALTH SCIENCES

Primary Care Paramedicine

4. To prepare the graduate to meet additional competencies as required for employment as a PCP in the province of Newfoundland and Labrador.

5. To maintain a high level of professional and ethical conduct in the performance of all duties.

ACCREDITATION

This program is accredited by the Canadian Medical Association.

ENTRANCE REQUIREMENTS:

Eligibility for admission to the Primary Care Paramedicine program requires the applicant to meet one of the following four academic criteria:

1. High School
   High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English 3201 or 3202 (minimum 60%)
   ii. Mathematics (4 credits) chosen from:
      - Advanced: 2205, 3205 (50% minimum in each course)
      - Academic: 2204 (50% minimum), 3204 (60% minimum)
   iii. Science (4 credits) chosen from two of:
      - Biology: 3201
      - Physics: 3204
      - Chemistry: 3202
      - Earth Systems: 3209

2. Comprehensive Arts and Science Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate with the following courses:
   - English (minimum 60%): CM1060, CM1061
   - Math (minimum 60%): MA1040, MA1041
   - Science (4 credits) from two of the following:
     - Biology: 3201
     - Physics: 3204
     - Chemistry: 3202
     - Earth Systems: 3209

3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with Degree and Technical Profile (overall 60% average) including the following courses (or equivalent):
   - English (minimum 60%): 3101A, 3101B, 3101C
   - Math (minimum 60%): 3102A, 3102B, 3102C
   - Science (minimum 60%): 1104A, 1104B, 1104C, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C

4. Mature Student Status
   Applicants who do not meet the entrance requirements described above are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the “Health Sciences Programs Admission Requirements” section of the calendar for details.

Students admitted to the Primary Care Paramedicine program will be permitted a maximum of one additional year to complete their program of studies. Students will be required to withdraw from the program at the point where completion within the allowable time frame is not possible. Students will be required to reapply for admission under re-admission guidelines as outlined in the current College Calendar. Re-admitted students will be required to successfully complete a skills-based exam in order to carry forward credits for previously-completed skills-based courses (PA1270, PA1330, and PA1450).

CURRICULUM:
The 37-week Primary Care Paramedicine program is an intensive program requiring full-time study. It combines lectures and laboratories with supervised clinical and field experience. The first semester (15 weeks) consists of 11 weeks didactic and 4 weeks clinical and field placements. The second semester (15 weeks) consists of 9 weeks didactic and 6 weeks clinical and field placements. The third semester (7 weeks) is devoted entirely to clinical and field placements.

CLINICAL AND FIELD PLACEMENTS:
Students will be expected to travel and incur costs associated with placements in various hospital and ambulance departments (private and hospital-based). These clinical/field placements are limited and students will be placed based on availability. Sites include Eastern, Central, Western and Labrador - Grenfell Regional Health Authorities which includes St. John’s, Carbonear, Freshwater, Placentia Bay, Clarenville, Burin, Gander, Grand Falls-Windsor, Lewisporte, Deer Lake, Corner Brook, Stephenville, Port aux Basques and St. Anthony. Other sites may be available as they are developed.

Additional entrance requirements include:
- Current CPR Certificate (Level C or HCP)
- Current First Aid Certificate (Standard)
- Class 05 Learner (Level 1) Drivers Licence (minimum)

Students meeting the entrance requirements described above are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the “Health Sciences Programs Admission Requirements” section of the calendar for details.

Students admitted to the Primary Care Paramedicine program will be permitted a maximum of one additional year to complete their program of studies. Students will be required to withdraw from the program at the point where completion within the allowable time frame is not possible. Students will be required to reapply for admission under re-admission guidelines as outlined in the current College Calendar. Re-admitted students will be required to successfully complete a skills-based exam in order to carry forward credits for previously-completed skills-based courses (PA1270, PA1330, and PA1450).

CURRICULUM:
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Students will be expected to travel and incur costs associated with placements in various hospital and ambulance departments (private and hospital-based). These clinical/field placements are limited and students will be placed based on availability. Sites include Eastern, Central, Western and Labrador - Grenfell Regional Health Authorities which includes St. John’s, Carbonear, Freshwater, Placentia Bay, Clarenville, Burin, Gander, Grand Falls-Windsor, Lewisporte, Deer Lake, Corner Brook, Stephenville, Port aux Basques and St. Anthony. Other sites may be available as they are developed.

Additional entrance requirements include:
- Current CPR Certificate (Level C or HCP)
- Current First Aid Certificate (Standard)
- Class 05 Learner (Level 1) Drivers Licence (minimum)
DIPLOMA
• Two years
• September start
• Through Distributed Learning (DL)

COURSES

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<td>Introduction to Clinical Skills</td>
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<td>TA1610</td>
<td>Clinical Orientation Placement</td>
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<td></td>
<td>1 wk</td>
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<td></td>
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<tr>
<td>TA2130</td>
<td>Disease, Injury and Intervention I</td>
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<td>Communication Disorders in Rehabilitation</td>
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<td>PS1120</td>
<td>Psychology I</td>
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<td>TA1230</td>
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<td>4</td>
<td>3</td>
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<td>TA1611</td>
<td>Advanced Clinical Skills</td>
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| Course Lecture (Lt) and Lab (La) hours per week are based on a 15 week semester. In semester 5 the Lecture and Lab hours will be adjusted to reflect the shorter semester length.

| Semester 4 |
| SD1640| Ethics in Health Care                      | 3  | 3  | 0  |
| PS1480| Health Care Organization and Structure     | 3  | 3  | 0  |
| TA1510| Introduction to Gerontology               | 2  | 2  | 0  |
| TA2670| Therapeutic Skills I for OTA               | 5  | 4  | 3  |
| TA2680| Therapeutic Skills I for PTA               | 5  | 4  | 3  |
| Semester 5 |
| TA2740| Clinical Placement B for OTA               | 5  | 5  wk|
| TA2750| Clinical Placement B for PTA               | 5  | 5  wk|
| TA2690| Therapeutic Skills II for the Rehabilitation Assistant (OTA and PTA) | 6  | 5  | 4  |
| Course Lecture (Lt) and Lab (La) hours per week are based on a 15 week semester. In semester 5 the Lecture and Lab hours will be adjusted to account for the clinical training component.

| Semester 6 |
| TA2760| Clinical Placement III for Rehabilitation Assistant (OTA and PTA) | 6  | 6  wk|

Rehabilitation Assistants provide a vital supporting role in the delivery of efficient and effective rehabilitation services. They work as members of a health care team, under the supervision of and in collaboration with Occupational Therapists and Physiotherapists. Rehabilitation Assistants are involved with the safe and proficient delivery of activities that have been established as a treatment plan for clients coping with temporary or permanent limitations in occupational performance and/or functional movement. The role of the Rehabilitation Assistant varies depending on the practice setting, which includes rehabilitation facilities, hospitals, long-term care facilities, community settings, and private practices. The Rehabilitation Assistant works with individuals, families, or groups, helping clients achieve optimal levels of physical, psychosocial or cognitive abilities.

OBJECTIVES
1. To provide the academic knowledge and skills outlined in the competency profiles for Physiotherapist Assistants (Canadian Physiotherapy Association) and Occupational Therapy Assistants (Canadian Association of Occupational Therapists).
2. To apply the learned academic knowledge and skills in clinical practice.
3. To develop effective communication skills and professional behaviors.
4. To perform delegated therapeutic skills safely and effectively under the supervision of an Occupational Therapist or Physiotherapist.
5. To provide the community with skilled Rehabilitation Assistants who can serve their employers and clients with the highest degree of competence.

ENTRANCE REQUIREMENTS
Eligibility for admission to the Rehabilitation Assistant program requires the applicant to meet one of the following four academic criteria:
1. High School
   - High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     i. English 3201 or 3202 (minimum 60%)
     ii. Mathematics (4 credits) chosen from:
        - Advanced: 2205, 2206, 3205 (50% minimum in each course)
        - Academic: 2204 (50% minimum), 3204 (60% minimum)
   iii. Science – (2 credits) chosen from one of:
       - Biology: 3201
       - Physics: 3204
       - Chemistry: 3202
   iv. Electives (2 additional credits) chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
2. Comprehensive Arts and Science (CAS) Transition Certificate with the following course combinations:
   i. English (minimum 60%): CM1060, CM1061
   ii. Math (minimum 60%): MA1040, MA1041
3. Two Science courses chosen from one of the following three combinations:
   a. Biology: BL1020, BL1021
   b. Chemistry: CH1030, CH1031
   c. Physics: PH1030, PH1031

Curriculum
The curriculum for this program encompasses six (6) semesters. Students may enroll on a full or part-time basis. The program is offered through the College’s Distributed Learning Service.

The Distributed Learning format enables learners to take part in education without the restraints of geography and structured time. Technology-enabled learning offers flexibility, collaboration, and interaction without the isolation normally associated with traditional distance education. It also improves access to education without the isolation normally associated with traditional distance education. It also improves access to education without the isolation normally associated with traditional distance education.

Web based courses are enhanced by hands-on laboratory sessions and structured clinical placements. These activities take place as close as possible to the student’s home location; however, in some cases travel may be necessary. Clinical placements are limited and students will be notified of available locations in their area.

PROGRAM TRANSFERABILITY
Graduates of College of the North Atlantic’s Occupational Therapist Assistant or Physiotherapist Assistant Certificate program may apply to enter Semester 4 of the Rehabilitation Assistant (OTA and PTA) program to receive dual certification. Graduates with one certification (OTA or PTA) from another institution are also eligible for advanced standing into the Rehabilitation Assistant program; entry point will be determined on a case-by-case basis.

CURRICULUM
The curriculum for this program encompasses six (6) semesters. Students may enroll on a full or part-time basis. The program is offered through the College’s Distributed Learning Service.

The Distributed Learning format enables learners to take part in education without the restraints of geography and structured time. Technology-enabled learning offers flexibility, collaboration, and interaction without the isolation normally associated with traditional distance education. It also improves access for independent, disciplined learners.

Web based courses are enhanced by hands-on laboratory sessions and structured clinical placements. These activities take place as close as possible to the student’s home location; however, in some cases travel may be necessary. Clinical placements are limited and students will be notified of available locations in their area.

PROGRAM TRANSFERABILITY
Graduates of College of the North Atlantic’s Occupational Therapist Assistant or Physiotherapist Assistant Certificate program may apply to enter Semester 4 of the Rehabilitation Assistant (OTA and PTA) program to receive dual certification. Graduates with one certification (OTA or PTA) from another institution are also eligible for advanced standing into the Rehabilitation Assistant program; entry point will be determined on a case-by-case basis.
HEALTH SCIENCES

Respiratory Therapy

The field of Respiratory Therapy is diverse. Respiratory Therapists (RT’s) are healthcare professionals involved in the assessment, diagnosis, and treatment of many cardiopulmonary disorders. RT’s are integral members of the health care team, working in hospital Intensive Care Units, Operating Rooms, Emergency Departments, Delivery Rooms, Pulmonary Function Laboratories, and Medical and Surgical wards. RT’s may also work in the community setting as homecare therapists, educators, or medical/pharmaceutical representatives. Respiratory Therapists must be able to communicate effectively, possess excellent interpersonal and critical thinking skills, and have the ability to exercise good judgement in critical medical situations.

OBJECTIVES

1. To provide the academic knowledge outlined in the National Alliance of Respiratory Therapy Regulatory Bodies National Competency Profile (NCP).
2. To apply the learned academic knowledge in clinical practice.
3. To develop a sense of professionalism and responsibility.
4. To demonstrate an adequate understanding of the Registered Respiratory Therapists’ role and responsibilities within the health care team.
5. To provide the community with trained personnel who can serve their employers and clients with the highest degree of competence.

CURRICULUM

The three year Respiratory Therapy program combines lectures and laboratories with supervised clinical experience. Program topics include: anatomy, physiology, microbiology, chemistry, physics, pharmacology, pathophysiology, respiratory therapy procedures, respiratory therapy equipment, mechanical ventilation, cardiopulmonary diagnostics, pediatric and neonatal care.

Students must possess a valid Emergency First Aid Certificate and a Basic Cardiopulmonary Resuscitation Certificate to be eligible for Diploma from the college.

ENTRANCE REQUIREMENTS

For the 2012-2013 academic year, applicants wishing to pursue a career in Respiratory Therapy must complete the Medical Sciences I (General) program of studies. Selection to Respiratory Therapy is competitive and will occur at the end of the second semester.

PLEASE NOTE a change to the application process for the Respiratory Therapy program effective January 1, 2010. See the “Application Process for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy Programs” section of the calendar for details.

Selection:
1. Students will compete for entry into the third semester.
2. Competition will be based on academic standing in semesters 1 and 2 of the Medical Sciences I (General) program. Students must pass all first and second semester (minimum 60%) courses and have a minimum G.P.A. of 2.00 to be considered for admission to the third semester.
3. The student’s weighted average at the end of the second semester will be used to calculate academic standing for purposes of competition. In the case of students who have been exempted from courses in the first and second semesters, the mark obtained in the course completed by the student at another post secondary institution, or other college program will be used in calculating the weighted average as if the course had been completed as part of the Medical Sciences I (General) program.

DIPLOMA
- Three years
- September start
- Prince Philip Drive Campus

COURSES

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<tr>
<th>CODE</th>
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<th>Cr</th>
<th>Le</th>
<th>La</th>
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<tr>
<td>BL2100</td>
<td>Biology</td>
<td>2</td>
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<tr>
<td>PS1420</td>
<td>Health Care Organization and Structure</td>
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</tr>
<tr>
<td>PS1100</td>
<td>or PS1150</td>
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<tr>
<td>CH2200</td>
<td>or CH1500</td>
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Course Lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In intersession the Lecture and Lab hours will be adjusted to reflect the shorter semester length.

Semester 4

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<tr>
<th>CR/ Le/ La</th>
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<tbody>
<tr>
<td>BL2330 Cardiopulmonary Physiology</td>
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<tr>
<td>BL2340 Cardiopulmonary Pathophysiology</td>
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<tr>
<td>BL2410 Microbiology</td>
</tr>
<tr>
<td>RT2200 Gas Supply &amp; Control</td>
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<tr>
<td>RT2300 Pharmacology</td>
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<tr>
<td>RT2450 Respiratory Therapy Procedures</td>
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<td>SD1610 Clinical Skills I</td>
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Semester 5

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<tr>
<td>RT2230 Mechanical Ventilators</td>
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<tr>
<td>RT2220 Mechanical Ventilation</td>
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<tr>
<td>RT2310 Anesthesia</td>
</tr>
<tr>
<td>RT2451 Neonatal/Pediatric Respiratory Care I</td>
</tr>
<tr>
<td>RT2500 Cardiopulmonary Diagnostics</td>
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<tr>
<td>SD1611 Clinical Skills II</td>
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Semester 6

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<tr>
<td>RT3401 Comprehensive Respiratory Care</td>
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<tr>
<td>SD1680 Ethics in Health Care</td>
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<tr>
<td>RT2452 Neonatal/Pediatric Respiratory Care II</td>
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<tr>
<td>RT3450 Clinical Skills III</td>
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Course Lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In intersession the Lecture and Lab hours will be adjusted to reflect the shorter semester length.

Clinical Year (August-June)

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<td>RT1610 Clinical Orientation</td>
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<tr>
<td>RT3510 Clinical Practicum I</td>
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<tr>
<td>RT3520 Clinical Practicum II</td>
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<table>
<thead>
<tr>
<th>CR/ Le/ La</th>
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</thead>
<tbody>
<tr>
<td>RT3530 Clinical Elective</td>
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</table>

During the third year of the program students will rotate through various training sites of Eastern Regional Health Authority (RHA). For the clinical elective course, students may have the opportunity to avail of training placements with other RHAs within the Province of Newfoundland and Labrador.

Students must possess a valid Emergency First Aid Certificate and a Basic Cardiopulmonary Resuscitation Certificate to be eligible for Diploma from the college.
SCHOOL OF
INDUSTRIAL TRADES
The College has 37 trades programs to choose from with most having Red Seal Certification (www.red-seal.ca). Our programs will prepare you for the challenges of working in industry.

**APPRENTICESHIP TRAINING**

Trades programs are different from many other programs in the college. When you complete the first year of a trades program, you have only finished the entry level of your apprenticeship. Your training is not all classroom work; it is a combination of classroom, field, shop and lab activity. You will spend at least 50% of your time on activity based projects. The pass mark for all trades courses is 70%.

Once you find work in your trade, you can sign up with the Department of Advanced Education and Skills as an apprentice and complete your program. As an apprentice, you will alternate between work experience and blocks of training at the college. While in the workplace, you will work under the supervision of a journeyperson until you have the required hours to write the final certification exam. This process may take 3-4 years depending on the program.

**CURRICULUM**

The curriculum for most trades offered at the college is owned by the Department of Advanced Education and Skills. They make sure the curriculum reflects industry needs ensuring you will get the skills required to be successful in today’s workforce. To view the specific Plan of Training for your trade, which contains all the courses required for certification, please visit [http://www.edu.gov.nl.ca/app/plans.html](http://www.edu.gov.nl.ca/app/plans.html).

**PLAR**

Prior Learning Assessment Recognition (PLAR) is available to all learners. PLAR will allow you to get credit for any previous learning or work experience. For example, if you have completed a related program or have a lot of work experience you may benefit from PLAR. Please refer to policy SS-208 for details.

**WOMEN IN TRADES**

It is also an exciting time for women who want to step outside the more “traditional roles”. Careers thought in the past to be traditionally male oriented no longer have to be and the same can be said about careers that were once thought to be female oriented. Women are entering the ranks of non-traditional jobs. There can be great satisfaction in choosing a career course that fits in more with an individual’s personal dreams. By removing limitations that are no longer relevant in the modern world it is possible to obtain satisfaction in a nontraditional career role.

**PERSONAL PROTECTIVE EQUIPMENT**

The College takes pride in offering you a safe learning environment. All safety equipment must be CSA certified, so to help you obtain the right Personal Protective Equipment (PPE), CNA will have hard hats, safety glasses and gloves available in our book stores for your purchase. Before buying any safety equipment required for your training, please consult with your instructor upon entering a program and they’ll be happy to advise you.
# DIPLOMA
- Two years
- September start
- Gander Campus

## COURSES

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<td>Structural Repair Shop Mathematics</td>
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<tr>
<td>MA1072</td>
<td>Aircraft Maintenance Mathematics</td>
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<tr>
<td>GM1120</td>
<td>General Maintenance Procedures (M, E, S)</td>
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<tr>
<td>GM1130</td>
<td>Aircraft Servicing (M, E)</td>
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<td>Standard Workshop Practices (M, E, S)</td>
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<td>Basic Electronics (M, E)</td>
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<td>Reciprocating Engine Fundamentals (M)</td>
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<td>Aircraft Structures &amp; Materials (M, E, S)</td>
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<td>PE1140</td>
<td>Basic AC Electronics (M, E)</td>
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<td>PH1100</td>
<td>Physics for Aircraft Maintenance</td>
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<td>Maintenance Regulations (M, E, S)</td>
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<td>Aerodynamics &amp; Flight Controls (M, E)</td>
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<td>Aircraft Structural Repair (M, E, S)</td>
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<td>Motors, Generators &amp; Starting Systems (M, E)</td>
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<td>Aircraft Systems (M)</td>
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<td>Aircraft Instruments II (M, E)</td>
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<td>Turbine Engine Systems (M)</td>
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<td>AV1500</td>
<td>Basic Navigation I (M, E)</td>
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<td>Navigation Systems Installation (E)</td>
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<td>AI1270</td>
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<td>Electrical Power Systems (M, E)</td>
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<td>CM2360</td>
<td>Communications Essentials</td>
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<td>AV2170</td>
<td>Pulse Navigation Systems (M)</td>
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<td>AV2180</td>
<td>Integrated Navigation Systems Installation (E)</td>
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<td>Propellers and Systems (M, E)</td>
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<td>Stress Skin Repair/Modification (M, E)</td>
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<td>Rotary Wing Aircraft (M)</td>
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<td>RW3141</td>
<td>Rotary Wing Aircraft Systems (M)</td>
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<td>AV3110</td>
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<td>AV3110</td>
<td>Auto Flight Theory (M)</td>
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<td>AV2540</td>
<td>Auto Flight Ramp Testing (M)</td>
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<td>AV2570</td>
<td>Auto Flight Troubleshooting (E)</td>
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<tr>
<td>PT1211</td>
<td>Reciprocating Engine Overhaul (M)</td>
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</tr>
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</table>

## INDUSTRIAL TRADES

### Aircraft Maintenance Engineering Technician

This two-year Aircraft Maintenance Engineering Technician program offers training in the inspection, maintenance, and repair of aircraft and aircraft components. Topics include the role of the Aircraft Maintenance Engineer as being responsible for aviation safety and airworthiness. Courses cover all aspects of aircraft maintenance for both fixed wing and rotary wing aircraft and include safety practices, ground handling, inspection techniques, power plant, structural repair, aircraft systems, and avionics.

Upon completion of the two-year program learners are awarded an Aircraft Maintenance Engineering Technician diploma.

### ACCREDITATION

This program is accredited by Transport Canada as meeting the basic training requirements for the Aircraft Maintenance Engineer’s license categories “M1”, “M2” and “E”. Transport Canada also grants qualified graduates a 21-month experience credit towards the 48 months required and credit for having completed the required knowledge exams. After successful completion of this program and the required work experience, apprentices qualify to write an exam in Aircraft Maintenance Regulations to acquire an Aircraft Maintenance Engineer’s license.

### OUTCOMES

1. Demonstrate safety practices in the aviation industry.
2. Demonstrate skills and knowledge required to work in the aircraft maintenance field.
3. Develop and strengthen the related knowledge and skill in components which complement and support the technical training.
4. Demonstrate positive attitudes and behavior that will enable me to become successful in the industry.

### ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

#### 1. High School

- High School Graduation Certificate with a 60% average in nine level 3000 credits, or equivalent, including Mathematics (4 credits) chosen from:
  - Advanced: 2205, 3205 (50% minimum in each course)
  - Academic: 2204 (50% minimum), 3204 (60% minimum)

#### 2. Comprehensive Arts and Science (CAS) Transition Certificate


#### 3. Adult Basic Education

- Adult Basic Education (Level III) Graduation with a Degree and Technical Profile (or Business Related College Profile), including the following courses (or equivalent):

### EMPLOYMENT OPPORTUNITIES

Graduates may find employment in the following areas:

- Fixed wing airlines
- Rotary commercial airlines
- Aircraft manufacturers
- Repair and overhaul companies
- Private operators
- Flying schools
- Government departments

### OUTCOMES

1. Demonstrate safety practices in the aviation industry.
2. Demonstrate skills and knowledge required to work in the aircraft maintenance field.
3. Develop and strengthen the related knowledge and skill in components which complement and support the technical training.
4. Demonstrate positive attitudes and behavior that will enable me to become successful in the industry.

### ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

#### 1. High School

- High School Graduation Certificate with a 60% average in nine level 3000 credits, or equivalent, including Mathematics (4 credits) chosen from:
  - Advanced: 2205, 3205 (50% minimum in each course)
  - Academic: 2204 (50% minimum), 3204 (60% minimum)
### COURSES

<table>
<thead>
<tr>
<th>CODE</th>
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<th>Hrs</th>
</tr>
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<tbody>
<tr>
<td><strong>Semester 1</strong></td>
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<tr>
<td>MA1070</td>
<td>Structural Repair Shop Mathematics (M,E,S)</td>
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<tr>
<td>GM1550</td>
<td>Maintenance Regulations (M,E,S)</td>
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<tr>
<td>GM1120</td>
<td>General Maintenance Procedures (M,E,S)</td>
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<tr>
<td>GM1105</td>
<td>Aircraft Plumbing (S)</td>
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<tr>
<td>GM1140</td>
<td>Standard Workshop Practices (M,E,S)</td>
<td>55</td>
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<tr>
<td>AF1130</td>
<td>Aircraft Structures &amp; Materials (M,E,S)</td>
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<tr>
<td>AF1240</td>
<td>Aircraft Structural Repair (M,E,S)</td>
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<tr>
<td>AF1220</td>
<td>Aircraft Structures, Wood, Fabric, Tubular (S)</td>
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<td>AF1400</td>
<td>Specialized Processes and Fixtures (S)</td>
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<td>EG1160</td>
<td>Technical Graphics (M,E,S)</td>
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<tr>
<td>SD1710</td>
<td>Job Search Techniques</td>
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<td>AF1250</td>
<td>Aircraft Stress Skin Repair (S)</td>
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<td>GM1570</td>
<td>Corrosion Control (M,E,S)</td>
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<td>GM1580</td>
<td>Corrosion Control (S)</td>
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<td>AF1270</td>
<td>Composite Materials (M,S)</td>
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<tr>
<td>AF2110</td>
<td>Aircraft Maintenance Fundamentals (S)</td>
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<tr>
<td>AT1000</td>
<td>Windshields, Windows and Lenses (S)</td>
<td>49</td>
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<tr>
<td>GM1600</td>
<td>Structural Damage/Repair and Assembly (S)</td>
<td>72</td>
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<tr>
<td>TS1550</td>
<td>WHMIS</td>
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<tr>
<td><strong>Semester 3</strong></td>
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<tr>
<td>AF1340</td>
<td>Advanced Composite Materials (S)</td>
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<tr>
<td>GM1525</td>
<td>Sheet Metal Fabrication (S)</td>
<td>120</td>
</tr>
<tr>
<td>TS1530</td>
<td>Standard First Aid</td>
<td>13</td>
</tr>
</tbody>
</table>

Students will receive Transport Canada credit towards the “S” license upon completion of the program.

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### OUTCOMES

1. Demonstrate positive attitudes and behaviors that will enable me to become successful in the industry.
2. Develop techniques, standards and practices of structural repair that conforms to Transport Canada guidelines for the occupation.
3. Provide a broad overview of aircraft maintenance and repair functions with specific emphasis on safety practices in the industry.
4. Demonstrate safe work practices and personal protection.

### ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate

### EMPLOYMENT OPPORTUNITIES

Graduates may find employment in the following areas:

- Aircraft repair stations
- Aircraft manufacturing facilities
- Composite fabricators
- Composite repair stations
- Helicopter service centers
- Helicopter overhaul facilities
- Regional and national airlines

---

The Aircraft Structural Repair Technician is responsible for the assessment of damage, control of corrosion, repairs, modifications, and replacement of aircraft structures and structural components using recognized techniques and specialized tools and equipment. Learners are trained in the maintenance, repair and fabrication of aircraft structural components. In addition to training with wood, fabric and sheet metal materials, this program includes extensive training in modern composite materials.
### INDUSTRIAL TRADES

#### Automotive Service Technician

Automotive Service Technicians adjust, test and repair engines, steering systems, braking systems, drive trains, vehicle suspensions, electrical systems and air conditioning systems, and do wheel alignments. In large shops, they sometimes specialize in repairing, rebuilding and servicing specific parts. In smaller shops, they may work in a wider variety of repair jobs. Your job starts by reading the work order and examining the vehicle. Diagnosing a problem will involve using test equipment, dismantling damaged parts, then reassembling them and being able to test the repaired mechanism. Other duties may include providing the customer with scheduled maintenance services such as oil changes, lubrications and tune ups or advising customers in work performed, general vehicle conditions and future repair requirements.

**OUTCOMES**

1. Demonstrate safe work practices and personal protection.
2. Diagnose and repair engine systems.
3. Diagnose and repair engine support systems.
4. Diagnose and repair vehicle management systems.
5. Diagnose and repair drive line systems.
6. Diagnose and repair electrical systems and components.

**ENTRANCE REQUIREMENTS**

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate
3. **Adult Basic Education**
   - Adult Basic Education (CAS) Transition
4. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (CAS) Trades Certificate
5. **Mature Student Status**

Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

**EMPLOYMENT OPPORTUNITIES**

Graduates may find employment in the following areas:

- Garages
- Service stations
**CERTIFICATE**
- 37 weeks
- Start date varies
- Bay St. George Campus

**COURSES**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs</th>
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</thead>
<tbody>
<tr>
<td>TS1510</td>
<td>Occupational Health and Safety</td>
<td>6</td>
</tr>
<tr>
<td>TS1520</td>
<td>WHMIS</td>
<td>6</td>
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<tr>
<td>TS1530</td>
<td>Standard First Aid</td>
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<tr>
<td>CK1000</td>
<td>The Professional Cook</td>
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<tr>
<td>CK1060</td>
<td>Kitchen Safety</td>
<td>10</td>
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<tr>
<td>CK1050</td>
<td>Hygiene and Sanitation Awareness</td>
<td>10</td>
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<tr>
<td>CK1150</td>
<td>Kitchen Tools and Equipment</td>
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<tr>
<td>CK1120</td>
<td>Weights and Measures</td>
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<tr>
<td>CK1126</td>
<td>Basic Cooking Methods and Principles</td>
<td>30</td>
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<tr>
<td>CK1130</td>
<td>Recieving and Storage</td>
<td>10</td>
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<tr>
<td>CK1231</td>
<td>Introduction to Baking</td>
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<tr>
<td>CK1236</td>
<td>Yeast Products</td>
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<tr>
<td>CK1241</td>
<td>Pies, Tarts, Flans and Fillings</td>
<td>30</td>
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<td>CK1245</td>
<td>Quick Breads</td>
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<td>CK1253</td>
<td>Basic Cakes</td>
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<tr>
<td>CK1255</td>
<td>Cookies and Squares</td>
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<tr>
<td>CK1258</td>
<td>Workplace Exposure</td>
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</tr>
<tr>
<td>AM 1100</td>
<td>Math Essentials</td>
<td>30</td>
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<tr>
<td>AM 1150</td>
<td>Cook Math Fundamentals</td>
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<tr>
<td>CM 2160</td>
<td>Communication Essentials</td>
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<td>SD 1760</td>
<td>Workplace Essentials</td>
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<td>MC 1060</td>
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<tr>
<td>&quot;CK1870&quot;</td>
<td>Specialty Cakes</td>
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<tr>
<td>&quot;CK1880&quot;</td>
<td>Specialty Pastries and Fillings</td>
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<tr>
<td>&quot;CK1890&quot;</td>
<td>Specialty Cookies, Squares and Quick Breads</td>
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<tr>
<td>&quot;CK1990&quot;</td>
<td>Specialty Yeast Raised Products</td>
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<tr>
<td>&quot;CK1910&quot;</td>
<td>Specialty Cold Desserts</td>
<td>60</td>
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<tr>
<td>&quot;CK1920&quot;</td>
<td>Specialty Hot Desserts</td>
<td>60</td>
</tr>
</tbody>
</table>

^For learners who have successfully completed the Cook certificate (Plan of Training as of March 2011) these courses will enable the learner to receive a Baker certificate.

**OUTCOMES**
1. Demonstrate safe work practices and personal protection.
2. Develop menus. Practice and maintain sanitary standards.

**ENTRANCE REQUIREMENTS**
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate

**INDUSTRIAL TRADES**

**Baker**

The Baker program offers training in how to prepare and bake breads, cakes, cookies, pastries, pies and other baked goods. Some of the duties include: weigh, measure and mix ingredients according to recipes and special customer instructions, cut and form dough, prepare fillings, use ovens to bake products, decorate baked goods and purchase, stock and rotate ingredients and supplies and ensure public health standards are met. The work environment is normally clean, well ventilated and lighted. Depending on the business, your day could start and end early. Good health, physical stamina and manual dexterity are assets that will help you in this profession.

**OUTCOMES**
1. Demonstrate safe work practices and personal protection.
2. Develop menus. Practice and maintain sanitary standards.

**ENTRANCE REQUIREMENTS**
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate

**EMPLOYMENT OPPORTUNITIES**
Graduates may find employment in the following areas:
- Specialty shops
- Hotels
- Restaurants
- Bakery manufacturers
- Self employed

3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades Comprehensive Arts and Science (Trades) Certificate

5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.
### COURSES

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
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<td>WHMIS</td>
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<td>TS1501</td>
<td>Shop Fundamentals</td>
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<tr>
<td>BR1101</td>
<td>Laying Brick to the Line</td>
<td>160</td>
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<tr>
<td>BR1110</td>
<td>Laying Block to the Line</td>
<td>90</td>
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<tr>
<td>BR1211</td>
<td>Mortar</td>
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<tr>
<td>BR1201</td>
<td>Veneer Walls</td>
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<tr>
<td>BR2301</td>
<td>Chimneys</td>
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<tr>
<td>BR1112</td>
<td>Drawing and Sketching</td>
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<tr>
<td>TS1300</td>
<td>Rigging</td>
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<td>BR1210</td>
<td>Load and Non-Load Bearing Walls</td>
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<tr>
<td>AM 1100</td>
<td>Math Essentials</td>
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<tr>
<td>AM 1110</td>
<td>Bricklayer Math Fundamentals</td>
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<td>CM 2160</td>
<td>Communication Essentials</td>
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<td>SD 1760</td>
<td>Workplace Essentials</td>
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<td>AP 1101</td>
<td>Introduction to Apprenticeship</td>
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<td>BR1501</td>
<td>Stone Facings</td>
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<td>BR1550</td>
<td>Restoration</td>
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<td>BR2311</td>
<td>Glass Block</td>
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<td>BR2401</td>
<td>Conventional Fireplaces</td>
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<td>BR2420</td>
<td>Rumford Fireplaces</td>
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<tr>
<td>BR1131</td>
<td>Introduction to CAD</td>
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<td>BR1401</td>
<td>Refractory Units</td>
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<tr>
<td>BR1600</td>
<td>Arches and Sculptured Masonry</td>
<td>80</td>
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</table>

### INDUSTRIAL TRADES

#### Bricklayer

This program is designed to provide the basic skills in laying block, brick and tile as well as fundamental skills in decorative masonry. Some of the duties include: interpret drawings and blueprints, and calculate, materials required, measure from an established starting point and construct corner first, using a plumb line and mason’s level to ensure each layer will be level from corner to corner, spread mortar over the base or previous layer, spread more mortar on one end of each brick to be laid, and lay the bricks into position, remove the excess mortar after the brick or other masonry material is in position, use a hammer and chisel or a masonry saw to cut bricks to fit as required. The work environment is often outdoors on scaffolding and physically demanding.

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment safely.
3. Perform routine work practices.
4. Assemble scaffolding.
5. Use mortars, grouts and other bonding agents.
6. Construct non-load bearing and load bearing walls and columns.

### ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

#### 1. High School

- High School Graduation

#### 2. Comprehensive Arts and Science (CAS) Transition

- Comprehensive Arts and Science (Transition) Certificate

### EMPLOYMENT OPPORTUNITIES

Graduates may find employment in the following areas:

- Masonry contractors
- Residential construction
- Commercial construction
- Industrial construction
This program offers training in custom made products. Cabinetmakers build and repair custom or production-type fixtures and furniture made of wood or wood substitutes. Some of the duties include: read specifications and drawings, make layouts and patterns, set up and operate woodworking equipment, cut, shape, mould and assemble components made of wood or wood substitutes, sand wooden surfaces and apply veneer, stain, polish or plastic laminates to finished surfaces. Cabinetmakers work indoors, generally in a shop environment. You may be exposed to high noise levels and chemicals from painting and stripping. Good eyesight, hand-eye co-ordination and manual dexterity, the ability to visualize a finished product from drawings, blueprints or other specifications are assets for this program. If you are considering this program you should enjoy creating things with your hands, developing specialized skills and working with a high degree of accuracy.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment safely.
3. Interpret engineering drawings.
5. Plan sequences of operations.
6. Prepare layout operations.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Furniture manufacturers
- Cabinet making shop
- Interior finishing firms
- Residential developers
Carpentry is a program which covers the use, care and operation of basic tools and machinery, building layout, form construction and framing, interior and exterior finish with emphasis on the National Building Code standards and energy efficient concepts. Some of the duties include: read and interpret blueprints, drawings and sketches to determine specifications and calculate requirements, prepare layouts on conformance to building codes, using measuring tools, measure, cut, shape, assemble and join materials made of wood or wood substitutes, build foundations, install floor beams, lay subflooring and erect walls and roof systems, fit and install trim items, such as doors, stairs, molding and hardware. To enjoy this work, you should have the ability to stand, crouch and kneel for long periods of time, good manual dexterity, balance for working on scaffolding, be able to solve math problems quickly and accurately and have the ability to get along with others and work as a team.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment safely
3. Interpret drawings and specifications.
4. Solve problems and keep a construction project on schedule.
5. Use various types of scaffolding.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
   High School Graduation

2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate

3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile or Business Related College Profile or Degree and Technical Profile. It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- General contractor
- Custom woodworking shops
- Building suppliers
This program offers training in the safe and effective operation of tandem trucks and tractor trailer units. Emphasis is placed on preventive maintenance, defensive driving, and fuel conservation. Some of the duties include: deliver cargo and materials, maintain radio or telephone contact with base or supervisor to receive instructions or be dispatched to a new location, maintain a truck log according to provincial and federal regulations, keep records of materials and products transported, cleans, inspects and services vehicle, perform trailer operations and demonstrating driving skills, particularly in extreme conditions, perform pre-trip, en-route and post trip vehicle inspections. Learners will be introduced to customer service skills, business and administrative skills as well as an opportunity to strengthen interpersonal skills. The program objectives are designed to train you as a professional driver with the ability to promote growth within the Truck and Transporting Industry. The program also offers certification in the Transportation of Dangerous Goods (TDG), Air Brakes (9A), WHMIS, First Aid, Powerline Hazards and Professional Driver Improvement Course (PDIC). There will be classroom, yard, off and on and highway training with low learner to instructor ratios. This program offers a three week (90 hour) work placement.

Students successfully completing the program qualify for a Class 1 license with Class 3 and 9A endorsements.

OUTCOMES
1. Demonstrate defensive driving techniques, proper economical vehicle operation, and emergency procedures.
2. Demonstrate knowledge of types of trucks, power trains, engines, drive lines, brake systems, tires and trailers.
3. Demonstrate techniques to drive on course roads, through town and on the Trans Canada Highway.
4. Demonstrate knowledge of proper freight handling procedures and methods of preparing and handling documentation connected with transfers of cargo and monies.
5. Demonstrate safe work practices and personal protection.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

Drivers License and Medical Requirements
i) Hold a valid Newfoundland and Labrador Class 5 driver’s licence.
ii) Minimum of 2 years driving experience
iii) Provide a current Driving Abstract record showing no more than 4 demerit points.
iv) Class 1 driver’s permit
v) Provide a satisfactory medical certificate in accordance with the Highway Traffic Act and meet the required vision standards. Certificate cannot be more than 6 months old.

Age Requirement
Must be 18 years of age or older.

Work Term Requirements
A drug test and/or certificate of conduct may be requested by the carrier prior to a work placement/employment.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Trucking companies
- Manufacturing and distribution companies
- Retail outlets
- Moving companies
The Construction/Industrial Electrician program trains you to install, alter and maintain electrical systems that are designed to provide heat, light, power, control, signals or fire alarms for all types of buildings and structures. Electricians work both indoors and outdoors. The work environment could range from clean open areas to dirty cramped spaces. Work outdoors may sometimes involve scaffolds. You will probably work a forty hour, five day work week and overtime when required. Some of the duties include: determine wiring layouts; cut thread, bend, assemble and install conduits and other types of electrical conductor enclosures and fittings; position, maintain and install distribution and control equipment such as switches, relays, circuit breaker panels and fuse enclosures; install, replace, maintain and repair electrical systems and related electrical equipment; test circuits to ensure integrity and safety. Completing the Construction/Industrial program opens opportunities in both the construction and industrial aspects of the trade. You should be a good communicator, have an aptitude for math, be able to work in high places, and have the ability to keep up to date with changing technology.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Analyze electrical theory and its application to lighting, power and control equipment.
4. Interpret instructions given in plans and specifications pertaining to electrical installations.
5. Demonstrate problem solving skills involving electrical systems.
6. Conduct trouble shooting to maintain electrical systems and equipment.

Note: This program may not be suitable for applicants who do not have normal color perception.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
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4. Comprehensive Arts and Science (CAS) Trades Certificate
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Residential electrical companies
- Industrial electrical companies
- Mining
- Pulp and Paper
- Oil and Gas

CERTIFICATE
- Red Seal Certification
- One year
- September start
- Bay St. George, Bonavista, Burin, Carbonear, Corner Brook, Happy Valley-Goose Bay, Labrador West, Seal Cove and St. Anthony Campuses

INDUSTRIAL TRADES
Construction/Industrial Electrician

COURSES

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS1520</td>
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<td>TS1530</td>
<td>Standard First Aid</td>
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<td>ER1100</td>
<td>Rigging</td>
<td>30</td>
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<td>ER1110</td>
<td>Hand Tools</td>
<td>15</td>
</tr>
<tr>
<td>ER1121</td>
<td>Power Tools</td>
<td>24</td>
</tr>
<tr>
<td>ER1131</td>
<td>Fasteners</td>
<td>15</td>
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<td>ER1140</td>
<td>DC Theory</td>
<td>30</td>
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<td>ER1151</td>
<td>Series and Parallel DC Circuits</td>
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</tr>
<tr>
<td>ER1160</td>
<td>Codes</td>
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<tr>
<td>ER1170</td>
<td>Voltage Drop &amp; Power Loss</td>
<td>30</td>
</tr>
<tr>
<td>ER1180</td>
<td>Single Phase Theory</td>
<td>60</td>
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<tr>
<td>ER1190</td>
<td>Three Phase Theory</td>
<td>30</td>
</tr>
<tr>
<td>ER1201</td>
<td>Drawings, Schematics &amp; Specifications</td>
<td>30</td>
</tr>
<tr>
<td>ER1220</td>
<td>Conduit, Tubing and Fittings</td>
<td>30</td>
</tr>
<tr>
<td>ER1230</td>
<td>Conductors and Cables</td>
<td>45</td>
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<tr>
<td>ER1241</td>
<td>Fundamental Wiring</td>
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<td>ER1250</td>
<td>Protective Devices</td>
<td>30</td>
</tr>
<tr>
<td>ER1261</td>
<td>Transformers</td>
<td>60</td>
</tr>
<tr>
<td>ER1270</td>
<td>Single Phase Service Entrance</td>
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<tr>
<td>ER1341</td>
<td>Fire Alarms</td>
<td>20</td>
</tr>
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<td>Electric Heating Systems &amp; Controls</td>
<td>30</td>
</tr>
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<td>ER1370</td>
<td>Distribution Equipment</td>
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<td>Safety Practices</td>
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<td>ER2000</td>
<td>Raceway, Wireways and Busways</td>
<td>30</td>
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<td>Troubleshooting Techniques</td>
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<td>Workplace Exposure</td>
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<td>Math Essentials</td>
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<td>CM 2160</td>
<td>Communication Essentials</td>
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<td>Workplace Essentials</td>
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<td>Computer Essentials</td>
<td>15</td>
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<td>AP 1100</td>
<td>Introduction to Apprenticeship</td>
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<tr>
<td>ER2010</td>
<td>Lighting and Controls</td>
<td>30</td>
</tr>
<tr>
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<td>Three Phase Motors</td>
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<td>Control Devices</td>
<td>30</td>
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<td>ER2050</td>
<td>Motors, Starters and Controllers</td>
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<tr>
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<td>Single Phase AC Motors</td>
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<td>Power Supply and Rectifiers</td>
<td>50</td>
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<td>Signaling and Communications Systems</td>
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<tr>
<td>ER2161</td>
<td>Solid State Drives</td>
<td>20</td>
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<tr>
<td>ER2240</td>
<td>DC Generators</td>
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<tr>
<td>ER2250</td>
<td>AC Generators</td>
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<td>ER2261</td>
<td>Emergency Stand-by Units</td>
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<td>Emergency Lighting Systems</td>
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<td>Distribution System Conditioning</td>
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<td>DC Motors and Controls</td>
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<td>15</td>
</tr>
<tr>
<td>ER1131</td>
<td>Advanced Drawings, Schematics &amp; Specifications</td>
<td>30</td>
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<tr>
<td>ER2061</td>
<td>Central Heating Units</td>
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<td>Application of Troubleshooting Techniques</td>
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<td>PLC Fundamentals</td>
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<td>Furnace Controls</td>
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<td>Refrigeration and Air Conditioning Controls</td>
<td>15</td>
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<td>Fiber Optics</td>
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<td>Heat Pumps and HVAC Electrical Systems</td>
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<td>High Voltage Wiring</td>
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<td>Explosion Proof Equipment</td>
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<td>Security Systems</td>
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<td>Transistors</td>
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<td>Digital Electronics</td>
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<td>Operational Amplifiers</td>
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<td>Analog Devices</td>
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<td>Hydraulic Circuits and Controls</td>
<td>15</td>
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<td>Boiler Control</td>
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<td>ER2382</td>
<td>Vibration</td>
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</tr>
<tr>
<td>ER2520</td>
<td>Emerging Technologies</td>
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CERTIFICATE
• Red Seal Certification
• One year
• Start date varies
• Bay St. George, Burin, Prince Philip Drive and Seal Cove Campuses

COURSES

<table>
<thead>
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<td>The Professional Cook</td>
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<td>Food Presentation</td>
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<td>Kitchen Safety</td>
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<td>Hygiene and Sanitation Awareness</td>
<td>10</td>
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<td>Kitchen Tools and Equipment</td>
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<td>CK1120</td>
<td>Weights and Measures</td>
<td>10</td>
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<tr>
<td>CK1126</td>
<td>Basic Cooking Methods and Principles</td>
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<td>CK1130</td>
<td>Receiving and Storage</td>
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<td>CK1146</td>
<td>Rices, Grains and Pulses</td>
<td>18</td>
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<td>Pastas and Dumplings</td>
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<td>CK1156</td>
<td>Stocks and Glazes</td>
<td>24</td>
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<td>Soups</td>
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<td>Principles of Meat Cooking and Handling</td>
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<td>Poultry</td>
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<td>Fish and Seafood</td>
<td>60</td>
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<td>Salad and Salad Dressings</td>
<td>35</td>
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<td>Sandwiches</td>
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<td>Dairy Products</td>
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<td>Breakfast Cookery</td>
<td>30</td>
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<td>CK1231</td>
<td>Introduction to Baking</td>
<td>18</td>
</tr>
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<td>CK1236</td>
<td>Yeast Products</td>
<td>24</td>
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<td>CK1241</td>
<td>Pies, Tarts, Flans and Fillings</td>
<td>30</td>
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<td>Quick Breads</td>
<td>10</td>
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<td>Basic Cakes</td>
<td>30</td>
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<td>Cookies and Squares</td>
<td>20</td>
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<td>Vegetables and Fungi</td>
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<td>Fruits</td>
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</tr>
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<td>Potatoes</td>
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<td>Sauces</td>
<td>30</td>
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<td>Stuffings</td>
<td>6</td>
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<td>CK1450</td>
<td>Beef and Pork</td>
<td>60</td>
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<td>30</td>
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<td>Cook Math Fundamentals</td>
<td>30</td>
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<td>CM2160</td>
<td>Communication Essentials</td>
<td>45</td>
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<td>Workplace Essentials</td>
<td>45</td>
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<td>Computer Essentials</td>
<td>15</td>
</tr>
<tr>
<td>AP1101</td>
<td>Introduction to Apprenticeship</td>
<td>15</td>
</tr>
</tbody>
</table>

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Develop menus.
3. Practice and maintain sanitary standards.
4. Develop production procedures.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate
3. Adult Basic Education
4. Comprehensive Arts and Science (CAS) Trades Certificate
5. Mature Student Status

Graduates may find employment in the following areas:
• Hotels
• Restaurants
• Catering firms
• Cafeterias
• Health care institutions
• Specialty food outlets
• Work camps

INDUSTRIAL TRADERS
Cook

This program provides training in the preparation and presentation of a variety of food for a variety of groups. You may have a small group in a private home or you may have a large group in a convention center. As a cook, you may work under pressure and the volume of work can be considerable. Working shifts that include weekends and holidays can be expected. Some of the duties include: study menus to estimate food requirements and obtain the necessary food from storage or suppliers, wash, peel and cut vegetables; prepare, season and cook foods such as soups, salads, meat, fish, gravies, vegetables, desserts, sauces and casseroles and consider nutrition value, food costs and sanitation. You should have good basic math skills, the ability to stand for long periods of time, be flexible and be able to work with others.

4. Comprehensive Arts and Science (CAS) Trades Certificate
5. Mature Student Status

Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.
Male and female hairstylists cut and style hair to suit their clients’ face and lifestyle. You will probably work a forty-hour, five-day week, however, longer hours may be worked during peak times. As a hairstylist, you would cut, trim, color, wave and style hair, wigs and hairpieces; shave, trim and shape beards and moustaches; suggest appropriate hairstyles. You should be patient, be able to stand all day, have the ability to keep up with new hair fashions, supplies, equipment and technology and have a professional appearance.

Note: This program may not be suitable for persons with allergies and/or respiratory problems. Anyone with either of these conditions should check with a doctor to determine medical suitability.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Demonstrate the skills required to style, cut and color hair.
4. Prepare clients for services.
5. Perform reception duties.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find work in the following areas:
- Hair salons
- Hair shows
- Sales representative
CERTIFICATE
• Red Seal Certification
• One year
• Start date varies
• Bay St. George, Happy Valley-Goose Bay and Placentia Campuses

INDUSTRIAL TRADES
Heavy Duty Equipment Technician

This program is designed to provide you with the skills and knowledge required for employment in the field of Heavy Duty Equipment Technician. The work environment varies considerably from one job to another. It could be a heated garage or outdoors in all types of weather conditions. The duties of a technician do vary however, some of the more general duties are: interpret work orders and technical manuals; keep equipment clean, lubricated and maintained; diagnose faults or malfunctions; adjust equipment and repair or replace defective parts, components or systems; test repaired equipment for proper performance and ensure that the work done meets manufacturers specifications and legislated regulations. Good eyesight, hearing and sense of smell to diagnose problems are assets for this program.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use hand tools and equipment.
3. Analyze and process information.
4. Diagnose and repair engines and engine support systems.
5. Diagnose and repair steering, suspension and brake systems.
6. Diagnose and repair hydraulic and pneumatic systems.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate
   Comprehensive Arts and Science and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education Level III Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile).
   It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
• Repair shops
• Maintenance companies
• Transportation companies
• Construction companies
This program provides training in the safe and effective operation of Heavy Duty Earth Moving Equipment. You will learn the theory of operation and preventive maintenance and develop the necessary practical skills to become proficient in the use of three of the six available categories of machinery. Operators work outdoors in all kinds of weather however, the cab may be air conditioned and have dust control.

**EQUIPMENT CATEGORIES**

- Tractor/Bulldozer
- Front End Loader
- Grader
- Dump Truck (Off-Highway and Tandem)
- Tractor/Loader/Backhoe
- Excavator

**OUTCOMES**

1. Demonstrate knowledge of machine capabilities and industry expectations.
2. Develop servicing procedures and techniques to maximize the life span of construction equipment.
3. Demonstrate skills in basic machine maneuvering, control and operation in work simulated projects.
4. Demonstrate knowledge of standards for road construction as well as other municipal projects.
5. Demonstrate safe work practices and personal protection.

**ENTRANCE REQUIREMENTS**

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate

### 3. Adult Basic Education

- Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
  
  i. Mathematics MA3107A, MA3107B, MA3107C
  ii. Science 3101, 3102, 3103

### 4. Comprehensive Arts and Science (CAS) Trades

- Comprehensive Arts and Science (Trades) Certificate

### 5. Mature Student Status

Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

### 6. Drivers License and Medical

- Students selecting the Equipment Category – Dump Truck (Tandem), must have a valid Newfoundland and Labrador Class 5 driver’s license for one year prior to the commencement of the program.
- Satisfactory medical report for Class 03 is required by the Department of Works, Services and Transportation.

**EMPLOYMENT OPPORTUNITIES**

Graduates may find employment in the following areas:

- General contractors
- Paving companies
- Pipeline companies
- Logging
- Mining
- Landscaping
The Heritage Carpentry program was developed to train carpenters to work on heritage restoration projects. This program offers contemporary construction carpentry training along with training in the traditional skills that were used to construct the wood frame buildings of yesteryear. In addition, the program also provides background information on architectural styles in Atlantic Canada and Quebec. Although the program has a heritage orientation, it is fully articulated with the Red Seal Construction Carpentry program and students may, if they wish, continue on to complete their apprenticeship and become journeypersons in Construction Carpentry.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret drawings and specifications.
4. Demonstrate architectural styles of Atlantic Canada and Quebec.
5. Use various types of scaffolding.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
   High School Graduation

2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate

3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- General contractors
- Custom woodworking shops
- Contractors specializing in heritage carpentry
### Industrial Mechanic (Millwright)

The Industrial Mechanic (Millwright) program offers the training required to become a mechanic for stationary industrial machinery. Duties on a typical job may include: read diagrams and schematic drawings and service manuals to determine work procedures; operate rigging equipment and dollies to move heavy machinery and parts; fit bearings, align gears and shafts, attach motors and connect couplings and belts to precise tolerances; align and test equipment and make the necessary adjustments; perform preventive and operational maintenance using procedures such as vibration analysis, and repair or replace defective parts when necessary; service and repair hydraulic, pneumatic and programmable logic controls; tack welding.

#### OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret drawings, plans, and be able to layout and develop projects according to specifications.
4. Perform assigned tasks following quality and production standards required in industry.
5. Plan for installation and maintenance of components and systems.

#### ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate
3. **Adult Basic Education**
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
     - Mathematics MA3107A, MA3107B, MA3107C
     - Science 3101, 3102, 3103
4. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate
5. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

#### EMPLOYMENT OPPORTUNITIES
Graduates may find work in the following areas:
- Mining
- Forestry
- Oil and Gas
- Private companies
- Manufacturing
- Government maintenance departments
Instrumentation and Control Technician

Instrumentation involves automation in the production of various commodities. Complex process control and measurement systems such as those found in the oil and gas industry, chemical plants, food processing operations, and the pulp and paper industry require sensitive and accurate instruments. The technician repairs, maintains, calibrates, adjusts, and installs industrial measuring and controlling instrumentation. This instrumentation makes sure that all machines in a plant are safe and running correctly. They may regulate the water flow in equipment or check the air quality in a mine. The operation and safety of the plant relies on these instruments so your role is very important as you would constantly monitor and calibrate these instruments. Duties of a technician are: consulting manuals, reading and interpreting circuit diagrams, blueprints and schematics, inspecting and testing the operation of instruments and systems to diagnose faults using testing devices, writing maintenance reports, repairing and adjusting system components or removing and replacing defective parts, calibrating components and instruments, performing scheduled preventative maintenance work, installing control and measurement instruments on existing or new plant equipment and observing safety in accordance with government and company standards.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret drawings, codes, standards and government regulations.
3. Use tools and measuring equipment.
5. Use and maintain analyzers.
6. Use and maintain various types of field mounted equipment.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following educational prerequisites:

1. High School
   - High School Graduation

2. Comprehensive Arts and Science (CAS) Transition
   - Comprehensive Arts and Science (CAS) Transition Certificate

3. Adult Basic Education
   - Adult Basic Education (Level III) Graduation with General College Profile or Degree and Technical Profile.
   - It is strongly recommended that courses include the following:
     - Mathematics MA3107A, MA3107B, MA3107C
     - Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   - Comprehensive Arts and Science and (Trades) Certificate

5. Mature Student Status
   - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
With industry becoming increasingly automated, instrumentation technicians are needed virtually anywhere there are control and metering systems. They are employed in the following industries:

- Pulp and Paper Processing
- Hydro Power Generation
- Mining, Petrochemical, and Natural Gas
- Industrial and Commercial Manufacturing
- Industrial Construction
- Industrial Instrument Servicing
Certificate
- Red Seal Certification
- One year
- September start - Placentia Campus
- To Be Determined - Baie Verte Campus

COURSES

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Block 4 Advanced Level

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OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret specifications, charts, drawings or sample parts to determine the machining operation required.
3. Select workplace materials.
4. Calculate dimensions and tolerances, and prepare sketches if necessary.
5. Set up and operate tools.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Manufacturing
- Mining
- Aviation
- Machine shops
- Pulp and Paper
- Private shops

INDUSTRIAL TRADES
Machinist

The Machinist program is designed to train individuals in the knowledge, skills, and experience necessary to set up and operate precision metal cutting and grinding machines such as lathes, milling machines, drills, shapers, boring mills and grinders. A variety of equipment is used to manufacture, install, operate, adjust and repair machine tools and other machines in common use. Duties of a machinist include: study specifications, charts, drawings or sample parts to determine the machining operation to be performed, calculate dimensions and tolerances, and prepare working sketches if necessary, set up and operate tools, which may be computer numerically controlled, to perform precision machining operations. Work could either be in job shops or production shops. In job shops, you will make a wide variety of repair parts for different types of machinery and industrial equipment in different situations. In production shops, you will produce parts using mass production methods including CNC machining and other tools.

3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.
CERTIFICATE
- One year
- Start date varies
- Burin Campus

COURSES
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<td>WD1600</td>
<td>Oxy-Fuel Cutting, Welding, Heating and Gouging</td>
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<td>SMAW – Stick Weld All Positions</td>
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<td>WD1640</td>
<td>Basic Panel Lead Development</td>
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<td>Basic Parallel Line Development</td>
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Block 2 | Entry Level |
| WD1440 | GMAW (Gas Tungsten Arc Welding) | 15 |
| WD1450 | Basic Triangulation Layout | 30 |
| WD1460 | Basic Plate Development | 120 |
| WD1470 | Basic Assembly and Fitting | 40 |
| AM1100 | Math Essentials | 30 |
| AM1230 | Metal Fabrication Math Fundamentals | 30 |
| CM2160 | Communication Essentials | 45 |
| SD1760 | Workplace Essentials | 45 |
| AC1060 | Computer Essentials | 15 |
| AP1101 | Introduction to Apprenticeship | 15 |

Block 3 | Advanced Level |
| SF1700 | Truss and Girder Fabrication | 20 |
| SF1710 | Advanced Radial Layout | 40 |
| SF1720 | Advanced Triangulation Layout | 30 |
| SF1730 | Advanced Assembly and Fitting | 60 |
| SF1740 | Advanced Plate Development | 80 |

### COURSES

### OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret sketches, shop and fabrication drawings.
3. Use and maintain tools.
4. Prepare work area and equipment schedule.
5. Prepare final products for finish.

### ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation
   - **Comprehensive Arts and Science (CAS) Trade**

2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transitions) Certificate

### EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Ironworking
- Manufacturing
- Heavy equipment
- Construction
- Mining
- Oil and Gas
- Aviation
- Ship building
- Welding shops

### Metal Fabricator (Fitter)

This program is designed to prepare you for employment opportunities in the field of Structural Fitting. Metal fabricators make and repair parts used in the construction of buildings, bridges, tanks, towers, boilers, pressure vessels and other structures and products. Some of your duties include: lay out, cut and fabricate structural steel, study engineering drawings and blueprints to determine the materials required and plan the sequence of tasks to cut the metal most efficiently, construct patterns and templates as guides for layouts, rig, and hoist and move materials to storage areas or within the worksite assembly and fit metal sections and plates to form complete units or subunits using tack welding, bolting, riveting or other methods, install fabricated components in the final product.

### 3. Adult Basic Education
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
     i. Mathematics MA3107A, MA3107B, MA3107C
     ii. Science 3101, 3102, 3103

### 4. Comprehensive Arts and Science (CAS) Trades
   - Comprehensive Arts and Science (Trades) Certificate

### 5. Mature Student Status
   - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.
### COURSES

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<tr>
<td>AP 1101</td>
<td>Introduction to Apprenticeship</td>
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</table>

* Completing WT 1520 enables the learner to be exempted from GT 1190

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Perform measurement and layout.
4. Use cutting and welding equipment.
5. Prepare for installation and maintenance of components and systems.
6. Relate to working and learning in an industrial environment.

### ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - Graduation Certificate with a 60% average in the following (or equivalent):
     - Math: MA1040, MA1041
     - Two Science courses chosen from one of the following three combinations:
       - Biology: BL1020, BL1021
       - Chemistry: CH1030, CH1031
       - Physics: PH1050, PH1051

2. **Industrial Trades**
   - Mining Technician or an Industrial Mechanic (Millwright) certificate. This gives you the option of working as a Mining Technician or an Industrial Mechanic (Millwright).

### EMPLOYMENT OPPORTUNITIES

You may find employment as part of the Operations and Maintenance Teams in a mining environment or as an Industrial Mechanic (Millwright) apprentice.

**Education Requirements**

Applicants for Adult Basic Education (Level III) graduation with Comprehensive Arts and Science (CAS) Transition Certificate with the following courses:

- Math: MA1040, MA1041
- Two Science courses chosen from one of the following:
  - Biology: BL1020, BL1021
  - Chemistry: CH1030, CH1031
  - Physics: PH1050, PH1051
CERTIFICATE
• Red Seal Certification
• 26 weeks
• Start date varies
• Bay St. George Campus

COURSES

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<tr>
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<td>Mobile Crane Operation Safety</td>
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<tr>
<td>MC 1060</td>
<td>Computer Essentials</td>
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</tbody>
</table>

This program exposes you to the safe and efficient operation of Mobile Cranes. Some of the duties include: service and operate booms mounted on crawler or wheeled frames as well as travelling, fixed or climbing type hoisting equipment with a vertical mast or tower and a jib, drive the crane to the job site, right the machine up (pin the boom and pendent cables and pull the host cable in preparation for operation), set up the machine for the lift (make it level) using blocking and leveling materials. Numerous training scenarios are set up that will test your ability to work under stressful conditions and face safety hazards that will be experienced in industry.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Assess site hazards.
3. Operate equipment safely.
4. Recognize and evaluate conditions which are potentially hazardous to safe machine operation.
5. Interpret and apply load chart and related documentation.
6. Interpret and apply visual and audio communication.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
   - High School Graduation

2. Comprehensive Arts and Science (CAS) Transition
   - Comprehensive Arts and Science (Transition) Certificate

3. Adult Basic Education
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   - Mathematics MA3107A, MA3107B, MA3107C
   - Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   - Comprehensive Arts and Science (Trades) Certificate

5. Mature Student Status
   - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

6. Drivers License and Medical
   - A valid Newfoundland and Labrador driver’s license – minimum of full Class 5. Must be held for a minimum of 1 year.
   - Department of Transportation Medical for a Class 3 license including colour perception, visual acuity and hearing tests. A depth perception test is also required.

EMPLOYMENT OPPORTUNITIES
You may find employment in a variety of occupational settings: construction, industrial, mining, cargo handling and railway companies.

Graduates may find employment in the following areas:
- Construction
- Industrial
- Mining
- Cargo
- Railways
This program is designed to assist you in developing sufficient basic skills and knowledge to enter the labor force as an apprentice Mechanic in Motor Vehicle Body Repairer (Metal and Paint). Some of the duties include: repair and replace damaged motor vehicle structures and body parts, interior and exterior finishes, hammer out dents, buckles and other defects using blocks and hammers, operate soldering equipment or use plastic filler to fill holes, dents and seams, remove damaged fenders, panels and grills using wrenches and cutting torch and both to weld replacement parts into place, straighten bent frames using frame and underbody pulling and anchoring equipment, file grind and same repaired body surfaces using hand and power tools, mask and tape auto body surfaces in preparation for painting.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment.
3. Determine the type of paint; plan refinishing system; remove, prepare, seal and mask; apply coatings to vehicle.
4. Demonstrate correct use of chemicals within the shop environment.
5. Compute cost estimates for completing repairs.
6. Manage customer needs, complaints, questions and special challenges.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Garages
- Service Stations

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**INDUSTRIAL TRADES**

**Motor Vehicle Body Repairer (Metal and Paint)**

- Red Seal Certification
- One year
- September start
- Prince Philip Drive Campus

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**COURSES**

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<td>Damage Analysis and Estimating Costs</td>
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Certificate
- One year
- September start
- Port aux Basques Campus

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Non-Destructive Testing Technician graduates are employed to accurately test items for potential flaws/failures using the following procedures: Liquid Penetrant Inspection, Magnetic Particle Inspection, Ultrasonic’s Testing and Radiography Testing.

The Non-Destructive Testing Technician program prepares learners for potential employment in areas from oil and gas, aerospace, nuclear, automotive, welding and steel production to other industrial sectors. The program will prepare you to write the National Exams that are required by the Canadian General Standards Board.

Graduates are involved with the accurate testing of materials and equipment to ensure the safe operation of various industrial environments.

Note:
1. There are specific vision requirements that are required by the Canadian General Standards Board prior to completing final certification in each discipline. Please refer to the following link for the requirements: http://www.nrcan-rncan.gc.ca/mms-smm/ndt-end/eli-adm/vis-vis-eng.htm
2. The Canadian General Standards Board exam fees are not included in tuition/supply fees.

SUBJECT DESCRIPTIONS
Magnetic Particle Inspection (MPI) trains students to use small magnetic particles (i.e. iron filings) to detect flaws in components. For this method to be used, the component must be made of ferromagnetic material such as iron, nickel, cobalt, or some of their alloys.

Liquid Penetrant Inspection (LPI) trains students to recognize surface flaws in components that appear as a result of capillary action. Flaws become apparent when a colored or fluorescent dye bleeds out of the component to reveal a crack in its surface.

Ultrasonic Testing (UT) trains students to use high frequency sound energy to conduct examinations and make measurements in materials to determine surface or internal cracks or flaws in the materials.

Radiography Testing (RT) trains students to send radioactive energy through a material enabling a negative (Photo) to be produced for that material illustrating internal flaws or cracks.

OUTCOMES
1. Perform Liquid Penetrant Inspection.
2. Perform Magnetic Particle Inspection.
3. Carry out Ultrasonic Inspection.
4. Carry out Radiographic Inspection.
5. Demonstrate knowledge of Quality Assurance, Control Documentation and Reporting Systems for various industrial sectors.
6. Develop attitudes conducive to the successful application of skills on the job.
7. Develop an awareness and concern for good safety practices in the work place.
8. Develop academic skills and knowledge in mathematics, communications and science.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING
Safety glasses, safety boots, and laboratory coats and gloves (latex or nitrile).

LABORATORY
Time will be split between practical applications and the classroom throughout the program to assist the trainees in developing self-confidence/skills to carry out Non-Destructive Testing certification exams.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
• Oil and Gas
• Construction
• Aviation
Certificate
- Red Seal Certification
- One year
- To Be Determined
- Seal Cove Campus

INDUSTRIAL TRADES
Oil Heat System Technician

This program is designed to provide a course of study that will prepare you for employment in the residential and commercial heating industry. Some of the duties include: install and maintain oil and wood heating systems in residential and commercial buildings, read and interpret drawings or specifications to determine work to be performed, lay out oil burner heating system components and assemble components using hand a power tools, install oil burner components such as thermostats, motors, piping and safety devices, and connect to fuel supply, ventilation and electrical system, test installed unit and adjust controls for proper functioning, troubleshoot and repair malfunctioning oil burners, and their components and controls, perform scheduled maintenance service on oil and solid fuel heating systems.

OUTCOMES
1. Use and maintain tools, materials and equipment required for the maintenance and installation of heating systems (oil, and solid fuels).
2. Test and adjust residential heating systems.
3. Install residential heating systems.
4. Interpret trade blueprint schematics.
5. Recognize and practice good safety practices.
6. Demonstrate with confidence the knowledge and skills required for an entry level apprentice.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile or Business Related College Profile or Degree and Technical Profile. It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Heating companies
- Service companies
Certificate
- Red Seal Certification
- One year
- September start
- Bonavista Campus

INDUSTRIAL TRADES
Plumber

This program prepares you to install and repair pipes, fixtures and other plumbing equipment for water distribution and waste water disposal in residential, commercial and industrial buildings. Some of your duties include: read blueprints, drawings and specifications to determine layout of plumbing system, water supply network and waste and drainage systems, install, repair and maintain domestic, commercial or industrial plumbing fixtures and systems, locate and make positions for pipe connections, passage holes and fixtures in walls and floors, cut opening in walls and floors to accommodate pipe and pipe fittings, measure, cut, bend and thread pipes using hand and power tools or machines, join pipes using couplings, clamps, screws, bolts, cement or soldering, brazing and welding equipment, test pipes for leaks using air and water pressure gauges.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Plan work activity.
3. Use and maintain hand and portable power tools and equipment.
4. Interpret plans and specifications and prepare layouts and working drawings.
5. Prepare components and fixtures according to specifications and assume responsibility for the end product.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Construction contractors
- Plumbing repair shops

COURSES

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<th>Block 1</th>
<th>Entry Level</th>
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<td>WHMIS</td>
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<td>Compressed Air and Vacuum Systems</td>
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CERTIFICATE
• One year
• September Start
• Corner Brook Campus

COURSES
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Power Engineers, Power Plant or Boiler Operators or Operating, Steam and Stationary Engineers, are some of the descriptions that summarize a technically skilled professional who is responsible for the safe operation and maintenance of equipment such as pumps, gas compressors, generators, motors, boilers, steam turbines, air conditioning systems, heat exchangers and refrigeration equipment. Your duties are: to ensure that safety codes and other applicable regulations are followed, use computerized systems to control, start, shut down and track the operation of boilers and related equipment, or use automatic or manual controls, monitor alarms, gauges and other instruments associated with plant operations, trouble shoot and take corrective action to prevent equipment or system failures, isolate and lock out equipment mechanically and electrically for inspection and repair, ensure that equipment and processes operate at maximum efficiency, take chemical test or boiler water and other process samples, interpret them and determine appropriate chemical treatments, assist in the development of operation, maintenance and safety activities, investigate and report on safety related accidents or incidents, write reports about plant operation.

Upon successful completion of the program you will write an Inter Provincial Certification Exam for Power Engineer, 4th Class that is conducted by the Industrial Training division of the Department of Education.

With appropriate work experience, plus additional education, you can successfully obtain the highest certification level of 1st Class Power Engineer. It is your choice to pursue your level of qualification. The Department of Education has adopted the Standardization of Power Engineers Examination Committee (SOPEEC) Regulations as the framework to govern writing of Power Engineering exams. Power Engineering is not a Red Seal Program but is similar in that a combination of hours worked and education enables you to progress to a higher level.

OUTCOMES
1. Develop and practice proper safety procedures.
2. Demonstrate problem solving skills and good work practices.
3. Verify that equipment and processes operate at maximum efficiency.
4. Write a daily log reflecting the operations, maintenance and safety procedures for the day.
5. Identify and lock out equipment that requires inspection or repair.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas;
• Municipal buildings
• Provincial buildings
• Federal buildings
• Health care institutions
• Educational institutions
• Manufacturing
• Mining
• Fishery
• Pulp and Paper
• Oil and Gas
Certificate
- Red Seal Certification
- One year
- September start
- Seal Cove and Happy Valley-Goose Bay Campuses

COURSES

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The Powerline Technician (Operating) program will prepare you to build and repair overhead and underground power lines used to conduct electricity from generating plants to the customer. To accomplish this you will perform the following duties: erect and maintain steel, wood or concrete poles, towers and guy wires, install, maintain and repair overhead and underground power lines and cables, insulators, conductors, lightning arrestors, switches, transformers, street lighting and other associated equipment, splice, solder and insulate conductors and related writing to connect power distribution and transmission networks. When we do experience a power disturbance, it will be you who has to locate the source of the problem and replace or repair the defective power lines and accessories. Strenuous physical dexterity is required for this program. Employers will normally demand all applicants to undergo a physical capabilities assessment prior to hiring.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret occupational documents.
3. Use and maintain tools and equipment.
4. Use and maintain electrical distribution systems and their equipment.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

Acquisition of a class 3 drivers license is required by many employers upon hire. It is advisable for potential students to verify that they meet the licensing requirements of a class 3 license with motor registration when applying for this program.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Utility companies
- Private contractors

Industrial Trades
Powerline Technician (Operating)
COURSES

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Process Operator training is essential for safe, incident-free startup and operation of plant facilities. The process operator emphasizes the safety requirements and hazards associated with material being processed. The operator will also deal with environmental issues. The program will focus on consistent and efficient plant operation and the importance of meeting both production requirements and product quality specifications while operating the process as efficiently as possible. Some of the duties include: monitor and control plant operations, constantly review the operation of the plant, maintain adequate records of key production variables such as production, volume, yield, consumption of chemicals on a daily/weekly/monthly basis, sample and test process, and take appropriate action when required. Process operators have good hand-eye coordination, vision, hearing and manual dexterity, strong communication skills and are able to work well with others in a team environment.

OUTCOMES
1. Demonstrate positive attitudes and behaviors.
2. Evaluate and control plant operations
3. Create and maintain adequate records as required
4. Demonstrate safe work practices and personal protection

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate

3. **Adult Basic Education**
   - Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
     i. Mathematics MA3107A, MA3107B, MA3107C
     ii. Science 3101, 3102, 3103

4. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate

5. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Mining
- Oil and Gas
- Pulp and Paper
- Food and Beverage Production
- Natural Gas Processing
COURSES

Block 1  Entry Level  Hrs
RF1310 Occupational Health and Safety  6
RF1520 WHINS  6
RF1530 Standard First Aid  14
RF1600 Safety Orientation  12
RF1700 Hand/Power Tools and Fasteners  20
RF1210 Tube, Pipe, Fittings, Soldering and Brazing  40
RF1220 Refrigeration Fundamentals  80
RF1230 Refrigeration Tools and Instruments  35
RF1240 Refrigerants, Oils and Refrigerant Management  35
RF1250 Refrigeration System Valves and Accessories  35
RF1260 Leak Testing, Evacuation and Charging  30
RF1270 Electrical Fundamentals  40
RF1280 Single and Three Phase Motor Fundamentals  30
RF1310 Electrical Components  20
RF1320 Control Fundamentals  30
RF1330 Air Conditioning Fundamentals  15
RF1340 Rigging Techniques  20
RF1350 System Analysis with Pressure Enthalpy Diagrams  35
RF1360 Compressors  30
RF1370 Condensers  20
RF1380 Evaporators  25
RF1390 Metering Devices  30
RF1400 Automatic Flow Controls and Application  30
RF1410 System Ancillary Components  25
RF1440 Refrigerant Recovery and Recycling Procedures  10
RF1450 Refrigeration and A/C Installation 1  30
RF1460 Troubleshooting Techniques  20
RF1470 Industry and Relevant Codes  15
RF1480 Control Circuits and Wiring Diagrams  30
RF1490 Motor Controls, Relays and Transformers  30
RF1510 Air Conditioning Equipment  20
RF1520 Refrigeration Load Calculations  30
AM1100 Math Essentials  30
AM1290 Refrigeration Math Fundamentals  30
CM2160 Communication Essentials  45
SD1760 Workplace Essentials  45
HC1660 Computer Essentials  15
AP1101 Introduction to Apprenticeship  15

Block 2  Advanced Level  Hrs
RF1420 Evaporative Condensers and Cooling Towers  20
RF1430 Fluid Dynamics and Pumps  15
RF1500 Refrigeration Equipment  30
RF1530 Refrigeration System and Pipe Design  30
RF1540 Refrigeration and A/C Installation II  30
RF1550 System Capacity Control  30
RF1560 Compressor Diagnostics and Repair  20
RF1570 Troubleshooting Systems and Their Components  20
RF1640 Understanding, Interpreting and Troubleshooting Wiring Diagrams  30
RF1760 Basic Electronics  15

Block 3  Advanced Level  Hrs
RF1580 Psychrometrics  25
RF1590 Air Conditioning System Design  25
RF1600 Heat Pump Systems  30
RF1610 Fans, Mechanical Drives and Air Filtration  25
RF1620 Air Measuring Instruments and System Balancing  15
RF1630 Control Applications and Components  25
RF1660 Air Conditioning Load Calculations  15
RF1670 Fuel Systems and Design  25
RF1680 Humidification and Dehumidification Equipment  15
RF1690 Installation of Air Conditioning Equipment  20
RF1700 Air Conditioning System Troubleshooting  20

Block 4  Advanced Level  Hrs
RF1740 Industrial System Components  25
RF1710 Energy Management and Indoor Air Quality  20
RF1720 Chillers and Chiller Systems  30
RF1730 Multiplex Refrigeration Systems  35
RF1740 Specialty Systems (Ultra-Low, Cryogenic)  15
RF1750 Control Application and Components  15
RF1770 Wiring Diagrams  30
RF1780 Specialized Control Systems  30
RF1790 Industrial Refrigeration Systems  40

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret mechanical and architectural drawings, acts, codes, standards, legislation, and service and operating manuals.
3. Use and maintain tools and equipment.
4. Arrange for refrigeration and air conditioning installation and maintenance.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   • Graduates will find employment in the following areas:
     - Installation companies
     - Service companies
   2. Comprehensive Arts and Science (CAS) Transition
   3. Adult Basic Education
      - Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
        i. Mathematics MA3107A, MA3107B, MA3107C
        ii. Science 3101, 3102, 3103
   4. Comprehensive Arts and Science (CAS) Trades
      - Comprehensive Arts and Science (Trades) Certificate
   5. Mature Student Status
      - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates will find employment in the following areas:
- Installation companies
- Service companies
This two year diploma program will provide students with hands on experience and knowledge pertaining to the world of home and light commercial building renovation. Building systems, efficient building techniques, energy conserving systems, sustainable building approaches, estimating and project management are some of the topics students of the Renovation Technician program will cover.

Graduates will have the skills required to work in a variety of residential and commercial building construction settings focusing on renovation projects. Students will learn to recognize hazardous materials and the need for proper waste disposal strategies, as well as proper use of both non-renewable and renewable energy sources.

Graduates of the Renovation Technician program will also receive a Certificate for Carpenter, providing an opportunity to register as a first-year carpenter apprentice.

PROGRAM OBJECTIVES
To enable graduates to:
1. Practice safety work procedures.
2. Manage a renovation project as it relates to core and sub trade practices.
3. Demonstrate problem solving skills, good work practices, strong communication skills, and utilize practical hands on experience gained directly from job placements in industry.
4. Perform with carpenter skills and knowledge in construction techniques related to building sciences, green technologies, waste management, estimation/budgeting and scheduling.
5. Solve problems with associated trades in the areas of electrical, HVAC, plumbing, painting, plastering, masonry and drafting.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103
4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES
Graduates will find employment in the following areas:
• General contractors
• Commercial contractors
• Private contractors
Sheet Metal Worker fabricate, assemble, install and repair sheet metal products. You will use many types of metal including black and galvanized steel, copper, brass, nickel, stainless steel, aluminum and tin plate to make products such as: pollution control systems, dust collection and control systems, air-slides, material blowers, heating, ventilating and air conditioning systems, solar heating and cooling systems, metal showcases, metal cabinets, flashing, coping, troweling and roof drainage systems. Some of the duties include: lay out, measure and mark dimensions and reference lines on sheet metal according to drawings or templates, use laser or plasma cutting equipment, numerically-controlled or computerized equipment, hand and power shears and snips, and light metal-working equipment to cut, drill, punch, bend and shape sheet metal, fasten components together with bolts, screws, cement, rivets, adhesives, or solder, or by welding, install and repair sheet metal products and ensure installations conform to specifications and building codes.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools, machines and equipment.
3. Use scaffolds, hoists, slings and ladders.
4. Determine project requirements.
5. Develop patterns using various methods.
6. Fabricate parts using hand tools, power tools, and power operated equipment.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Certificate
3. Adult Basic Education
4. Comprehensive Arts and Science (CAS) Trades Certificate
5. Mature Student Status

You may find employment with the following types of companies:
- Plumbing, Heating and Air Conditioning Companies
- Steel Producers
- Metal Producers
- Exterior Construction firms
INDUSTRIAL TRADES

Small Equipment Service Technician

The Small Equipment Service Technician program is designed to enable you to learn the knowledge and skills associated with the repair and maintenance of recreational equipment such as snowmobiles, ATVs, motorcycles, personal water craft and outboard motors, and fuel-powered tools such as chainsaws and lawn mowers. Some of the duties you will encounter are: review and interpret work orders and technical manuals, inspect engines, motors and other mechanical components and use test devices to diagnose and isolate faults, adjust, repair or replace mechanical or electrical system parts and components using hand tools and equipment, test and adjust repaired equipment for proper performance, perform scheduled maintenance service on equipment, advise customers on work performed and general condition of equipment and you may have to estimate repair cost.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret schematics and wiring diagrams.
4. Identify major engine components.
5. Maintain and repair lubricant systems.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
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5. Mature Student Status
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EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Rental dealerships
- Recreational dealerships
- Independent garages
- Service stations
- Repair shops
- Manufacturing companies
This program is designed to prepare you to lay out, assemble, fabricate, maintain and repair piping systems carrying water, steam, chemicals or fuel used in heating, cooling, lubrication and other processes. Some of the duties include: determine the type of pipe and tools to use and lay out the sequence of tasks, make detailed sketches for pipe and equipment fabrication and installation, if required, measure, cut, thread, groove, bend, assemble and install metal, plastic and fibreglass pipes, valves and fittings, join sections and related equipment, and secure in position, use testing equipment to check systems for leaks, remove and replace worn components, do general maintenance work and work on plant shut-downs.

### OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret plans, specifications and working drawings and prepare layouts.
4. Determine the required rules and codes governing installations.
5. Install and maintain high pressure and low pressure steam and hot liquid systems.

### ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

- **High School**
  - High School Graduation
  - Comprehensive Arts and Science (CAS) Transition Certificate

- **Adult Basic Education**
  - Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
    - Mathematics MA3107A, MA3107B, MA3107C
    - Science 3101, 3102, 3103

### EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- Construction contractors
- Manufacturers
- Utility companies
- Oil and Gas
- Industrial plants
INDUSTRIAL TRADES

Truck and Transport Mechanic

This program is designed to provide you with the skills and knowledge required for employment in the field of Truck and Transport Mechanic. Some of your duties include: interpret work orders and technical manuals, keep equipment cleaned, lubricated and maintained, diagnose faults or malfunctions, adjust equipment and repair or replace defective parts, components or systems, test repaired equipment for proper performance and ensure that the work done meets manufacturers’ specifications and legislated regulations.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Follow work orders, prepare estimates, and interpret technical manuals.
4. Write service reports; diagnose problems and record service analysis.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School Graduation
2. Comprehensive Arts and Science (CAS) Transition
3. Adult Basic Education
4. Comprehensive Arts and Science (CAS) Trades
5. Mature Student Status

EMPLOYMENT OPPORTUNITIES
Graduates will find employment in the following areas:
- Repair shops
- Maintenance companies
- Transportation companies
- Construction companies

COURSES

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<tr>
<td>SV1114</td>
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Certificate

- Red Seal Certification
- One year
- Start date varies
- Bay St. George Campus
## INDUSTRIAL TRADES
### Welder

Welders join and serve metals in beams, girders, vessels, piping and other metal components make metal parts used in construction and manufacturing plants, and weld parts, tools, machines and equipment. Some of the duties are: develop patterns or follow directions given in layouts, blueprints and work orders, clean, check for defects and shape component parts, and weld parts together.

**OUTCOMES**
1. Demonstrate safe work practices and personal protection.
2. Interpret drawings and develop layout patterns for projects.
3. Use and maintain tools and equipment.
4. Follow required codes, specifications, and standards.

### ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. **High School**
   - Graduation
2. **Comprehensive Arts and Science (CAS) Transition**
3. **Comprehensive Arts and Science (CAS) Trades**
4. **Mature Student Status**

### EMPLOYMENT OPPORTUNITIES
Graduates will find employment in the following areas:
- Machine shops
- Fabrication plants
- Garages
- Production plants
- Shipyard
- Oil and Gas

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CERTIFICATE
- Two years
- Start date varies
- Port aux Basques Campus

COURSES

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INDUSTRIAL TRADES

Welder/Metal Fabricator (Fitter)

Welder/Metal Fabricator is a combination of both the Welder and Metal Fabricator programs. At the end of the two years you will have two certificates. You will be qualified to do the work of a Welder and a Fabricator. Some of your duties include: develop patterns or follow directions given in layouts, blueprints and work orders, clean, check for defects and shape component parts, weld parts together, lay out, cut and fabricate structural steel, study engineering drawings and blueprints to determine the materials required and plan the sequence of tasks to cut the metal most efficiently, rig and hoist and move materials to storage areas or within the worksite assemble and fit metal sections and plates to form complete units or subunits using tack welding, bolting, riveting or other methods, install fabricated components in the final product.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret show drawings, sketches and fabrication drawings.
3. Follow required codes, specifications and standards.
4. Prepare work area and equipment schedule.
5. Prepare final products for finish.

ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
   - High School Graduation
   - Comprehensive Arts and Science (CAS) Transition Certificate
2. Comprehensive Arts and Science (CAS) Trades Transition Certificate

EMPLOYMENT OPPORTUNITIES

Graduates will find employment in the following areas:
- Machine shops
- Fabrication plants
- Garages
- Production plants
- Oil and Gas
- Mining

3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following:
   - Mathematics MA3107A, MA3107B, MA3107C
   - Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

5. Mature Student Status
   Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.
DIPLOMA

- Two years
- September start
- Corner Brook Campus

COURSES

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

During the intersession many of the required objectives will be achieved while participating in related field activities/ certifications.

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SEMINAR: 3 credits

The program addresses "excellence" by assisting students in becoming capable leaders skilled in imparting information to others in an interesting and enjoyable way.

There are a number of extended field experiences in demanding environments which will develop students' inner strengths, group management and living skills, and personal technical skills in a range of outdoor pursuits: sea-kayaking, canoeing, cross-country skiing, back-country skiing, camping, and back-packing.

The program is enhanced by the option of distributed learning for several courses offered within the program.

OBJECTIVES

1. Apply theoretical and practical experience for employment in the Adventure Tourism-Outdoor Recreation industry.
2. Utilize professional and safety standards in response to the needs of industry and the public Adventure Tourism-Outdoor Recreation Industry.
3. Apply effective negotiation, conflict resolution and leadership skills for use in the business environment of Adventure Tourism-Outdoor Recreation.
4. Integrate general knowledge of bookkeeping, human resources, and marketing for application in an Adventure Tourism-Outdoor Recreation business environment.
5. Apply effective personal interpretation skills in communicating the importance of Newfoundland and Labrador's biological, geological and historical significance for use in the Adventure Tourism-Outdoor Recreation industry.

THE CONTEXT

The Adventure Tourism - Outdoor Recreation diploma program is a two-year industry driven program based in spectacular Western Newfoundland, 90 minutes from Gros Morne National Park. The program has access to two UNESCO World Heritage Sites, numerous National Historic Sites, and breathtaking natural wilderness and ocean environments. It is supported by a world class public college system with an excellent transfer program with colleges and universities across Canada.

The Province of Newfoundland and Labrador is evolving as a world-class adventure tourism product, and to remain competitive, the product, as well as the service, must be exceptional. This program has been designed to ensure that the province will have highly skilled individuals to fulfill the projected demand in this competitive international industry.

EMPLOYMENT OPPORTUNITIES

Tourism is a growth industry; and according to the World Tourism organization, it is now the largest industry in the world. Around the world, Adventure Tourism is expanding and therefore, employment opportunities continue to grow each year. Although there are recognizable peak seasons in the industry, Canadian adventure tourism operators are expanding their season to ensure all year-round employment opportunities continue to grow each year. Therefore, there are recognizable peak seasons in the industry. Adventure tourism operators are expanding their season to include four-season activities. Job opportunities include adventure guides, ski and kayak instructors, bus tour guides, cruise ship interpreters, provincial and national parks interpreters, and program coordinators for youth camps and environmental education programs. Since a major portion of programming deals with natural resources, possibilities also exist in the area of resource management.

PROGRAM TRANSFERABILITY

Graduates of the Adventure Tourism - Outdoor Recreation program who wish to pursue additional post-secondary studies can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education's transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

ENTRANCE REQUIREMENTS

Academic:
Eligibility for admission to the Adventure Tourism program requires the applicant to meet one of the following: II

1. High School
High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English (2 credits) (minimum 60%) from: 3201 or 3202
   ii. Science (4 credits) two of which must be chosen from:
      Biology: 3201
      Physics: 3204
      Chemistry: 3202
      Earth Systems: 3209
   Environmental Science: 3205
   Note: the remaining Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

2. Comprehensive Arts and Science (CAS) Transition
Comprehensive Arts and Science (Transition) Certificate with the following courses:
   i. Two science courses chosen from one of the following:
      a. Biology: BL1020, BL1021
      b. Chemistry: CH1030, CH1031
      c. Physics: PH1050, PH1051
   Note: It is strongly recommended that all CAS students who intend to enroll in the Adventure Tourism program complete BL1020 and BL1021.

3. Adult Basic Education (ABE)
   a. Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses (or equivalent):
      i. English: 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
      ii. Science from one of the following sections:
      Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses includes those outlined above have been completed.

4. Mature Student Status
   Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

SPECIAL REQUIREMENTS

Because of the extensive field exposure incorporated in this program, students will be required to obtain quality outdoor clothing and equipment. A list of suggested items is available upon request, and will be sent to applicants upon application. This program requires satisfactory completion of activities which place physical and mental demands on students in activity courses such as backpacking, canoeing, kayaking and skating.

Students will be required to complete an informal medical consent form prior to all major outings. Students should be able to swim moderately upon entrance into the program and will be required to fulfill the requirements of the Water Safety course by the end of semester 2.
ADVANCED-DIPLOMA
• One year
• September start
• Bay St. George Campus

COURSES

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Semester 2

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Semester 3 (Intersession I)

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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Sequencing of courses and delivery may vary if delivered in a modular format.

CERTIFICATIONS

In addition to the formal semester courses listed in the program of studies, students in the Conservation Program are required to complete the following certifications prior to program graduation:
- Pressure Point Control Training
- Survival First Aid

NOTE: Students should be aware that additional fees apply for the above certifications, field trips/tours. Additional expenses will be necessary for the purchase of items of clothing which are required for scheduled labs.

SPECIAL REQUIREMENTS

Because of the extensive field exposure incorporated in this program, students are required to acquire appropriate clothing for outdoor work.

NOTE: This program is currently under review and it is anticipated that changes will occur.

Conservation Law Enforcement

Conservation Officers who are responsible for administering natural resources laws and regulations must be well versed in this area and capable of performing their duties and responsibilities. The Advanced-Diploma program will be of interest to students who have completed a related program in natural resources at the technician and baccalaureate level and who have career interests in conservation enforcement. The one-year advanced-diploma program is designed to supplement a student's natural resource background and with specific learning opportunities in the area of conservation law enforcement.

This program prepares students for careers in conservation enforcement by focusing on the skills, competencies, and attitudes necessary to meet the needs of the natural resources law enforcement sector. The program combines practical, theoretical and experiential learning in the classroom and field, in College of the North Atlantic’s facilities.

OBJECTIVES

1. To train students in the field of Conservation Enforcement
2. To develop practical, theoretical and experiential skills and competencies necessary for all aspects of Natural Resources Conservation Law Enforcement.
3. To provide knowledge and experience with a wide range of field and office equipment and techniques associated with Conservation Enforcement.
4. To provide the knowledge and attitudes that will enable students to identify natural resources conservation enforcement challenges and opportunities and to undertake measures and treatments as might be associated with natural resources protection, management and utilization.

EMPLOYMENT OPPORTUNITIES

Graduates of this program may obtain employment throughout Canada in a variety of Conservation Enforcement fields of protection and enforcement with Federal and Provincial Departments as well as the Private Sector.

TRANSFERABILITY

Graduates of Conservation Enforcement may elect to further their postsecondary studies at a number of Canadian Universities.

ENTRANCE REQUIREMENTS

Graduation from a recognized college or university with a two year diploma or a degree in an area of studies directly related to natural resource management and/or renewable resources. Applicants with diplomas or degrees from other related areas may be considered.

Note: If the diploma or degree is not in an area of studies directly related to natural resources and/or renewable resources, applicants should note that employment as a Conservation Officer may not be possible. However, employment opportunities may exist in other areas.

Students must submit an official Preadmission College of the North Atlantic Health Assessment Form and a Certificate of Conduct from the Royal Newfoundland Constabulary (RNC), the Royal Canadian Mounted Police (RCMP) or local provincial/municipal force, prior to registration.
**Emergency Management**

The Emergency Manager is the “conductor of the orchestra” who provides managerial expertise and leadership to plan for, respond to and recover from a disaster. The Emergency Manager provides coordination and risk assessment skills to mitigate the effects of potential emergencies. Specifically, an Emergency Manager will guide various agencies, governments and NGO’s (Non Government Organizations) to plan and manage all aspects of emergency management including pre and post mitigation, emergency preparedness, emergency response and emergency recovery. Emergency Managers work in various sectors; the current market for Emergency Managers in Newfoundland and Labrador includes: various provincial and federal departments, crown corporations, municipalities, research agencies, post-secondary institutions and private corporations.

Students will be versed in several emergency management operating systems used in the industry today. Students will have considerable opportunities to practice their skills in a work-like setting putting theory into practice. The program will be delivered in a modular format, affording access to people currently working in the Emergency Management field or related disciplines to enroll in courses offered in the Emergency Management Post Diploma program.

**OBJECTIVES**

Upon successful completion of the program a student will be able to

1. Demonstrate comprehensive knowledge and skills needed to develop and implement emergency management solutions to situational problems.
2. Demonstrate comprehension of emergency management theory, fundamentals, technical skills, analysis techniques and solution development. The student will be able to apply an “all hazards, all phases and all actors” approach to emergencies.
3. Employ personal and interpersonal skills of communicating, presenting, facilitating, negotiating and mediation in an Emergency Management context.
4. Apply the skills and techniques used in the administrative duties and procedures of an effective Emergency Manager. These skills include but are not limited to writing, management of projects, time, resource and information management, management of information and resources.
5. Apply skills and techniques used in GIS to access information for the development of Hazard Analysis, Risk Assessment, and Vulnerability Assessment. Further the student will be able to apply these skills to the techniques of gathering, analyzing, interpreting, sorting and acting upon information.
6. Demonstrate knowledge of vulnerability, exposure, risk and resiliency and their connectivity. Societal variables that determine the human and economic severity of hazards and disasters are examined and interpreted.
7. Demonstrate the technical skills and proficiency to effectively use computer (software) GIS, mapping, modeling and simulations in an emergency management context.
8. Work cooperatively within a project team, to design and implement Emergency Management applications that address predefined objectives. During this process, students will apply their knowledge and skills and rely on each other, with guidance from faculty, to acquire new skills to solve Emergency Management problems.
9. Articulate a persuasive case for mitigation, collaborative planning and coordinated actions for sound holistic recovery planning.
10. Respond appropriately to constructive criticism, apply sound decision making principles and effectively lead his/her peers when required.
11. Demonstrate creativity and individuality in finding solutions to problems related to resource management.
12. Design and conduct exercises for various levels of training for emergency planners and coordinators.

**EMERGENCY MANAGEMENT**

**TOURISM & NATURAL RESOURCES**

**POST DIPLOMA**

- Three semesters
- September 2012
- Bay St. George Campus

**COURSES**

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**Semester 1**

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**Semester 3 (Intersession)**

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Note: The course and lab hours per week are based on a 15-week semester. In intersession, the course and lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

**CERTIFICATIONS**

In addition to the formal semester courses listed in the program of studies, students enrolled in the Emergency Management program are required to complete the following certificate courses prior to graduation. All certificates must be valid upon graduation.

- Incident Command System (ICS 100) (2 Days)
- Chemical, Biological, Radiation, Nuclear and Explosives (CBRNE) (1 Day)
- Hazardous Materials (Hazmat) Level 1 (1 Day)

Students will be versed in several emergency management operating systems used in the industry today. Students will have considerable opportunities to practice their skills in a work-like setting putting theory into practice. The program will be delivered in a modular format, affording access to people currently working in the Emergency Management field or related disciplines to enroll in courses offered in the Emergency Management Post Diploma program.

**ENTRANCE REQUIREMENTS**

Program applicants must have graduated from a recognized College or University with a diploma or degree in a related discipline. Related fields include, but are not limited to forestry, natural resource sciences, engineering, environmental studies, health care, geology, surveying, geography, business, municipal planning and law enforcement.

**EMPLOYMENT OPPORTUNITIES**

Graduates may find employment with independent Emergency Management consultants; long term goals for graduates could result in management positions with various Natural Resources Departments. Employment opportunities also exist in private industry corporations, non-profit Natural Resource organizations, self-employment and Government Natural Resource Agencies in the field of Emergency Management. Many industrial companies utilize Emergency Management trained staff as a part of their CAER initiatives (Community Awareness Emergency Response) planners.

**SPECIAL REQUIREMENTS**

The program incorporates an Emergency Capstone Project establishing industry-student linkages. Students will have considerable opportunities to practice their skills in a work-life setting by putting theory into practice.
Tourism & Natural Resources

Environmental Technology (Co-op)

Diploma
- Three years
- September start
- Corner Brook Campus

Courses

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*Admission to the appropriate mathematics course will be decided by the grade in high school math.

Either

1. Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1100

Or

2. Students who received a combined average of 70% in 2204 and 3204, or a pass in both of 2205 and 3205 can be exempted from MA1100.

Students must apply for the exemption.

Semester 1

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The course and Lab hours per week are based on a 15 week semester. In intersession, the course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 2

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Semester 3

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The college offers a three-year Co-operative Education diploma program in Environmental Technology. The co-operative education component affords the opportunity to combine practical work experience with academic learning.

Objectives

1. To train students in the environmental field at a technical level.
2. To provide knowledge and skills related to all aspects of environmental technology.
3. To provide knowledge and experience in working with specialized equipment and techniques used in the field.

Employment Opportunities

Graduates of the program may obtain employment in government or private industry. Employment would include such work as providing technical support to professional pollution control specialists, providing technical assistance with impact assessment studies to firms and/or consultants, and assisting government and industry in promoting their environmental education programs.

Program Transferability

Graduates of the Environmental Technology program who wish to pursue additional post-secondary studies can apply for entry with advanced standing, at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

Accreditation

To ensure the benefits of a consistently high standard of education, College of the North Atlantic’s Environmental Technology program is nationally accredited by the Canadian Technology Accreditation Board (CTAB), and the Canadian Association for Cooperative Education (CAFE).

Entrance Requirements

Eligibility for admission to the program requires the applicant to meet one of the following four academic criteria:

1. High School

   High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   - English (2 credits) (minimum 60%) from: 3201 or 3202
   - Mathematics (4 credits) chosen from: Advanced: 2205, 3205 (50% minimum in each course)

OR

   Academic: 2204 (50% minimum), 3204 (60% minimum)
   - Science = (4 credits) two of which must be chosen from:
     - Biology: 3201
     - Physics: 3204
     - Chemistry: 3202
   - Earth Systems: 3209
   - Environmental Science 3205

2. Comprehensive Arts and Science (CAS) Transition

   Comprehensive Arts and Science Science (Transition) Certificate with the following courses:
   - Math: MA1040, MA1041
   - Two Science courses chosen from two of the following three combinations:
     - a. Biology: BL1020, BL1021
     - b. Chemistry: CH1030, CH1031
     - c. Physics: PH1050, PH1051
   - Note: It is strongly recommended that CAS students who intend to enroll in the Fish and Wildlife, Forest Resources Technician, Natural Resources Technician or Northern Natural Resources Technician program complete BL1020 and BL1021. In addition, it is recommended that students who intend to enroll in the Environmental Technology program complete CH1030 and CH1031.

3. Adult Basic Education (ABE)

   Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses (or equivalent):
   - i. English: 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   - iii. Science from one of the following sections:
   - Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status

   Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

Special Requirements

Because of the extensive field and laboratory exposure incorporated in this program, students will be required to obtain specialized clothing and equipment, including a lab coat, safety glasses, graphics calculator, navigation compass, quality safety boots, rainwear, and other clothing appropriate for outdoor work.
DIPLOMA

• Two years
• September start
• Corner Brook Campus

TOURISM & NATURAL RESOURCES

Fish and Wildlife Technician

With increasing emphasis on sustainable development, integrated resource management policy and ecosystem based management across Canada and around the world, technicians in the natural resources sector must have a foundation in matters related to biodiversity in general and fish and wildlife management issues in particular. The two-year Fish and Wildlife Technician program, which shares many courses with the Forestry Resources Technician program, is designed to enable students with a specific interest in fish and wildlife to participate in studies directed towards their career goals. The program reflects the trend toward integrating a wide range of natural resources technology within government departments at Federal and Provincial levels. The requirement for the forest industry to consider wildlife in its management practices and the increased monitoring and management of freshwater and marine resources highlights the need for this program. The program provides a balance of field and classroom experiences that include a significant computer based data collection and analysis component.

OBJECTIVES

1. To provide students with the knowledge and skills that are required to actively participate in the solution of fish and wildlife management problems and challenges.
2. To provide the knowledge and attitudes that will enable students to identify forest ecosystem challenges and opportunities and to undertake such assessments, preventive measures and treatments as might be associated with fish and wildlife conservation and management.
3. To provide knowledge and experience with a wide range of field and office equipment and techniques associated with the assessment and analysis of fish and wildlife resources data.
4. To provide the foundation for continued learning experiences at the post graduate level.

EMPLOYMENT OPPORTUNITIES

Graduates of this program may obtain employment throughout Canada in a variety of fish and wildlife related fields: protection and enforcement, resource inventory and site classification, habitat protection and improvement, environmental impact assessment, parks and interpretation programs. Graduates are employed with governmental and private agencies in fields ranging from forestry technicians to fisheries observers.

PROGRAM TRANSFERABILITY

Graduates of the Fish and Wildlife Technician program, who wish to pursue additional post-secondary studies, can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education's transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

ACCREDITATION AND RECOGNITION

To ensure the benefits of a consistently high standard of education, College of the North Atlantic’s Fish and Wildlife Technician program is accredited by the North American Wildlife Technology Association (NAIWA).

ENTRANCE REQUIREMENTS

Academic:

Eligibility for admission to the program requires the applicant to meet one of the following four academic criteria:

1. High School
   High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English (2 credits) (minimum 60%) from: 3201 or 3202
   ii. Mathematics (4 credits) chosen from:
      Advanced: 2205, 3205 (50% minimum in each course)
      OR: Academic: 2204 (50% minimum), 3204 (60% minimum)
   iii. Science - (4 credits) two of which must be chosen from:
      Biology: 3201
      Physics: 3204
      Chemistry: 3202
      Earth Systems: 3209
      Environmental Science 3205

2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science (Transition) Certificate with the following courses:
   i. Math : MA1040, MA1041
   ii. Two Science courses chosen from two of the following three combinations:
      a. Biology: BL1020, BL1021
      b. Chemistry: CH1030, CH1031
      c. Physics: PH1050, PH1051

   Note: It is strongly recommended that CAS students who intend to enroll in the Fish and Wildlife, Forest Resources Technician, Natural Resources Technician or Northern Natural Resources Technician program complete BL1020 and BL1021. In addition, it is recommended that students who intend to enroll in the Environmental Technology program complete CH1030 and CH1031.

3. Adult Basic Education (ABE)

Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses (or equivalent):
   i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   ii. Mathematics 2204 (50% minimum), 2204 (60% minimum)
   iii. Science from one of the following sections:
      b. Chemistry 1102, 2102A, 2102B, 2102C, 3102A, 3102B, 3102C
      c. Physics 1101, 2101A, 2101B, 3101A, 3101B, 3101C

   Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status

Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

SPECIAL REQUIREMENTS

Because of the extensive field exposure incorporated in this program, the students are required to acquire the following equipment and clothing: compass, axe, snowshoes, rubber boots, hiking boots, chest wader, good quality rainwear, neoprene gloves and other clothing appropriate for outdoor work.
The concept of proper management of forest lands using the principles of sustainable development and integrated resource management is rapidly being implemented across Canada. In Newfoundland and Labrador, as well as elsewhere, industry and government agencies are applying these principles to the management, protection and utilization of forest resources. This two-year technical program has been designed to provide graduates with the capacity of making a meaningful contribution to the expanded requirement for ecosystem based technology within this changing environment. The program places great emphasis on experiential field based activities.

OBJECTIVES
1. To provide students with the knowledge and skills that are required to actively participate in Finding solutions to forest management problems and challenges.
2. To provide the knowledge and attitudes that will enable students to identify forest ecosystem challenges and opportunities and to undertake such assessments, preventive measures and treatments as might be associated with forest resource protection, management and utilization.
3. To provide knowledge and experience with a wide range of field and office equipment and techniques associated with the assessment and analysis of natural resources data.
4. To provide the foundation for continued learning experiences at the post-secondary level.

EMPLOYMENT OPPORTUNITIES
Graduates of this nationally accredited program may obtain employment throughout Canada in a variety of forestry related fields: protection and enforcement, forest inventory and site classification, logging and engineering, forest access road construction and maintenance, silviculture as well as parks, wildlife and environmental assessment. This program has an established reputation for supplying graduates to employers all across Canada.

PROGRAM TRANSFERABILITY
Graduates of the Forest Resources Technician program who wish to pursue additional post-secondary studies, can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

ACCREDITATION AND RECOGNITION
To ensure the benefits of a consistently high standard of education, the College of the North Atlantic’s Forest Resources Technician program is nationally accredited by the Canadian Technology Accreditation Board (CTAB).

ENTRANCE REQUIREMENTS
Academic: Eligibility for admission to the program requires the applicant to meet one of the following four academic criteria.
1. High School
High School Graduation Certificate with a 60% overall average in the following (or equivalent):
   i. English (2 credits) (minimum 60%) from: 3201 or 3202
   ii. Mathematics (4 credits) chosen from: Advanced: 2205, 2206 (50% minimum in each course)

OR
Academic: 2204 (50% minimum), 3204 (60% minimum)
iii. Science - (4 credits) two of which must be chosen from:
   Biology: 3201
   Physics: 3204
   Chemistry: 3202
   Earth Systems: 3209
   Environmental Science 3205

2. Comprehensive Arts and Science (CAS) Transition Certificate with the following courses:
   i. Math: MA1040, MA1041
   ii. Two Science courses chosen from two of the following three combinations:
      a. Biology: BL1020, BL1021
      b. Chemistry: CH1030, CH1031
      c. Physics: PH1050, PH1051

Note: It is strongly recommended that CAS students who intend to enroll in the Fish and Wildlife, Forest Resources Technician, Natural Resources Technician or Northern Natural Resources Technician program complete BL1020 and BL1021. In addition, it is recommended that students who intend to enroll in the Environmental Technology program complete CH1030 and CH1031.

3. Adult Basic Education (ABE)
Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses (or equivalent):
   i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
   iii. Science from one of the following sections:
      b. Chemistry 1102, 2102A, 2102B, 2102C, 3102A, 3102B, 3102C

Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. Mature Student Status
Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

SPECIAL REQUIREMENTS
Because of the extensive field exposure incorporated in this program, the student is required to acquire the following equipment and clothing: hard hat, compass, axe, snowshoes, logger boots, good quality rainwear, and other clothing appropriate for outdoor work.
The GIS Applications Specialist is the “expert” who provides technical expertise to produce and analyze spatial information for effective planning and reporting activities in a broad range of disciplines. Specifically, a GIS Applications Specialist will help various agencies and government to effectively apply Geographic Information Systems (GIS), remote sensing, Global Positioning Systems (GPS), internet mapping solutions and data visualization technologies to support informational needs, workflows or business processes. GIS Applications Specialists can work in various sectors; the current market for GIS Applications Specialists in Newfoundland and Labrador includes: various provincial and federal departments, crown corporations, municipalities, research agencies, post-secondary institutions and private corporations.

This post-graduate, intensive, three-semester GIS program utilizes current high-end technology tools to collect, store, manipulate, analyze, interpret, and communicate geographic information within a variety of disciplines. The students will be versed in several spatial computing technologies used in the industry today and have access to the latest in appropriate computer hardware, software, and field technology. Students will have considerable opportunities to practice their skills in a work-life setting by putting theory into practice.

OBJECTIVES
1. To provide the student with knowledge and generic skills needed to develop and implement solutions to computational problems. Students will be exposed to problem analysis techniques and solution development using top-down development method, modular design approach, and object-oriented design concepts. To implement developed solutions, students will use Microsoft Visual Studio.

2. To allow the student to develop and apply skills for the effective presentation of geographic information using software typically encountered in a GIS working environment.

3. To enable the student to learn the techniques of gathering geographic related information from the field or existing maps or records and positioning them onto a framework of existing spatial data structures.

4. To give the student the capabilities to understand fundamental principles of database processing with respect to GIS environments and develop skills in designing, implementing and managing databases.

5. To provide the student with a firm foundation of subsequent studies in GIS applications in various program areas. As well, the techniques learned will allow students to apply the knowledge and skills to develop simple to elaborate good practice applications with some theory relating to Vector GIS technology.

6. To provide the student with the skills necessary to analyze geographic data using hypothesis testing, significance tests, descriptive and inferential statistics.

7. To allow the student, within a project team, to design and implement a GIS application that addresses predefined objectives. During this process, the student will apply their knowledge and skills and rely on each other, with guidance from faculty, to acquire new skills to solve GIS problems.

8. To allow the student to expand his/her GIS skills to include web-based GIS applications. The student will learn how to build web-based GIS applications to contribute to the world of Distributed Geographic Information.

9. To give the student the capability of designing efficient and user-friendly graphical interfaces and integrating Microsoft Windows-based software in the development of GIS applications.

10. To give the student the capability of designing GIS applications based on the integration of programming languages, database management systems and GIS software to achieve the most efficient data access, manipulation and presentation.

ENTRANCE REQUIREMENTS
Applicants must have graduated from a recognized college or university with a diploma and/or degree in a relevant program area. Related program areas include, but are not limited to forestry, natural resource sciences, engineering, environmental studies, geology, surveying, geography, business, municipal planning and law enforcement.

This post-graduate, intensive three-semester GIS program utilizes current high-end technology tools to collect, store, manipulate, analyze, interpret, and communicate geographic information within a variety of disciplines. The students will be versed in several operating systems used in the industry today and have access to the latest in appropriate computer hardware, software, and field technology.

EMPLOYMENT OPPORTUNITIES
Program graduates are prepared to work in positions as diverse as GIS programmers/analysts, application specialists/consultants, ecosystem IT managers, utilities managers, database managers, GIS systems operators, and land information managers.

SPECIAL REQUIREMENTS
The program incorporates a Major Geographic Information Systems Project establishing industry-student linkages. Students will have considerable opportunities to practice their skills in a work-life setting by putting theory into practice.
DIPLOMA
• Two years
• Bay St. George - September start
• Prince Philip Drive - September 2012

TOURISM & NATURAL RESOURCES
Hospitality Tourism Management

COURSES

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The Course and Lab hours per week are based on a 15 week semester. In intercession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

NOTE: Students may qualify for a Certificate in Hospitality Services, if exiting at the end of Year I.

Semester 4

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A list of elective courses to be offered each semester will be made available at registration. Other courses may be chosen provided:
1. all prerequisites have been met
2. the course is offered during the semester
3. the maximum enrollment for the course is not exceeded
4. the student’s schedule can accommodate all scheduled classes for that course

Note: Students enrolled in the Hospitality Tourism Management program will not be permitted to serve or sample alcohol until they reach nineteen years of age. Alternate arrangements will be made to satisfy the required learning objectives.

Tourism is a dynamic part of our economy. The global tourism industry is the world’s largest industry and, in Canada, this industry is growing at a steady pace. There is ongoing demand for qualified staff to manage growing and increasingly sophisticated hospitality/tourism operations. If you are a “people oriented” individual with a desire to work in a fast-paced environment, then this is the program for you.

This program prepares students for careers in tourism by focusing on the skills, competencies, and attitudes necessary to meet the needs of this industry. The program combines practical, theoretical and experiential learning in the classroom, in College of the North Atlantic’s renowned hospitality facilities, and during work terms.

The first year of the program focuses on the core skills and characteristics of the hospitality tourism industry. Students will complete a six-week work term between semesters two and four that will provide valuable work experience and knowledge of what is required to manage a hospitality tourism establishment. Students may exit after the successful completion of year one (semesters 1, 2 and 3) with a Certificate in Hospitality Services.

Year two provides an opportunity to develop strong supervisory and management skills.

The curriculum is designed to meet the standards established by the Canadian Tourism Human Resource Council and the provincial hospitality tourism industry. Graduates of this program may find work in a wide variety of tourism organizations. Alternatively, employment may be possible with government and non-government agencies or associations dedicated to hospitality and tourism. Graduates may also decide to take the entrepreneurial route and start their own businesses.

OBJECTIVES
1. To enable students to acquire an understanding of the hospitality tourism industry and the role and economic importance it has in society
2. To have students understand the operation and management principles of the hospitality tourism industry.
3. To develop practical, theoretical and experiential skills and competencies necessary for the management of a tourism business/organization.
4. To provide students with skill development for entry level and managerial positions, interpersonal relations and quality customer service, with a focus on leadership, team building and problem solving.

EMPLOYMENT OPPORTUNITIES
The growth of the tourism sector globally offers employment opportunities throughout the world, and graduates will be well qualified to seek opportunities nationally and internationally. Graduates of this program should have medium-term career goals that include junior supervisory and supervisory positions, and long-term goals such as departmental or facility management. Employment opportunities exist in corporations, non-profit tourism organizations, tourism associations, hotels, resorts, attractions, and private businesses.

PROGRAM TRANSFERABILITY
Graduates of the Hospitality Tourism Management program wishing to pursue additional post-secondary studies can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

ENTRANCE REQUIREMENTS
Academic
Eligibility for admission to the Hospitality Tourism Management program requires the applicant to meet one of the following four academic criteria:
1. High School
   High School Graduation Certificate with a 60% average in nine Level 3000 credits or equivalent
2. Comprehensive Arts and Science (CAS) Transition Comprehensive Arts and Science Science (Transition) Certificate
3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an overall average pass mark of 60%
4. Mature Student Status
   Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

CERTIFICATIONS
In addition to the formal semester subjects listed in the program of studies, students in the Hospitality Tourism Management program are required to complete the following certifications for the Hospitality Services Certificate or the Hospitality Tourism Management Diploma:

- NFSTP (National Food Safety Training Program)
- CPI (Non-Violent Crisis Prevention Intervention Seminar)
- Weapons in the Workplace
- It’s Good Business (Responsible Alcohol Service)
- Mature Consumer
- ST. John Ambulance Standard First Aid
- SuperHost Atlantic
- WHMIS – Workplace Hazardous Materials Information System
- Back Injury Prevention

Note: Students should be aware that additional fees apply for the above certifications, field trips, tours and OJ1480. Additional expenses will also be incurred for the purchase of items of clothing which are required for the program.
Diploma
- Two years
- September 2013 start
- Bonavista Campus

**Natural Resources Technician**

The Natural Resources Technician program integrates content from the study of both the terrestrial and aquatic environments to produce competent technicians and enforcement officers for various natural resource management agencies. The program addresses the trend towards integrating a wide range of natural resources technology within government departments at federal and provincial levels. The requirement for natural resources industry to consider its management practices within the context of monitoring and managing terrestrial, freshwater and marine resources highlights the need for this program.

**OBJECTIVES**

1. To provide the knowledge and attitudes that will enable students to identify natural resource challenges and opportunities and to undertake such assessments, preventive measures and treatments as might be associated with resource protection, management and utilization.
2. To provide students with the knowledge and skills that are required to actively participate in the solution of natural resources problems and challenges.
3. To provide knowledge and experience with a wide range of field and office equipment and techniques associated with the assessment and analysis of natural resources data.
4. To provide the foundation for continued learning experiences at the post graduate level.

**EMPLOYMENT OPPORTUNITIES**

Graduates of the Natural Resources Technician program are qualified for employment with federal and provincial governments as well as the private sector. Examples include Department of Fisheries and Oceans, Parks Canada, Department of Natural Resources, and private companies such as Seawatch who provide offshore observers and river guardians for Department of Fisheries and Oceans.

**PROGRAM TRANSFERABILITY**

Graduates of the Natural Resources Technician program who wish to pursue additional post-secondary studies can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

**ENTRANCE REQUIREMENTS**

Academic: Eligibility for admission to the program requires the applicant to meet one of the following four academic criteria:

1. **High School**
   - High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     - English (2 credits) (minimum 60% from: 3201 or 3202)
     - Math (4 credits) chosen from: Advanced: 2205, 3205 (50% minimum in each course)
     - OR Academic: 2204 (50% minimum), 3204 (60% minimum)
   - OR Science (4 credits) (minimum 60% from:
     - Biology: 3201
     - Physics: 3204
     - Chemistry: 3202
     - Earth Systems: 3209
     - Environmental Science 3205

2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate with the following courses:
     - English: BL1020, BL1021
     - Math: CH1030, CH1031
     - OR: PH1050, PH1051

3. **Adapt Basic Education (ABE)**
   - Adult Basic Education (Level II) Graduation with Degree and Technical Profile including the following courses (or equivalent):
     - English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
     - Science from one of the following sections:
       - Biology 1101, 2101A, 2101B, 2101C, 3101A, 3101B, 3101C
       - Chemistry 1102, 2102A, 2102B, 2102C, 3102A, 3102B, 3102C
       - Physics 1104, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C
   - Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

4. **Mature Student Status**
   - Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

**SPECIAL REQUIREMENTS**

Because of the extensive field exposure incorporated in this program, students will be required to obtain quality outdoor clothing and equipment, including navigation compass, snowshoes, quality safety boots, rainwear, and other clothing appropriate for outdoor work.

**CERTIFICATIONS**

In addition to the formal semester courses listed in the program of studies, students in the Natural Resources Technician program are required to obtain certification in the following areas over the two-year period:

- Canadian Firearm Safety Course / Hunter Education
- Coastal Navigation
- Electro-Fishing Certification
- Marine Advanced First Aid
- Marine Search & Rescue Seminar
- Pleasure Craft Operators Card
- Pollution Control (Coast Guard Oil Spill)
- Restricted Operators Certificate (Maritime) DSC Endorsement
- WLMR / OHS

Note: Students should be aware that additional fees and expenses apply for some of these certifications and for field camps, tours, and on-the-job training. Students will be required to hold valid certifications in the above areas prior to graduation.
Northern Natural Resources Technician

The Northern Natural Resources Technician program is designed to produce competent technicians for various wildlife, forestry and fisheries agencies with major emphasis on working in northern ecosystems. The concept of proper management of our natural resources using the principles of sustainable development, integrated resource policy for ecosystem based management has become the norm in our global community. Industries and all levels of government around the world are beginning to apply these principles to the management, protection and utilization of our existing and changing environment and its resources. The program provides a balance of field and classroom experiences that includes significant computer based data collection and analysis component.

EMPLOYMENT OPPORTUNITIES
Graduates of this program are qualified for employment throughout Canada with federal and provincial governments and with private industry. Government agencies may include the Department of Fisheries and Oceans, Parks Canada, and the Department of Forestry, Resources, and Agrifoods. Typical job duties might include protection and enforcement, reservoir inventory, site classification, habitat protection and improvement, environmental impact assessments, parks programs, providing technical support and environmental education programs.

OBJECTIVES
1. To train students in the field of Natural Resources to the technician level.
2. To provide knowledge and skills related to all aspects to Northern Natural Resources.
3. To provide knowledge and experience in working with specialized equipment and techniques used in the field.
4. To provide knowledge and experience with a wide range of office equipment and techniques associated with the assessment and analysis of natural resources data.
5. To foster positive attitudes toward forestry, wildlife and fisheries ecosystems and to deal effectively with challenges and problems that impact negatively on our environment.
6. To provide an understanding of the interaction between northern ecosystems and the native peoples living in them.
7. To provide the foundation for continued learning experiences.

PROGRAM TRANSFERABILITY
Graduates of the Northern Natural Resources Technician program who wish to pursue additional post-secondary studies can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cnal.ca/transfer), or contact your intended university or college.

ENTRANCE REQUIREMENTS
Academic: Eligibility for admission to the program requires the applicant to meet one of the following four academic criteria:

1. High School
   - High School Graduation Certificate with a 60% overall average in the following (or equivalent):
     - English (2 credits) (minimum 60%) from: 3201 or 3202
   - Mathematics (4 credits) chosen from:
     - Advanced: 2205, 3205 (50% minimum in each course)
     - OR: Academic: 2204 (50% minimum), 3204 (60% minimum)
   - Science – (4 credits) two of which must be chosen from:
     - Biology: 3201
     - Physics: 3204
     - Chemistry: 3202
     - Earth Systems: 3209
     - Environmental Science 3205

2. Comprehensive Arts and Science (CAS) Transition Certificate
   - Refer to the NL Department of Education’s transfer guide (www.cnal.ca/transfer), or contact your intended university or college.

3. To provide the foundation for continued learning experiences.

4. Mature Student Status
   - Applicants who do not meet the entrance requirements, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

SPECIAL REQUIREMENTS
Because of the extensive field exposure incorporated in this program, students will be required to obtain the following items: navigation compass, quality safety/hiking boots, rainwear, backpack, and other clothing and footwear appropriate for outdoor work in various seasonal conditions. Students will also be required to obtain a scientific calculator.
AC1100 Bookkeeping I ●
Bookkeeping I is a study of the fundamental principles, the mechanics of bookkeeping, including the recording, classifying, and summarizing of financial data for a service business. The course also includes the control of cash and petty cash, banking procedures, and completing the accounting cycle. This course emphasizes the national accounting standards (private enterprise Generally Accepted Accounting Principles - GAAP).

AC1120 Computerized Bookkeeping I
Computerized Bookkeeping I is a study of the fundamental principles, the mechanics of bookkeeping, recording, and classifying. It involves the control of cash, petty cash and banking procedures. This course introduces the student to the concepts of a basic integrated accounting software package - Simply Accounting.

AC1260 Financial Accounting I ●
This course introduces the student to accounting concepts, including the basics of the double-entry accounting system including adjusting entries, financial statement preparation, accounting for payroll, accounting for a merchandising company and the basics of the internal control of cash. This course emphasizes the national accounting standards (private enterprise GAAP in Canada).

AC1350 Income Tax ●
The student is introduced to the basic principles of the Canadian Income tax. Emphasis is placed on computing taxable income and taxes payable for individuals and corporations. The course includes basic tax planning ideas for individuals and corporations.
Prerequisite(s): AC2220

AC2100 Bookkeeping II ●
Bookkeeping II involves the application of accounts receivable and accounts payable, and the study and application of the generally accepted accounting principles within merchandising firms. The course involves using special journals, and-of-the-year adjustments for depreciation, accruals, bad debts, closing entries, financial statements, and payroll. This course emphasizes the national accounting standards (private enterprise Generally Accepted Accounting Principles - GAAP).
Prerequisite(s): AC1100

AC2220 Intermediate Financial Accounting I ●
This course is designed to build on the knowledge the student obtained in Financial Accounting I and II. Its focus is on the asset side of the Balance Sheet, providing an in-depth study of current assets, property, plant and equipment, and intangible assets. The recognition and measurement of revenues and expenses are also covered.
Prerequisite(s): AC2260, MC1241

AC2230 Computerized Accounting I ●
This course introduces the student to the elements of integrated computerized financial accounting software (such as Simply Accounting by Sage). The student will explore integrated software systems, general ledger, payables, receivables, payroll and inventory. The student will have the opportunity to apply the skills through various applications.
Prerequisite(s): AC2100 and CP2310; or AC1260 and MC1240

AC2231 Computerized Accounting II
This course completes the study of computerized accounting systems started in AC2230 Computerized Accounting I. The student will learn how to use computerized accounting software to: perform bank reconciliation, enter foreign currency transactions, perform project allocations, budgeting, departmental accounting, timing and billing. Furthermore the student will learn to use spreadsheets for analyzing, planning and decision making for intermediate accounting and managerial accounting content through the use of comprehensive case studies and simulations.

AC2250 Managerial Accounting I ●
This course is designed to provide the student with knowledge in accounting techniques needed by management for planning and control, decision making, performance evaluation and preparation of internal reports.
Prerequisite(s): AC2230

AC2256 Financial Accounting II ●
This course introduces students to the principles and procedures needed to account for long-term assets (including capital assets, intangible assets, and investments), liabilities, and equities, and to the concepts of financial reporting and decision making for both partnerships and corporations. In this course the student will explore property, plant, equipment and intangibles; current and long-term liabilities; partnership accounting; corporate organization; transactions and reporting; bonds as liabilities and investments; equity investments; statement of cash flows; and analyzing financial statements. This course emphasizes the national accounting standards (private enterprise GAAP).
Prerequisite(s): AC2260, MC1241

AC2260 Financial Accounting II ●
This course introduces students to the principles and procedures needed to account for long-term assets (including capital assets, intangible assets, and investments), liabilities, and equities, and to the concepts of financial reporting and decision making for both partnerships and corporations. In this course the student will explore property, plant, equipment and intangibles; current and long-term liabilities; partnership accounting; corporate organization; transactions and reporting; bonds as liabilities and investments; equity investments; statement of cash flows; and analyzing financial statements. This course emphasizes the national accounting standards (private enterprise GAAP).
Prerequisite(s): AC2260, MC1241

AC2280 Accounting
The course is designed to provide a working knowledge of the fundamentals of financial and managerial accounting that can be useful for the graduate industrial technologist in understanding, interpreting, and preparing financial statements. Basic principles of managerial accounting including cost behaviour, cost systems, and cost-volume relationships are investigated. The focus will be on the extraction of relevant information from accounting data and how this information can be used in engineering decision-making and budget preparation.

AC2340 Principles of Auditing
This course is designed to provide an introduction to auditing for accounting students who do not have significant auditing or accounting experience. The course is a practical guide to auditing theory and practice.
Prerequisite(s): AC2320

AC2360 Principles of Internal Auditing
This course is designed to provide an introduction to auditing for accounting students who do not have significant auditing or accounting experience. The course is both a practical guide to auditing theory and practice. The course will introduce students to the practice of internal audit and the auditor’s decision-making process.
Prerequisite(s): AC2220
Co-requisite(s): AC3220

AC2530 Oil & Gas Production Accounting
This course will provide students with an overview of the development of the oil and gas industry, from inception to modern practices and from the reservoir to refining, and the role which the production accountant plays in accounting for oil and gas. This will enable students to understand and communicate effectively with professionals in the oil and gas industry and to understand and apply the accounting concepts.
Prerequisite(s): EC1100, EC1200, AC2260

AC2540 Oil & Gas Production Accounting
This course will provide students with an overview of the development of the oil and gas industry, from inception to modern practices and from the reservoir to refining, and the role which the production accountant plays in accounting for oil and gas. This will enable students to understand and communicate effectively with professionals in the oil and gas industry and to understand and apply the accounting concepts.
Prerequisite(s): AC2260

AC2600 Managerial Accounting for Human Resource Managers ●
This course is designed to introduce the student to the accounting techniques needed by management for planning and control, decision making, performance evaluation and preparation of internal reports. The student will explore basic concepts of managerial accounting, departmental, project and program cost allocation, budgeting and control; control through standard costs; flexible budgets and overhead analysis; control of decentralized operations; and pricing of products and services. The student will have the opportunity to apply their skills through practical learning.
Prerequisite(s): AC2260

AC2720 Intermediate Financial Accounting II ●
This course is a continuation of the study of the principles and procedures covered in the previous semester of Intermediate Financial Accounting. The content presents an in-depth study of the liabilities and owner’s equity side of the balance sheet as well as the Statement of Changes in Financial Position, there is also an in-depth study of the Statement of Cash Flows.
Prerequisite(s): AC2220

AC2750 Managerial Accounting II ●
This course is designed to build on the knowledge gained in Managerial Accounting I by having the student apply their previous knowledge of cost behaviour to specialized areas of cost and management accounting including budgeting, standard costing, relevant cost analysis, pricing of products and services, and capital budgeting.
Prerequisite(s): AC2250

AC2751 Managerial Accounting III
Managerial accounting involves the internal generation, communication, and interpretation of information for both operational and strategic decision-making purposes. This course is designed to provide the student with knowledge in accounting techniques required by management for planning and control, decision making, performance evaluation and preparation of internal reports. Increased focus on how modern cost management and cost performance measurement techniques can be used in the strategic function of business. Critical thinking and a strategic approach to cost accounting are now given greater prominence alongside the technical coverage.
Prerequisite(s): AC2250

AC2620 Payroll and Commodity Taxes
This course is designed to provide the student with a working knowledge of the various payroll taxes and provide the students with the ability to complete annual I-4, F-5, summary reports etc., while utilizing software packages. The course prepares the student effectively through Distributed Learning
Available through correspondence
AE2321 Analog Electronics
This course provides a study of analog applications of transistors beyond amplifiers, with emphasis on analysis, design and troubleshooting. Also included is a study of power supply regulators, as well as thyristors and power control circuits.
Prerequisite(s): AE2320

AE2330 Analog Electronics I
This course will include the description, operation, and application of simple electronic components and their use in linear power supplies, small signal amplifiers, and power amplifiers. An introduction to frequency response is also covered. Design and troubleshooting skills are emphasized.

AE2400 Problem Solving & Troubleshooting
This course acquaints the student with a model of the process of human problem solving. Students will be encouraged to analyze and improve their abilities by approaching new types of problems.
Prerequisite(s): AE2301, CT1100, DP2400

AE3100 Analog Integrated Circuits
The purpose of this course is to provide the student with an understanding of the theory relating to differential and operational amplifiers, active filters and signal generators. The theory covered in class will be applied and validated during the laboratory periods.
Prerequisite(s): AE2301

AE3110 Analog Integrated Circuits
The purpose of this course is to provide the student with an understanding of the theory relating to operational amplifier circuits, analog and other filters and advanced power supplies. The theory covered in class will be applied and validated during the laboratory periods.
Prerequisite(s): AE2321

AE3300 Industrial Electronics I
This course is designed to provide students with an introduction to the field of industrial electronics.
Prerequisite(s): AE3100, AE2210

AE3301 Process Control
This course will introduce the student to process control and its applications in industrial settings.
Prerequisite(s): AE3300, MP2400

AF1130 Aircraft Structures and Materials (M, E, S)
This M, E, & S course will provide the student the knowledge and skill in the principles of aircraft structural repair using different types of sheet metal forming processes, materials, fasteners, and equipment.
Prerequisite(s): AF1130

AF1250 Aircraft Stress Skin Repair
This course will develop the students' knowledge and skill to repair damaged stressed skin structures by patching and spot welding.
Prerequisite(s): AF1201

AF1270 Composite Materials (M, S)
This M and S course will provide the students with the knowledge to identify composite materials and the skill inspect them for damage and perform an effective repair when required.

AF1280 Stress Skin Repair or Modification (M, E)
This M and E course will provide the student with the skill to perform a stress skin repair or antenna installation on an aircraft. The course will involve damage assessment, designing and installing a stress skin repair or installing an antenna including an internal reinforcement doubler. The student will perform corrosion preventing processes and install the stress skin repair or antenna as per standard practices.
Prerequisite(s): AF1240

AF1290 Non Metallic Structures (M)
This M course will provide the student with the knowledge of aircraft windows and lenses and the required inspection, repair, maintenance and installation methods. The course will also provide an introduction into the construction, inspection and repair procedures for aircraft fabric and aircraft wood structures.

AF1340 Advanced Composite Repair
This course will provide students with the knowledge and skill to identify advanced composite structural damage, complete a full damage assessment, and perform an effective structural repair as per Canadian aviation regulatory or aircraft manufacturers' standards.
Prerequisite(s): AF1240

AF1400 Specialized Processes and Fixtures
This course will provide the students with the knowledge and skill to be able to select or make jigs and holding fixtures, perform special metal treatment processes and repair forgings and extrusions as per manufacturer's specifications.

AF1500 Windshields, Windows and Lenses
This course will provide the students with the knowledge and skill to identify types of aircraft windshields, windows and lenses, inspect them for damage and evaluate whether repair or replacement is required, manufacture and install windows to fit aircraft structure and perform proper maintenance and repairs to windshields, windows and lenses.
AF2710 Aircraft Maintenance Fundamentals
This course will provide a student with a basic knowledge of aircraft maintenance fundamentals.
Prerequisite(s): GM1150

AH1010 Aboriginal Health Initiatives
This course has been specifically developed to examine health issues which directly affect First Nations and northern communities. Emphasis will be placed upon personal health and wellness, human body systems will be examined, as well careers in Health care and related fields.

AH1100 Aboriginal History
Aboriginal history will provide an Aboriginal perspective of the historical and cultural diversity of Canada’s Aboriginal peoples with special emphasis on Aboriginal peoples of Newfoundland and Labrador, from pre-contact to Confederation to contemporary challenges. This course is open to Aboriginal and non-Aboriginal students.

AJ1700 Architectural Conservation
An overview of Canadian architectural tradition will be studied through the examination of building styles and traditional building techniques as practiced regionally across Canada. Students will explore conservation principles and their practical applications as dictated by international conservation charters. Major topics include: heritage carpentry terminology, regional development in the geographic areas, influence of changing building technology on Canadian architecture, architectural styles that evolved in Canada, international conservation principles, good conservation practices based on accepted principles.

AJ1710 Building Science
This course provides a study of heat loss and sound transference. Learner’s understanding of theories and practice will be developed through instruction, demonstration and project applications. Major topics include: safety measures, heat loss and insulation, sound transference.

AJ2700 Restoration Joinery I
This introductory course teaches learners the theory and practice of repairing, reproducing and installing architectural millwork. Learners will produce and install quality millwork, using traditional and contemporary techniques. Major topics include: safety measures, period moldings, trim carpentry techniques, reproducing wood moldings, moulding repair, baseboard installation, crown moulding installation, door trims, window trims.
Prerequisite(s): AJ1110

AJ2710 Restoration Joinery II
This second-level course continues to teach learners the theory and practice of repairing, reproducing and installing architectural millwork. Learners will produce and install quality millwork, using traditional and contemporary techniques. Emphasis will be placed upon traditional window and door construction. Major topics include: safety measures, traditional window construction, traditional door construction.
Prerequisite(s): AJ2700

AJ2720 Restoration Joinery III
This third-level course continues to teach learners the theory and practice of repairing, reproducing and installing architectural millwork. Learners will produce and install quality millwork, using traditional and contemporary techniques. Emphasis will be placed upon designing and building stairs and steps. Major topics include: stair casing theory, basement stairs and exterior steps. Prerequisite(s): AJ2710

AM1110 Math Essentials
This course requires knowledge of general mathematical concepts and processes to enable trades persons to function in the institutional setting by developing numeracy skills required for technical courses. This math course should also provide a foundation for experiential learning through knowledge of math relating to on-the-job skills and practices. This course is transferable between entry level training blocks in various trade programs.

AM1110-1350 Math Fundamentals
This course provides theoretical and practical orientation to core math skills in a trade specific environment. This course is not transferable between entry level training blocks in various trade programs, and is not eligible for Prior Learning Assessment.

AP1101 Introduction to Apprenticeship
Most trades programs require the learner to enter into an apprenticeship program. This course will provide an introduction to how to become a registered apprentice, the steps to complete an apprenticeship program and the responsibilities of the various stakeholders. Practical projects will introduce the learner to the Provincial Apprenticeship and Trades Certification, the Red Seal web sites. These sites provide essential information on the apprenticeship program.

AS2125 Aircraft Hydraulics and Pneumatics Systems (M, E)
This course will enable learners to perform inspections, troubleshooting principles, repair and maintenance on Aircraft Hydraulic and Pneumatic Systems. Aircraft Plumbing will also be covered.
Co-requisite(s): AS2125

AS2125 Aircraft Hydraulics and Pneumatics Systems (M, E)
This M and E course is to provide learners with the basic knowledge of aircraft hydraulic and pneumatic systems design and function. Aircraft plumbing systems will also be covered. Co-requisite(s): AS2125

AS2160 Aircraft Landing Gear Systems (M)
This is an M course to enable learners to perform inspection, trouble shooting, repair and maintenance on Aircraft Landing Gear and related systems. Prerequisite(s): AS2125 Co-requisite(s): AS2165

AS2165 Aircraft Landing Gear Systems (M, E)
This is an M and E course to provide learners with the knowledge of aircraft landing gear and associated systems, their design and operation. Prerequisite(s): AS2125 Co-requisite(s): AS2160

AS2220 Aerodynamics and Flight Controls (M)
This M course is designed to provide the learner with basic skills to inspect, install and adjust aircraft flight controls. Installation of float and ski systems will be covered in depth. Prerequisite(s): GM1120, GM1130 Co-requisite(s): AS2225

AS2225 Aerodynamics and Flight Controls (M, E)
This M and E course is designed to provide the learner with basic knowledge of aerodynamic forces, flight characteristics and aircraft design. Inspection and adjustments of flight controls is covered in depth.
Prerequisite(s): GM1120, GM1130 Co-requisite(s): AS2220

AS2330 (M) Aircraft Systems (M)
This M course is designed to provide the learner with basic task utilizing the operation of aircraft support, environmental and safety systems. Prerequisite(s): PE1200, GM1120, GM1130 Co-requisite(s): AS2335

AS2335 Aircraft Systems (M, E)
This M and E course is designed to provide the learner with basic knowledge of the operation of aircraft support, environmental and safety systems. Prerequisite(s): PE1200, GM1120, GM1130 Co-requisite(s): AS2330

AS2415 Propellers and Systems (M, E)
This M only course will provide the basic knowledge of aircraft propeller systems and maintenance. Prerequisite(s): AS2415

AS2520 Reciprocating Engine Fuel Metering (M)
This M course will provide the learner with the knowledge of aircraft fuel systems, fuel metering systems, their design, components, function, operation, and maintenance. Prerequisite(s): AS2415

AT1100 Adventure Tourism Industry
This course provides an in-depth study of the adventure tourism industry with special emphasis on Newfoundland and Labrador. Terminology will be defined, the economic impact of tourism will be discussed, tourism motivators will be identified, and the present structure and organization of the industry will be examined. Newfoundland and Labrador’s tourism marketing position, competition, potential consumer markets, and sales techniques will be identified and discussed.

AT1150 Water Safety
This course introduces students to basic water safety techniques. Students will acquire theoretical knowledge and personal skill in small craft safety and rescue techniques for canoeing and sea kayaking. Life Saving Society of Canada “AquaAdults” swimming techniques will be introduced and practiced. It is expected that students will gain the knowledge and skills necessary to participate safely in water related activities.
Prerequisite(s): Students should be able to swim moderately upon entrance into the program and will be required to fulfill the requirements of the water safety course by the end of Semester 2.

AT1220 Heritage Interpretation I
This course will provide an opportunity to develop a variety of visual, verbal and written interpretive techniques and skills enabling students to better describe the environment to students.
Prerequisite(s): CM1400

AT1221 Heritage Interpretation II
This course aims to further the student’s knowledge, confidence and skill in all aspects of minimum impact travel, wilderness navigation and group leadership; ability to lead a group safely and efficiently in a

Available through Distributed Learning
Available through correspondence
variety of wilderness environments, both on land and water, exhibit high personal competence and confidence in planning, developing and leading group interpretative outings; identify, assess, and respond to wilderness hazards, further skills in group menu planning, food packaging, and food preparation in a wilderness environment; ability to select, use, care for and store personal and group wilderness travel equipment.

Prerequisite(s): AT1220, CS1600, any two of: BL2210, BL2230, GE1120, BL1120

AT1300 Ethics for Sustainable Tourism
This course begins with a definition of sustainable development, its origin and its implementation home and abroad. The relationship of sustainable development and tourism will be examined and topics such as ecotourism’s role will be discussed. Ecotourism guidelines for nature tour operators, and ecotourism pitfalls will be examined. To ensure tourism product, customer service is another key factor and this topic will be addressed in this course.

AT1400 Winter Travel I
Students will acquire theoretical knowledge and personal skill in classic technique, skating technique, and hill man oeuvres. Equipment requirements and selection, sizing, care, and waxing will also be discussed. Students will be introduced to snow shoeing.

AT1401 Winter Travel II
Students will acquire theoretical knowledge and personal skill in Nordik (backcountry) skiing techniques. Hill man oeuvres on backcountry equipment will be taught. Ski equipment and accessories will be discussed. A wilderness expedition will further develop backcountry ski technique; winter camping and wilderness survival skills; weather observation skills; avalanche awareness; route selection; map & compass use, and leadership skills. Students will be introduced to snowmobile travel.

Prerequisite(s): AT1400, CS1600

AT1560 Canoeing
Students will acquire theoretical knowledge and personal skill in: strokes, manoeuvres, and rescue on flat and moving water; theory and practice of canoeing instruction; and canoe tripping leadership skills. Students will have an opportunity to be tested for the Canadian Recreational Canoe Association (CRCa) certification for both flat water and moving water (levels 1 & 2). Students who choose to be tested for certification will be charged a certification fee.

Prerequisite(s): CS1600

AT1550 Wilderness Travel
This course is designed to teach the student the necessary skills required to travel in any wilderness setting.

AT1560 Canoeing
Students will acquire theoretical knowledge and personal skill in: strokes, manoeuvres, and rescue on flat and moving water; theory and practice of canoeing instruction; and canoe tripping leadership skills. Students will have an opportunity to be tested for Paddle Canada Lake Water Canoeing and Canoe Tripping. Students who choose to be tested for certification will be charged a certification fee.

Prerequisite(s): CS1600, AT1550, Wilderness First Aid Certification with CPR/AED

AT1620 Survival Training
This module will expose the student to the necessary skills required to travel and survive in a wilderness setting. The module will cover practical and theoretical information on trip preparation, factors that affect survival, survival techniques, practical field knowledge related to first aid, cold weather camping, site reconnaissance, GPS, map and photo interpretation, compass using and emergency procedures.

AT2520 Sea Kayaking
Students will acquire theoretical knowledge and personal skill in strokes, manoeuvres, and rescue procedures. The evolution of the kayak and the sport, plus the equipment that is available, will be discussed. Kayak tripping leadership skills will be introduced. Students will be assessed by Paddle Canada Sea Kayaking Level 1.

Prerequisite(s): AT1150, CS1600

AV1220 Basic Aircraft Instruments I (M, E)
This M and E course will give learners an understanding of the requirements for operation, and maintenance practices, of various types of mechanical and electrical transmitters, transducers, and instruments that are used to provide operational information for most common aircraft engine associated systems. Practical Projects will involve inspecting, testing, identifying various engine instrument system components.

Prerequisite(s): AT1150, CS1600

AV1320 Aircraft Communications Equipment (M, E)
This is an M and E introductory course designed to give the learner the basic concepts of all communication systems used on aircraft. Emergency Locator Transmitters (ELT’S) will also be looked at. Basic radio theory will be studied to the block diagram level. Ramp testing, removal and replacement of various communication systems will take place.

Prerequisite(s): PE1140

AV1500 Basic Navigation 1 (M, E)
This M and E course provides learners with information about basic navigation principles and terms used in aircraft systems. Installation practices regarding bonding, panel layouts, antenna installations and remote mounting equipment are discussed. The course will also include descriptions of some common navigation system types.

AV1510 Navigation System Installation (E)
This E course is designed to give the learners practical experience in installing Avionic Navigation equipment on aircraft. Learners will gain procedural knowledge of the steps involved in designing, and implementing systems installation procedures, including associated regulatory supporting documentation.

Prerequisite(s): PE1200, GM1320

AV1520 Auto Flight Troubleshooting (E)
This E only course will have the learners troubleshoot various avionic navigation equipment. It describes Analogue synchronous transmitting and receiving principles, and explains how newer Data buss technology is used in modern aircraft. Topics also include systems that record and display data. Practical applications include testing and troubleshooting installed Avionic systems.

Prerequisite(s): AV1220

AV1510 Auto Flight Theory (M, E)
This M and E course of study will cover servos systems and components, aircraft dynamics, pitch, roll, yaw, speed commands, and the fundamental principles involved in the automatic flight of both fixed wing and rotary wing aircraft.

Prerequisite(s): AV1220

AV2540 Auto Flight Ramp Testing (M)
This M only course will have the learners ramp test the auto pilot system in a fixed wing aircraft including the associated flight director modes.

Prerequisite(s): AV2510

AV2570 Auto Flight Troubleshooting (E)
This E only course will have the learners troubleshoot various auto pilot defects on the colleges aircraft.

Prerequisite(s): AV2510

AV2510 Monitoring and Digital Systems (E)
This E course provides information regarding the design of communication systems between individual avionic pieces of equipment. It describes analogue synchronous transmitting and receiving principles, and explains how newer Data buss technology is used in modern aircraft. Topics also include systems that record and display data. Practical applications include testing and troubleshooting installed Avionic systems.

Prerequisite(s): AV1220

BL1020 Introductory Biology I ●
This is a Biology course designed for students who have not completed high school Biology or who require upgrading in Biology for college and College-University Transfer Biology courses. Students will learn the microscopic levels of Biology that will lead them into the macroscopic levels covered in Introductory Biology II. A combination of both Introductory Biology I and II will achieve better understanding of basic concepts that are required for success in various Biology courses in Health Sciences, Natural Resources and/or University programs. Students will be expected to complete assignments and labs to show their understanding of the concepts.

BL1021 Introductory Biology II ●
This is a Biology course designed for students who have successfully passed Introductory Biology I. Students will carry over their knowledge from Introductory Biology I to gain a thorough understand-
ing of Biology at the macroscopic level. A combination of both introductory Biology I and II will achieve better understanding of basic concepts that are required for success in various Biology courses in Health Sciences, Natural Resources and/or University programs. Students will be expected to complete assignments and labs to show their understanding of the concepts.

**Prerequisite(s):** BL1020

**BL1060 Biology for Aboriginal Students**

The purpose of this course is to provide aboriginal students with a broad survey of the discipline of Biology. Topics will be explored using both traditional First Nation’s and scientific frameworks, emphasis being balanced between traditional Ecological Knowledge (TEK), as well as the scientific method. This course will introduce students to the study of plants, animals and food systems; ethno-botany will be introduced to complement the ‘system of scientific classification’. A laboratory component will allow students to conduct experiments that will further their understanding of plant and animal life.

**BL1100 Biology**

This is an introductory course in the first semester of the Natural Resources cluster designed to prepare the student for further biology related studies. Emphasis in labs and field trips will be directed to gaining an appreciation of natural ecosystems and associated life processes.

**BL1120 Biology**

This is an introductory course in the first semester of the Natural Resources cluster designed to prepare the student for further biology related studies. Emphasis in labs and field trips will be directed to gaining an appreciation of natural ecosystems and associated life processes.

**BL1130 Microbiology**

This is an introductory microbiology course designed to introduce students to the diversity of microorganisms, their relationship to environmental technology and the basic lab techniques used to identify and enumerate them. This course prepares students to apply microbiological techniques to monitor water and air quality, domestic and industrial water and wastewater treatment systems and site remediation projects.

**BL1170 Principles of Biology I**

Transferable to MUN Biology 1001

This is the first of two introductory courses developed for credit transfer to Memorial University of Newfoundland. The course is intended to be equivalent to MUN’s Biology 1001. The course contains the following subject areas: biology as science, basic biochemistry, introduction to cells, an introduction to metabolism, enzymes, and homeostasis, plasma membrane structure and function (transport), origins of life, diversity classification, and taxonomy of life, and classification of the kingdoms, an introduction to Kingdom Monera, including the use of bacteria as the model for molecular genetics; viruses, introduction to Protists and autotrophic Protists; an introduction to plants including plant evolution, structure, growth, nutrition, transport, and reproduction.

**BL1171 Principles of Biology II**

Transferable to MUN Biology 1002

This is the second series of two introductory courses developed for credit transfer to Memorial University of Newfoundland. The course is intended to be equivalent to MUN’s Biology 1002. This course continues the discussion of the five biological kingdoms and includes the following subject areas: eukaryotic cell division, heterotrophic Protists, fungi, and animals. The animal discussions include an introduction to animal structure, tissues, organs, and organ systems, bioenergetics, homeostasis, nutrition (digestive systems), circulatory systems, internal transport (circulatory systems), gas exchange systems, excretion and osmoregulatory systems, regulatory systems, nervous systems, support and movement, and reproductive systems.

**Prerequisite(s):** BL1170 or BL1500 or MUN Biology 1001

**BL1260 Human Biology**

This course will provide an introduction to human biology, including a review of biochemistry, cellular biology, and human tissues. The primary emphasis will be an overview of the anatomy and physiology of the body systems, and is designed to provide a foundation to help the student understand the variety of medical tests and/or drugs available for diagnosis and treatment. This course will also include an introduction to microbiology.

**BL1300 Anatomy & Physiology**

This course is an introduction to the science of normal functions and phenomena of living things from the cellular to the whole body levels of organization. Emphasis will be placed on the principles of the functioning of the organisms and body systems in order to facilitate the understanding and relationship of biomedical instrumentation.

**Prerequisite(s):** CH1121

**BL1360 Anatomy and Physiology**

This course is an introduction to the structure of the human body and its systems.

**BL1330 Anatomy**

This course is an introduction to the science of normal functions of living things from the cellular to the whole body levels of organizations.

**BL1350 Anatomy and Physiology**

The focus of this course is on orientation to the structure of the human body and its systems. Emphasis will be on those systems related to movement such as the skeletal, skeletal muscular and nervous systems. The anatomy of these systems will be studied in a regional approach such as upper and lower limbs, head, neck and trunk. The student will participate in virtual labs using video and online interactive assignments.

**BL1400 Fish and Wildlife Biology I**

This course requires the use of reference resources, laboratory equipment and a suitable environment. It involves the study of the natural history of birds, fish and mammals, and a theoretical and practical understanding of the anatomy of birds, fish and mammals. It includes information on population biology, reproductive biology, feeding biology, ecology, behaviour of fish, birds and mammals; anatomical charts, species charts, storage of specimens and dissection procedures.

**Prerequisite(s):** BL1120

**BL1401 Fish and Wildlife Biology II**

This course requires the use of resource references. It involves the study of fish and wildlife behavior and nutrition. It includes information on population ecology, environmental physiology, feeding biology, physiology and ecology.

**Prerequisite(s):** BL1400

**BL1500 Biology**

This is an introductory biology course with emphasis placed on the following: a study of the cell, its structure and function; a comparison between animal and plant cells; a brief study of selected organisms of the Protista Kingdom and a comparison between eucaryotes and prokaryotes; a study of DNA and RNA and protein synthesis; an introductory study of gene regulation in prokaryotes and eucaryotes; the principles of heredity; and introductory study of biotechnology; a study of tissues; an introduction to anatomical and medical terminology, and a study of the skeletal system.

**BL1501 Biology**

This is a course in human anatomy and physiology with emphasis being placed on the following systems: cardiovascular, lymphatic, respiratory, endocrine, nervous and sensory organs, and related medical terminology.

**Prerequisite(s):** BL1500

**BL1600 Human Biology**

This course will provide an introduction to human biology, including a review of biochemistry, cellular biology, and human tissues. The primary emphasis will be an overview of the anatomy and physiology of the body systems, and it is designed to provide a foundation to help the student understand the variety of medical tests and/or drugs available for diagnosis and treatment. This course will also include an introduction to microbiology.

**BL1700 Ornithology**

This is an introductory course in ornithology. The course will focus on species which inhabit insular Newfoundland. Students will learn to recognize by sight and sound songbirds, raptors, seabirds, waterfowl and others. The ecology and behaviour of selected species will be discussed, as well as introductory avian anatomy and physiology.

**BL1800 Biology**

This is a continuation of the second semester anatomy and physiology course with emphasis on the following systems: digestive, urinary, and reproductive, and related medical terminology.

**Prerequisite(s):** BL1501

**BL2210 Freshwater and Wetlands Ecosystems**

This course will study streams, rivers, ponds, lakes and the various classifications of wetlands. The formation of bodies of water will be discussed. The various plants, mammals, birds, invertebrates and insects common to the ecosystem will be identified. The interrelationships among the inhabitants of these ecosystems will be investigated. Threats to these ecosystems will also be studied.

**Prerequisite(s):** BL1120

**BL2220 Boreal Forest and Barren Ecosystems**

This course will introduce Canadian forests and then focus on the boreal forest and barren areas and their characteristics. Students will learn to identify the various forest and barren plants, mammals, birds and insects that frequent these ecosystems, and their interrelationships will be discussed. Emphasis will be placed on interpretation in a field setting.

**Prerequisite(s):** BL1120

**BL2230 Coastal Marine Ecosystems I**

This course will introduce students to the North Atlantic coastal marine environment including the intertidal and subtidal environment; beaches and sand dunes; estuaries, islands and ledges; and deeper offshore waters. Field trips to representative...
environments will be undertaken. Emphasis will be placed on the identification of organisms and the ecology of the marine environment.

**Prerequisite(s):** BL1120

**BL2321 Coastal Marine Ecosystems II**
This course will study the marine mammals, fish and birds of the boreal North Atlantic Ocean with emphasis on identification, adaptation, life histories, and the basic physiological processes. The aspects of the boreal ocean environment which contribute to diversity, dispersal and adaptations will also be examined.

**Prerequisite(s):** BL2230

**BL2330 Cardiopulmonary Physiology**
This course is an in-depth study of the anatomy and physiology of the cardiopulmonary and other body systems, which have an impact on respiratory medicine. Included will be the analysis of various disease conditions which affect the human body, especially the cardiopulmonary components.

**Prerequisite(s):** Successful completion of Semester 3.

**BL2340 Cardiopulmonary Pathophysiology**
This course will enable the student to describe the pathophysiological manifestations, clinical signs, symptoms, and therapeutic management of the major cardiopulmonary diseases, in order to facilitate the development of treatment protocols.

**Prerequisite(s):** Successful completion of Semester 3.

**BL2400 Microbiology**
This course consists of an introduction to the principles and methods of microbiology. Selected topics include the classification, structure, staining and cultivation of bacteria, bacterial physiology and genetics, control of micro-organisms, host-parasite relationships and diagnostic immunology.

**Prerequisite(s):** Completion of all third semester courses

**BL2410 Microbiology**
An introductory course covering the basic aspects of microbiology with emphasis on the role of microorganisms in disease and methods of control utilized in respiratory care.

**Prerequisite(s):** Successful completion semester 3

**BL2421 Clinical Microbiology**
This course consists of a systematic study of the pathogenicity, epidemiology, morphology and laboratory identification of various microbes associated with infectious disease. Major emphasis will be on bacteria with a brief study of clinically important yeast-like fungi. Also included is an organ system approach to laboratory diagnosis of infectious diseases and an introduction to the Transportation of Dangerous Goods.

**Prerequisite(s):** BL2400

**BL3410 Clinical Microbiology**
This course is an introduction to the isolation, identification and reporting of microorganisms isolated from clinical specimens originating from the head and neck, the gastrointestinal tract, and other miscellaneous sources. It is at an intermediate level and is intended to introduce the process of standard techniques and methodologies used to identify common pathogens in a routine clinical microbiology laboratory. Standardization of laboratory techniques, terminology, methods, and reporting will be emphasized. Quality control and quality assurance is incorporated.

**Prerequisite(s):** BL2421

**BL3411 Clinical Microbiology**
This course involves laboratory isolation, identification and reporting of microorganisms from clinical specimens originating from the head and neck, the gastrointestinal tract, and other miscellaneous sources. It is at an advanced level of understanding and interpretation. It is intended to introduce standard techniques and methodologies used to identify common pathogens in a routine clinical microbiology laboratory. Standardization of laboratory techniques, terminology, methods, and reporting will be emphasized. Quality control and quality assurance is incorporated.

**Prerequisite(s):** Successful completion of semester 7

**BL4410 Clinical Microbiology**
This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of semester 8

**BU2120 Building Codes and Services**
This course will provide learners with the knowledge and skills to address questions regarding public safety, fire safety, plumbing systems and ventilation systems. Learners will use various codes and standards to solve design problems for new and existing structures.

**Prerequisite(s):** DR1220

**Co-requisite(s):** DR1240

**BU2250 Electrical Systems**
This course is comprised of lectures and labs designed to introduce the learner to building electrical systems. Design concepts and procedures are studied, with direct applications in the preparation and production of electrical systems drawings.

**Prerequisite(s):** PHT101, ET1101

**Co-requisite(s):** DR3110

**BU2260 Plumbing Systems**
Plumbing Systems is a course designed to introduce learners to terminology and design methods used in the plumbing and fire protection aspects of building services. The course begins with an introduction to hydraulics, piping, and the associated terminology, and the advances to areas of water supply and distribution, sanitary drainage, storm drainage and fire protection. The course includes a detailed study of code requirements and the preparation of computerized working drawings.

**Prerequisite(s):** PHT101, DR3111

**Co-requisite(s):** GC1800

**BU2270 HVAC**
This course is designed to introduce the learner to building heating, ventilation and air conditioning (HVAC) systems. The course begins with an introduction to historical and contemporary HVAC systems emphasizing current energy conservation. Climate, comfort, passive and active design strategies are discussed, with a detailed study of building heat gain and building heat loss.

**Prerequisite(s):** BU2260

**Co-requisite(s):** DR4110

**BU2300 Arch Building Codes I**
This is the first of two architectural building codes courses. The course gives a brief examination of the purpose and contents of building codes in general. It also gives an overview of how the National Building Code of Canada is formatted and how it is to be used. The course concentrates on the code requirements given in the National Building Code of Canada for houses and small buildings. Emphasis is placed on selecting and sizing building components.

**Co-requisite(s):** DR3110

**BU2301 Arch Building Codes II**
This course is a continuation of BU2300 - Building Codes I and concentrates on the safety requirements of buildings covered by Part 3 in the National Building Code of Canada. It is designed to help the learner interpret and apply regulations through a series of practical exercises.

**Prerequisite(s):** BU2300

**BU2410 Building Science I**
This is the first of two building science courses. The course studies how heat and air/water flow through a building envelope particularly from the inside to the outside of the enclosure. It also investigates steps to reduce/prevent the negative results which may result from this movement. Emphasis is placed on the selection and arrangement of building components.

**Co-requisite(s):** DR3110

**BU2411 Building Science II**
This is the second of two building science courses. The course deals with heat, air and water movement through the building envelope particularly from outside to inside the enclosure. It examines the way different wall and roof assemblies perform. Learners are required to solve technical problems based on building science theory. Emphasis is placed on the “barrier” concept of enclosure design. Special emphasis is placed on the barriers in roofs.

**Prerequisite(s):** BU2410

**Co-requisite(s):** DR3111

**BU3200 Arch Building Services III**
This course is designed to introduce the student to building heating systems. The course begins with an introduction to historical and contemporary heating sources emphasizing current energy conservation. Climate, comfort, and design strategies are discussed, with a detailed study of building heat flow and total building heat loss. Heating systems studies include: electric, hydronic, warm air, and steam with design and detailed applications.

**Prerequisite(s):** BU2201

**Co-requisite(s):** DR4100

**BU3201 Arch Building Services IV**
This course, the fourth in a series of services courses introduces students to air movement and conditioning through studies of building cooling requirements. Emphasis is placed on duct design, heat gain, psychrometrics and equipment selection. Technical design projects are integrated into the course to emphasize visualization and coordination in the preparation of HVAC working drawings.

**Prerequisite(s):** PR2300, BU3200, DR4100

**Co-requisite(s):** DR4101

**BU3300 Building Specifications**
This course deals with the interpretation and writing of specifications for building projects. A study is made of specification writing theory and procedures. Learners are expected to analyze specifications for form intent. Projects include identifying technical and legal requirements and translating them into written form. Subject material includes contracts, master format, specification types, and specification writing.

**Prerequisite(s):** GC3230, DR4110

**CAG200 Structural Design**
This course will prepare the student to analyze and design basic concrete structures using the various design aids such as handbooks, software. The course generally deals with design and analysis of individual
structural members such as beams, walls, slabs, and columns.

Prerequisite(s): CF2501

CA2101 Structural Design
A study of the application of principles of mechanics to the solution of problems commonly met within the field of engineering practice. Procedures in problem solving, codes, specifications and standards, loads and structural systems, properties of materials, tension members, axially loaded compression members, effective length, design of beams and connections, use of steel handbook, and roof trusses are major topics to be covered.

Prerequisite(s): CA2100

CA2110 Structures I
This is the first of two courses in the application of fundamental design concepts in structural design using Canadian design standards. This course prepares the learner to analyze and design basic steel and timber structural elements. Topics include: material properties, design of tension and compression members, beams, columns, and connections.

Prerequisite(s): CF2531

CA2201 Soil Mechanics
The study of soils should be an important component in the education of Civil Engineering Technologists. Most structures such as bridges, roads and buildings rest either directly or indirectly upon soils. Therefore, the proper analysis of the soil and their design requirements are necessary to ensure a safe structure free of undue settling and/or collapse. This course will give the student an introduction in the field of Geotechnical Design based on knowledge gained in Soil Mechanics II. This course will continue from Soil Mechanics I. The course will use the theoretical information given in Soil Mechanics I and apply it to the area of Geotechnical Design. Emphasis will be placed on basic design considerations and properties of soils and the relationship to foundations, retaining wall, and slope stability. Basic theory will be supplemented by field and laboratory testing done to ASTM Standards.

Prerequisite(s): CA2200

CA2810 Soils & Foundations I
This is an introductory course in soil mechanics in which learners will acquire knowledge about the various types of soils used in the design and construction of civil projects. Identification, classification, and formation of soils will be addressed and learners will become familiar with the standard tests and procedures used to evaluate soils and their engineering properties.

Prerequisite(s): CF2711

CA2811 Soils & Foundations II
This course will build on the knowledge acquired in CA2810 and will introduce the learner to the field of Geotechnical Design. Learners will be required to determine and analyse the effects of soil properties on bearing capacity, slope stability of soils, consolidation, and settlement. Aspects covered include: shallow foundations, pile capacity and design, foundation settlement, and slope stability.

Prerequisite(s): CA2810

CA2900 Municipal Engineering
An introduction to zoning bylaws and zoning in general. Criteria are examined for the design and construction of roads, curb and sidewalks, width or right of way, storm and sanitary sewer collecting systems, water distribution systems and layout of utilities (electrical, phone, cable TV). Lectures are supplemented by labs in which related problems, field trips, and the actual lot layout, design of roads, water mains, sanitary sewer and storm sewer for an urban subdivision is carried out.

Prerequisite(s): SU1321

CA2920 Construction Methods
Construction methods will help learners to estimate construction costs and productivity rates of various types of equipment and apply previous knowledge from economics to Heavy Equipment. The course will deal with methods and operations utilized in heavy and marine construction, with emphasis placed on specifying the best equipment or process for the situation.

Prerequisite(s): MA1101

CD2100 Community Development
This is an introductory course to the field of community development. It introduces students to the major concepts, principles and challenges of the community development field. The course allows students to take a critical look at conventional approaches to development, as well as theoretical influences on current community development practice. Learners explore the diversity of roles and occupations within the field and become aware of ethical considerations and skills that are needed to successfully work in the field.

CD2300 Community Economic Development
This is an introductory course to the field of community economic development. The course covers the major concepts and essential elements used in the field of community economic development, and explains why a new approach to development is necessary. It introduces the history of community economic development in Newfoundland and Labrador, looks at successful examples elsewhere, and explores structures and strategies for facilitating community economic development. The course then introduces students to the methods of community planning and how they may be applied to the community economic development process.

CD2400 Managing in the VNP Sector
This course is an introduction to financing and managing in community economic development enterprises. It introduces various strategies for building community economies and for financing community economic development ventures. It examines the challenges of managing human and natural resources in the voluntary sector and non-profit (VNP) sector and introduces financial concepts and management instruments.

CE2101 Basic Communications Networks I
This course introduces learners to the concept of networking using a top-down approach. Throughout this course learners will examine the role and operation of networks including applications, protocols, devices, and media. Learners will also be introduced to wireless networks. This course also provides the learner with significant practical experience in networking. Upon completion of this course the learner should have a reasonable understanding of topics such as how Local Area Networks function, the role of IP addressing, and how data is reliably transported between hosts across the Internet. Learners will also be expected to construct a simple network and apply appropriate IP addresses and to configure connectivity between a wireless LAN client and a wireless access point.

CE2250 Electronic Analog Communications
This is an intermediate level electronics course designed to provide students with an introduction to...
the area of analog communications.
Prerequisite(s): MA2100; AE2300

CE2270 Electronic Analog Communications
This is an intermediate level electronics course designed to provide students with an introduction to the signals and processes of analog communications. 
Prerequisite(s): MA1101
Co-requisite(s): AE2320, MA2100

CE2280 Modulating and Encoding
This course is designed to provide learners with the foundation in the fundamental methods of modulating or encoding analog and digital signals for transmission over a modern communication system. The methods for the transmission of analog and digital signals across an analog medium are covered as well as the methods for transmitting analog and digital signals across a baseband digital medium. The impact of noise on these methods is also discussed.
Prerequisite(s): MA1101; CI1110

CE2700 Antennas and Microwaves
This course provides a comprehensive study of transmission lines, waveguides, and antennas with applications in radio systems. Topics covered include transmission line parameters; waveguides and components; antennas; antenna measurements; impedance matching with Smith charts.
Prerequisite(s): MA1101 ET2100; AE1200

CE2730 RF Transmission & Antennas
This course provides a comprehensive study of the basic principles of electromagnetic wave propagation as they are applied to transmission lines, waveguides, and antennas with applications in wired and wireless communications systems.
Prerequisite(s): MA1101, MP2140

CE2800 Industrial Communication Systems
This specialized course introduces the student to industrial communication systems, fieldbus, and networks for monitoring data acquisition and control systems used in an industrial environment. The lab component is designed to enhance the theoretical lecture component by implementing communication methods, networks, and an introduction to Microsoft Windows for installation and administration.
Prerequisite(s): ET2300; CP1150

CE2810 Industrial Communication Systems
This specialized course introduces the student to industrial communication protocols and systems for process control and automation systems in an industrial environment. The lab component is designed to enhance the theoretical lecture component by implementing communication methods, networks, and troubleshooting skills.
Prerequisite(s): CE1210

CE2900 Human Machine Interface Development
This course provides students with a comprehensive analysis of Human Machine Interface (HMI) development using commercial HMI software for monitoring and controlling automated machines and processes from custom designed graphical user interfaces. Learners will be introduced to the Supervisory Control and Data Acquisition (SCADA) system for process and utility industries
Prerequisite(s): CE2810

CE3100 Communications Systems
This is an advanced electronics communication course. It provides a solid background for understanding and analyzing the modern communications systems. 
Prerequisite(s): CE2250, CE2700

CE3110 Wireless Communications Systems
This is an advanced electronics communications course focusing on modern wireless communication systems. It provides a background in radio wave propagation. A systems-level approach to the architecture, design, and operation of AM, FM, and digital radio systems, cellular telephone systems, microwave and satellite-based communications systems is presented.
Prerequisite(s): CE2280, CE2730

CE3160 L2 – L4 Switching
The course will provide the student with the skills to design and configure Switch Layer 2 to Layer 4 hardware (ASIC) based campus switching and its applications which are poised to improve/replace CPU based routing. The course also supplies student with knowledge of Ethernet Over Sonet complementary technology to carry Switched Layer 2 plus Ethernet Switching over omnipresent SONET WAN (Ethernet Over Sonet or EoS) carrier.
Prerequisite(s): DP3410
Co-requisite(s): CE1200 or CR2430

CE3200 Digital Data Carrier Networks
This course provides a detailed and practical discussion of the system theory leading to the design and operation of the telecommunications networks. Emphasis is placed on the digital facilities currently in use by local telecommunications utilities. This course provides coverage of switched data technology used to provide voice data and video communications networks. Lectures are supplemented by projects, field trips and laboratory experiments
Prerequisite(s): DP3410, AE2320

CE3210 Carrier Networks
This course provides the learner with an in-depth understanding of how carrier transport networks operate at Layers 1 and 2. Learners will examine how traffic channels are constructed and the protocols used to manage the flow of traffic across a carrier network. Learners will combine theory with practical examples.
Prerequisite(s): CE2280

CE3370 Switching & L2 Security
This course continues the learner’s education in IP-based communications. In this course the learner will explore concepts in LAN design, the operation and configuration of LAN switches, VDSL networks, spanning tree protocol (STP), and LAN switch security.
Prerequisite(s): CE1210

CE3380 IP Routing, IPv6 & Security
This course continues the learner’s education in Internet Protocol (IP)-based communications with the concept of IP routing. In this course the learner will be introduced to packet switching and explore various methods of packet switching including static and dynamic routing; routing within private networks; routing between private networks; IPv6; and IP routing security.
Prerequisite(s): CE1210

CE3430 Network Cabling
This course will provide the learner with the necessary skills to design and implement high performance cabling systems. The performance level of the system determines the type of cabling and hardware to be used, the rules to be followed and the type of testing and documentation required to certify performance and trouble-shoot the installation. This course focuses on the physical layer of the OSI Network Model and includes the electrical and mechanical aspects of interfacing to the transmission medium and impact on performance they may have. This includes analysis of copper cabling, fibre optics, connectors and interconnection hardware, electrical code requirements for installation, performance certification and documentation best practices.
Prerequisite(s): CE1210

CE3510 Microwave Circuit Design
This course involves design and simulation of RF amplifier circuits. It provides the students with the analytical and modeling skills to analyze and assist in the development of RF microwave communications subsystems.
Prerequisite(s): AE2321, CE2270, CE2730

CE3600 Digital Communications I
This course provides a background in the mathematical theory and fundamentals of operation of digital and data communications.
Prerequisite(s): CE2250, DP2400

CE3610 Digital Communications II
This course focuses on the mathematical theory and fundamentals of operation of digital and data network communications.
Prerequisite(s): CE3600

CE3650 Unified Communications
This course provides learners with understanding of unified communications topics such as Voice over IP. Topics include unified communications components and technologies, PSTN architecture, VoIP, protocols and signaling, and unified communications deployment. Upon completion of this course learners may choose to pursue professional certification such as CCNA Voice.
Prerequisite(s): CE3380, CE3370

CF1100 Materials & Processes
The purpose of this course is to provide students with knowledge of the behaviour and characteristics of common engineering materials and an understanding of basic industrial processes. This is to enable students to select suitable materials and fabrication methods for the design and manufacture of parts to ensure successful service.
Prerequisite(s): CH1121

CF1101 Materials & Processes
The purpose of this course is to familiarize the student with production and fabrication processes and practices used in the industrial environment. The course provides an understanding of welding processes, non-destructive testing, corrosion, and casting-processes. An introduction to plastics and other engineering materials is provided.
Prerequisite(s): CF1100

CF1120 Materials and Processes
The purpose of this course is to familiarize the student with production and fabrication processes and practices used in the industrial environments. A continuation of CF1100 - Materials and Processes, this course will give an overview of non-metal materials used in engineering processes and an understand-
ing of surface treatments, coatings and corrosion. Manufacturing processes include metal removal, joining processes, and casting processes.

Prerequisite(s): CF1100, CF1160

CF2500 Strength of Materials I
This course has been included in the Civil Technology program curriculum as an engineering science. It is intended to be used as a basis for the study of design-oriented course material to be presented in the second and third years of the program.

Prerequisite(s): MA1101, PH1101
Co-requisite(s): MA2100

CF2510 Strength of Materials
This course is an introduction to the analysis of stresses in load-bearing structural members. Concepts of stress, strain, and elasticity are applied to elementary systems of normal, shear, and bending stress in order to give students an understanding of one of the fundamental building blocks upon which all engineering designs are based.

Prerequisite(s): MA1101, PH1101

CF2511 Strength of Materials
This second Strength of Materials course expands on previously studied concepts of simple stress, strain and elasticity, and provides a basic for elementary calculations in engineering design.

Prerequisite(s): CF2510

CF2530 Strength of Materials I
This is the first of two courses in the study of statics and strength of materials in preparation for further study in design-oriented courses. Learners will learn to analyze forces in structures and basic requirements to ensure safety of structures under applied loads. Major topics include: statics, basic concepts in strength of materials, centroids and moments of inertia, design properties of materials, direct stress, deformation and design, and torsional shear stress and torsional deformation. Laboratories include tensile, compression and shear testing of various engineering materials.

Prerequisite(s): MA1101; PH1101
Co-requisite(s): MA2100

CF2531 Strength of Materials II
This is the second of two courses in the study of statics and strength of materials in preparation for further study in design-oriented courses. Learners will learn to analyze forces in structures and basic requirements to ensure safety of structures under applied loads. Major topics include: statics, basic concepts in strength of materials, centroids and moments of inertia, design properties of materials, direct stress, deformation and design, and torsional shear stress and torsional deformation. Laboratories include tensile, compression and shear testing of various engineering materials.

Prerequisite(s): MA1101; PH1101

CF2540 Mechanics of Solids
This course is included in the Industrial, Mechanical, and Mechanical (Manufacturing) and Petroleum Engineering Technology programs’ curriculum as an Engineering science. It is part of the core courses that introduce students to the fundamentals of applied problem solving. It enables the economic and safe selection of materials for engineering components, which are subjected to loads when in service. Theoretical work supplemented by problem sessions are carried out on general force systems, reactions, free body diagrams, stresses and planes; centroids and second moments of area; shear force and moments in beams; stresses in beams and beam design.

Prerequisite(s): PH1101, MA1101

CF2610 Building Materials I
This course examines the properties, limitations, and application of wood and concrete as it relates to building design and construction.

CF2611 Building Materials II
This course examines the properties, limitations, and applications of a number of different building materials. It is designed to help learners assess and select suitable materials for a variety of situations found in buildings.

Prerequisite(s): CF2610

CF2710 Materials and Testing I
This course has been designed to provide the learner with a working and hands on knowledge of common building materials, so that he/she will be better able to function as a technologist in the building and heavy construction field. This course will provide the learner with a basic knowledge of the characteristics, uses and application of common construction materials and the general construction specifications associated with each material. Materials such as concrete and aggregate; their properties, components, uses, production and construction methods will be studied. Basic theory will be supplemented by laboratory testing of aggregate and concrete done to CSA standard. Emphasis will be placed on decision-making for the proper selection and use of the various components discussed in each material. Course work will be supplemented by field trips and in-shop demonstrations.

Prerequisite(s): CM1401, DR1220

CF2711 Materials and Testing II
This course has been designed to provide the learner with the working and hands on knowledge of common building materials, so that he/she will be better able to function as a technologist in the building and heavy construction field. This course will be a continuation of CF2710, Materials and Testing I. It will provide the learner with a hands-on approach to the testing, selection, use and application of common building materials, such as asphalt and aggregate; and tested under laboratory conditions. Wherever possible, in lab work, will be supplemented with field trips, videos and guest lectures.

Prerequisite(s): CF2710

CF3200 Materials and Corrosion
This course will introduce students to the physical and mechanical properties of materials commonly used in the chemical processing industries. It will examine the factors that promote the corrosion of these materials when used in industrial processes. Students will also examine a variety of means of controlling and monitoring corrosion and corrosion processes in chemical industries.

Prerequisite(s): CH1121

CF3420 Structural Design
This course is a continuation of Strength of Materials CF2500 and expands on previously studied concepts with major emphasis on structures and requirements based on building shapes. Emphasis is also placed on calculations leading to the selection of beams and columns based on shear forces, bending moments, and deflections produced by static loads. In addition, students are expected to have a thorough knowledge of the preparation of detailed steel shop drawings including connections and dimensioning, and to produce structural drawings as partial fulfillment of the requirements for the major technical project PR2210.

Prerequisite(s): CF2500

CF3440 Structural Design
This course is an introduction to structural design and strength of materials. Emphasis is placed on calculations leading to the selection of structural members based on shear forces, bending moments, and deflection produced by static loads, with an application towards architecture and building construction.

Prerequisite(s): MA2100, PH1101

CF3610 Building Materials III
This course examines the properties, limitations, and application of a number of different building materials. It is designed to help learners assess and select suitable materials for a variety of situations found in buildings.

Prerequisite(s): CF2611

CG1200 Health Care & Safety I
This course serves as an introduction to the hospital environment, its organization and management. Students will be familiarized with the health care system of Canada. The application of safety in the hospital environment, with a special emphasis on the concepts of electrical safety.

Prerequisite(s): CM2200
Co-requisite(s): CG3400

CG1201 Health Care & Safety II
This course is a continuation of CG1200 and serves to familiarize the student with equipment control systems and procedures utilized by Biomedical Engineering Departments. The concepts of quality assurance as well as standards involved in the safe use of electricity in health care institutions will be addressed. Students will also become familiar with fire, biological and environmental safety issues as they relate to the hospital environment.

Prerequisite(s): CG1200, CM2200
Co-requisite(s): CI3401

CG1400 Production Coordination
This course will expose students to the operation of a production room. Students will become competent in the use of the CAD system, costing for production jobs, and the application of lean manufacturing techniques to produce a product according to industry standards. In addition, students will develop skills in employee-employer relations.

Co-requisite(s): EX1210

CG1500 Work Methods and Measurement
This course is designed to introduce the student to the basics of time and motion study. It will provide a student with a basic understanding of time study techniques. It comprises various topics in predetermined time and work measurement systems. The intent is to develop in the student a full understanding of the elements of these systems and the capability to create and implement them. It also provides the student with the basic tools used in a lean manufacturing enterprise.

Prerequisite(s): IC1100

CG1700 Environmental Design
This course will introduce learners to the fundamental architectural design with emphasis on applying basic architectural principles, conventions and sustainable building practices. It will also further develop the learner’s understanding of architectural practice.

CG1800 Building Site Development
This is a two part course that teaches learners the requirements of building site development. The first section is an introduction to surveying while the second section deals with the actual site develop-
CG2100 Urban Planning (Interim)
This course will provide the student with an opportunity to utilize learned theory and apply to an actual subdivision selection, planning, and service design. Students will design a residential subdivision for given lot sizes, dwelling standards, zoning, and other internal and external site factors.
Prerequisite(s): SU1210

CG2160 Lean Methods
This is an introductory course that provides the student with the basic tools used in a lean manufacturing enterprise. It lays the foundation for many of the topics that are done in detailed applications within the Industrial and Manufacturing disciplines. The course provides an overview of quality, production systems, operation designs and applications of the lean manufacturing philosophy of identifying and eliminating waste through continuous improvement of products and services.
Prerequisite(s): G1500

CG2330 Planning & Estimating I
This course is an introduction to the disciplines of cost estimating, project management, scheduling and planning for construction purposes.
Prerequisite(s): CB2420

CG2331 Planning & Estimating II
This course is a continuation of CG2330 - Planning & Estimating I. Learners will use commercially available computer software to prepare construction cost estimates and schedules. This course will also provide the learner with the opportunity to apply technical material studied in earlier courses of the Civil Engineering Technology (Co-op) Program to the construction management process.
Prerequisite(s): CG2330

CG2340 Construction Estimating & Planning I
This course is an introduction to the disciplines of cost estimating and planning for construction purposes. It brings together the accumulated knowledge the student has assimilated over two years to enable him/her to understand the principles of cost estimating and to develop basic skills in taking off and pricing construction materials.
Prerequisite(s): CB2420

CG2341 Construction Estimating & Planning II
This course is a continuation of Construction Cost Estimating and Planning I and is intended to enhance the skills of the student. Students will be required to use commercially available computer software to prepare cost estimates. This course will also provide the student with the opportunity to apply to the planning process much of the technical material studied in earlier courses of the Civil Engineering Technology program.
Prerequisite(s): CG2340

CG3100 Construction Management
This course is intended to provide the student with knowledge of the construction industry to better enable him/her, on attaining sufficient practical experience to function as an effective construction manager.
Prerequisite(s): CG2340
Prerequisite(s): LW1600

CG3200 Business & Project Administration
This course examines the fundamentals of economics, types of businesses, and the administrative process as it related to design construction projects. It is designed to help students understand their role in the economics and administration of the design and construction industry.
Prerequisite(s): LW1610, DR3101

CG3230 Procurement & Contract Administration
This course examines the fundamentals of economics, types of businesses, and the administrative process as it relates to design construction projects. It is designed to help learners understand their role in the economics and administration of the design and construction industry.
Prerequisite(s): DR4100, BU3200, BU3300

CG3300 Architectural Cost Analysis
This course is an introductory course designed to provide students with a basic understanding of the various types of estimates commonly used in the design and construction industry. This course deals mainly with the elemental cost analysis method of estimating with computer applications where applicable.
Prerequisite(s): DR4110, BU2270

CG3320 Estimating for Buildings
This course is designed to provide learners with a basic understanding of the various types of estimates commonly used in the building design and construction industry. This course addresses both elemental cost analysis and building construction estimating. Computer-generated spreadsheet applications are used.
Prerequisite(s): DR4110, BU2270

CG3400 Engineering Management
This course is intended to familiarize the student with the role of management in industry. Topics covered include project representation and analysis using CPM, and PERT as well as several methods of management decision-making with a mathematical approach. The course provides the basic methods used for project management and control. It gives an appreciation of the role of management in industry, as well as providing management techniques used in various applications of decision-making. Students are instructed in the use of project management software and they are enabled to identify business opportunities and acquire the skills necessary to set up and operate their own business.
Prerequisite(s): MA1101

CG3500 Production Planning
This course analyzes the principles of production management by bringing together topics of planning and approaching them as an integrated production plan, interpreting various components such as master scheduling, resource planning, manufacturing control and flexible manufacturing.
Prerequisite(s): CG1500

CH1030 Introductory Chemistry I
Introductory Chemistry I is a Comprehensive Arts and Science (CAS) Transition course. It is the first of two Chemistry courses designed to prepare students for entry into a number of technical programs at the College level as well as CAS Transfer: College-University. The purpose of this course is to give students an introduction to basic chemical principles and laboratory procedures.
Prerequisite(s): CH1030

CH1031 Introductory Chemistry II
Introductory Chemistry II is a Comprehensive Arts and Science (CAS) Transition course. It is the second of two Chemistry courses designed to prepare students...
**CH1106 Chemistry for Aboriginal Students**
The purpose of this course is to provide aboriginal students with an introduction to the discipline of chemistry. First, the role of chemistry in modern society will be examined from a First Nations’ perspective. Then, introductory concepts will be introduced. These will include: atomic structure, the periodic table, chemical bonding, and nomenclature.

**CH1120 Chemistry**
This is an introductory course designed to give students a knowledge and understanding of the fundamental concepts which will form the basis for further studies in science and technology. Topics include: atomic structure, periodic table, chemical bonding and nomenclature, stoichiometry and measurement, chemical reactions, gas laws, solution and solubility.

**CH1121 Chemistry**
This course will develop further the fundamental concepts of chemistry, with emphasis on those relevant to the chemistry of materials and to the processes of polymer chemistry, thermochemistry, chemical reaction rates and equilibrium, electrochemistry, metals and alloys.

**Prerequisite(s):** CH1120

**CH1135 Chemistry**
Transferable to MUN Chemistry 1010
This is an introductory course in chemistry dealing with the fundamental laws of chemistry, the nature of the matter and the physical states of matter, the structure of the atom, electronic structure and the periodic table, significant figures and scientific notations, measurements and units, writing and balancing chemical equations, chemical reactions, stoichiometry and stoichiometric calculations, chemical bonding, gases and gas law calculations, and thermochemistry.

**Prerequisite(s):** High school chemistry is recommended. Mathematical skills are required, and students with low marks in high school Level III academic mathematics (less than 70%) are strongly recommended to upgrade their mathematics background before undertaking this course.

**Co-requisite(s):** Mathematics course is strongly recommended.

**CH1136 Introductory Chemistry II**
Transferable to MUN Chemistry 1011
This is a continuation of CH1135. This course will further develop the fundamental concepts of chemistry, with emphasis on physical properties of matter, intermolecular forces, molecular geometry and chemical bonding theory, rates of reaction, chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: physical properties of matter, molecular geometry, rates of reaction, chemical equilibrium, acid-based equilibria, precipitation equilibria, redox reactions and electrochemistry.

**Prerequisite(s):** CH1135 or MUN Chemistry 1010

**CH1140 General Chemistry I**
Transferable to MUN Chem 1050
This course is designed for students who have previously studied chemistry either in high school or university. It is designed to give students a knowledge and understanding of the fundamental chemical concepts which will form the basis for further studies in the field of science. Major topics are: matter - its properties and measurement, atoms and atomic theory, chemical compounds, chemical reactions, introduction of reactions in aqueous solution, gases and hydrogen, electrons in atom, the Periodic Table and some atomic properties, chemical bonding I: basic concepts, chemical bonding II: additional aspects, liquids, solids, and intermolecular forces, solutions and physical properties.

**Prerequisite(s):** At least 75% in high school Chemistry 3202 and a pass in high school Advanced Mathematics 3205. Students must have a strong background in pre-university chemistry. The main objective of this course is not to re-teach core chemical concepts but to build on them. Students with a weak chemistry background are advised to register for Chemistry 1135.

**Co-requisite(s):** MA1130 (or MUN Math 1000) or MA2100. A physics course would be helpful especially for students who did not take Physics in high school.

**CH1141 General Chemistry II**
Transferable to MUN Chemistry 1011
This is a continuation of CH1135. This course will further develop the fundamental concepts of chemistry, with emphasis on physical properties of matter, intermolecular forces, molecular geometry and chemical bonding theory, rate of reaction, chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: physical properties of matter, molecular geometry, and rate of reaction, chemical equilibrium, acid-based equilibria, redox reactions and electrochemistry.

**Prerequisite(s):** CH1135 or MUN Chemistry 1010

**CH1150 Introductory Chemistry III**
Transferable to MUN Chemistry 1031.
This course is designed to prepare students who have completed Chemistry 1131 (or MUN chemistry 1011) for second year Chemistry courses. It deals with the topics in greater depth with emphasis on problem solving, as in Chemistry 1141.

**Prerequisite(s):** CH1131 or MUN Chem 1011.

**CH1200 Chemistry**
This is an introductory course in chemistry dealing with the fundamental laws of chemistry, the nature of matter and structure of the atom, the periodic table, chemical bonding, stoichiometry, the physical states of matter and solutions. The quantitative aspects of chemistry are stressed.

**CH1201 Chemistry**
This is a continuation of CH1200. Major topics include: the gas laws, oxidation-reduction, electrochemistry, chemical nomenclature, chemical kinetics, nuclear chemistry and chemical equilibrium. The quantitative aspects of chemistry are stressed.

**Prerequisite(s):** CH1200

**CH2200 Chemistry**
This is a continuation of the second semester course. Major topics include various types of chemical equilibria such as gaseous equilibria, solubility equilibria, and acid/base equilibria. The quantitative aspects are stressed.

**Prerequisite(s):** CH1201

**CH2250 Clinical Chemistry**
This course will introduce laboratory safety, basic laboratory techniques and skills, laboratory instrumentation and quality control procedures. This is then applied to the study of the theoretical and practical aspects of the analysis of body fluids. Major topics studied include: liver function, enzymology, acid/base balance, electrolytes, kidney function and urinalysis, toxicity, thyroid function, and immunoassays.

**Prerequisite(s):** CH2340, CH2250

**CH2700 Environmental Chemistry I (Analytical)**
This is an introductory course in chemical analysis. It consists of classical methods of quantitative chemical analysis such as gravimetry and titrimetry, as well as simple instrumental techniques used for field measurement (pH, colorimetry, conductivity, dissolved oxygen). Students are also exposed to Environmental Sampling and statistical treatment of data.

**Prerequisite(s):** CH1120

**CH2720 Analytical Chemistry**
This is an introductory course in chemical analysis. It will introduce learners to the classical methods of quantitative chemical analysis such as gravimetry and titrimetry, as well as simple instrumental techniques used for field measurement (pH, colorimetry, conductivity, dissolved oxygen).

**Prerequisite(s):** CH1121

Available through Distributed Learning © Available through correspondence
CH2450 Industrial Chemistry II

This course is designed to provide students with the basics of organic and inorganic chemistry as it is applied to the oil and gas industry. It also covers many of the standard chemical tests used in the oil and gas industry for analyzing crude oils and refinery products.

Prerequisite(s): CH2450

CH3510 Clinical Chemistry

This course builds upon previous topics in clinical chemistry. It requires students to apply their pre-requisite knowledge and skills in a simulated hospital laboratory setting. Emphasis is on safe work practices, automated analysis, quality control principles and result interpretation.

Prerequisite(s): CH2511

CH3511 Clinical Chemistry

This is a comprehensive course in clinical chemistry that requires students to apply their pre-requisite knowledge and skills in a simulated hospital laboratory setting. Using appropriate safety guidelines, students practice the pre-analytical, analytical and post-analytical phases of the testing process for clinical specimens. Emphasis is on development of technical competence, use of quality assurance principles and applications of critical thinking skills to data interpretation and instrument troubleshooting. It is designed to prepare students to enter the clinical phase of the program at an affiliated hospital.

Prerequisite(s): Successful completion of semester 7

CH3700 Environmental Chemistry III

This is the second of two courses dealing with the chemical interactions which occur in natural environments. The focus is on air and soil chemistry, and emphasis is placed on Organic Chemistry. The fundamental aspects of nomenclature, structure, properties, and reactions of organic compounds are discussed and applied to studying the sources and toxicity of environmentally important organic compounds.

Prerequisite(s): CH2700

CH4510 Clinical Chemistry

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

Prerequisite(s): Successful completion of semester 8

CI1100 Electronic Instrumentation

This is a practical course in which students become acquainted with the variety of laboratory and test equipment that could be encountered in a working environment. The course focuses on applications of the concepts learned.

Prerequisite(s): ET1101

CI1110 Signals & Measurements

This course will introduce the learner to the fundamental concepts of signals and measurements. Learners in the course will learn how to identify different types of signals, select the appropriate test equipment, take measurements, and interpret and report results.

Prerequisite(s): ET1101

CI1210 Instrumentation Controls & Automation

This course provides a comprehensive treatment of sensors and methods of measuring automated process variables. The student will be introduced to the underlying concepts and operation of industrial measurement devices and control systems.

Prerequisite(s): C12100

CI1211 Instrumentation Controls and Automation

This is an introduction to process control systems, designed to provide the student with the basics of PID Control as well as an overview of more advanced systems.

Prerequisite(s): C12110

CI1220 Instrumentation, Motor Control and PLC

This course provides a comprehensive treatment of sensors and methods of measuring automated process variables. The student will be introduced to the underlying concepts and operation of industrial measurement devices and control systems, including motor operations, programmable logic controllers (PLC) and ladder logic.

CI1310 Electrical/Electronic Fabrication Techniques

This is a practical electrical/electronics course for students entering the primary electrical / electronics technical intersession. This course enables the student to obtain practical knowledge in soldering, wiring, fabrication and proper use of test equipment as related to accepted procedures found in industry.

Prerequisite(s): ET1101

CI1350 Basic Process Automation

In this course the participants will run existing processes to determine the types of devices used to measure level, flow and other parameters within a plant and how the final control elements interact with the automation control system.

CI1400 Industrial Controls I

Manufacturing Operations Technology graduates are expected to understand how best to use automation and process control technologies to improve product quality and optimize processes. In order to do this, students must first have a basic understanding of the analog and digital electronic building blocks used in automation. Consequently, topics include; the basic operation and industrial applications for semiconductor devices, including the diode, BJT switch, power electronic devices (FET, IGBT, SCR), and operational amplifier; an explanation of digital fundamentals, including the binary number system, combinational logic, and sequential logic.

Prerequisite(s): ET1101

CI1401 Industrial Controls II

As industrial process operators, graduates must understand how industrial controllers work (i.e. PLC, DCS, drives, etc.). While they are not expected to maintain the industrial controllers, it is important that the student receive enough hands-on programming experience such that they gain confidence in the systems and hardware. Learning the details about a specific control system, in this case Programmable Logic Controllers (PLC) is an effective way of gaining this confidence. Consequently, topics include PLC hardware, systems, applications, and programming. Also introduced are variable speed drive technologies, with an emphasis on variable frequency (AC) drives and applications. The student applies the concepts learned to specific systems, processes and equipment found in manufacturing operations.

Prerequisite(s): CI1400, PE2430

CI1500 Introduction to Process Analysis

This course will introduce the student to process analysis. Methods of calibration and applications of statistical methods (mean, standard deviation, control charts, tests and linear regression analysis) will be applied to measurements. Electrochemical principles will be applied to the study of corrosion, conductivity, ORP, pH and other electrochemical analyzers. The course also introduces students to the use of statistics in monitoring quality control in industrial processes. The course reviews electrochemical principles as they apply to corrosion and corrosion control in industry. The student will learn how control of industrial processes by electrochemical methods is accomplished.

Prerequisite(s): CH1121

CI1520 Process Analyzers I

This course will examine the role of chemical analyzers in monitoring and controlling industrial processes. Statistical principles will be applied to process analyzer systems and the validation of process analyzers. The operating principles of electrochemical analyzers will be studied and learners will learn to calibrate, install and troubleshoot these analyzers as well as perform routine maintenance on them. The operating principles of a variety of physical property analyzers will be studied and learners will perform routine calibration, maintenance and troubleshooting procedures on these analyzers. Factors affecting corrosion and the use of analyzers in the prevention and measurement of corrosion will also be studied.

Prerequisite(s): CH1121, CI2230

CI2100 Pressure and Level Measurement and Control

This is the second core instrumentation course designed to reinforce the basic instrumentation concepts previously covered. The various types of transmitters used to measure pressure and level will be covered in detail. The control section of the course will show how the transmitters are used in a control loop.

Prerequisite(s): CI1350

CI2120 Final Control Elements and Instrument Air Systems

This course focuses on the various types of control valves and damper operators as well as the auxiliary devices used to position and supply power to the actuator. The final section of the course covers how Instrument Air is produced for an industrial plant.

Prerequisite(s): CI1350

CI2230 Flow and Temperature Measurement and Control

This course develops further understanding of types of control strategies and introduces students to the principles and operation of flow and temperature control systems, with an introduction to cascade and feed forward control systems.

Prerequisite(s): CI2100

CI2250 Hydraulics for Instrumentation

This introductory course is designed to acquaint the learner with the design and operation of industrial hydraulic systems. It includes a review of the selection and integration of the components used to build and control hydraulic circuits. Operational control and troubleshooting of basic circuits is an integral component of the course.

CI2300 Advanced Control Strategies

This course covers advanced PID control strategies with an emphasis on boiler control.

Prerequisite(s): CI2230

CI2520 Process Control Operations

Manufacturing operations personnel need a good understanding of process control methods in order to improve product quality, optimize the process, and reduce process operation costs. This course
provides the students with the knowledge and skills relating to both basic and advanced process control techniques used in all industrial processes. Using this knowledge of process control technology, the student is introduced to process and instrumentation diagrams (P & ID) that explain the control systems for both processes common to all industries and industry specific processes. The common processes emphasized are “steam plant control” and “effluent/wastewater treatment”. Topics include PID control, controller tuning, and advanced control techniques (cascade control, ratio control, feed-forward control).

**Prerequisite(s):** CI1210

**CI2610 Process Optimization**

This course introduces the student to systems and techniques used for industrial process optimization and quality management. The tools and systems include process analyzers, adaptive controllers, distributed control systems, (DCS), real-time data historian, virtual sensors, asset management software, enterprise resource planning (ERP), and industrial networks. During this course, the student continues to develop knowledge and practical expertise in the application of process control technology to the specific systems, processes and equipment found in a variety of manufacturing operations.

**Prerequisite(s):** CI2520

**CI2801 Process Measurement II**

This is a second course in industrial process measurement and its purpose is to familiarize students with various devices and systems used in the industrial environment to measure fluid flows, humidity, etc. as well as an introduction to control valves. Students will study the various types of process transmitters used in the measurement and transmission of information on fluid flow rates.

**Prerequisite(s):** CI2800

**CI2810 Process Control I**

The purpose of this course is to familiarize the student with both pneumatic and electronic controllers as well as basic feedback controllers as well as basic feedback control. This is an entry level controls course that is intended to provide the student an opportunity to learn how various types of processing industries regulate such as pressure, level, flow, etc.

**Prerequisite(s):** AE2300, AE2320, CI2800, CI1210

**CI2811 Process Control II**

The purpose of this course is to familiarize the student with both pneumatic and electronic controllers as well as basic feedback control.

**Prerequisite(s):** CI2800, CI2810

**CI2820 Process Control I (Basic Control Systems and Terminology)**

The course provides an introduction to process measurement and control terminology. Students will be given the opportunity to control single phase flows and control level in various process loops.

**Prerequisite(s):** PH1101, ET1101

**CI2821 Process Control II (Level and Flow Measurement and Control)**

This course provides an introduction to process measurement and control. The principles and operation of a variety of level and flow devices used in process control are examined. Students measure and control single phase flows and control level in various process loops.

**Prerequisite(s):** CI2820

**CI3100 Automatic Control System**

The course is intended to show the application of classical control theory to actual industrial systems, including DC drives. Control system components will be studied in theory and in the lab. Instrumentation-related software (Control Station, PC-ControlLab, MATLAB) will be used to analyze/design/modify industrial process control systems.

**Prerequisite(s):** MA2101 & AE2301 or AE2311

**CI3110 Safety Shutdown and Machine Monitoring Systems**

This course covers basic shutdown systems on boilers and then covers the safety shutdown systems found in the oil and gas industry. The course also introduces software that can be used for process and optimization.

**Prerequisite(s):** CI2300

**CI3200 Statistical Process Control**

This course introduces students to the statistics concepts necessary for working in a chemical processing industry. The use of statistics and charts, to control and improve a process, is examined. Inferential statistics, as applied to chemical processing, is studied.

**Prerequisite(s):** MA1101

**CI3400 Biomedical Instrumentation I**

This course will provide the student with the fundamental principles inherent in the collation of physiological phenomena. Students will be familiarized with all aspects of electrodes, filters, amplifiers and transducers. The subject matter will incorporate considerable “hands-on” experience through the use of laboratory projects as well as exposure in hospital biomedical engineering departments.

**Prerequisite(s):** AE2301, CI1100, AE2210, AE2400

**CI3401 Biomedical Instrumentation II**

This course is intended to broaden the student's knowledge of medical instrumentation by introducing more sophisticated systems such as multi-parameter patient monitoring systems, central station monitoring, hemodialysis systems, respiratory and pulmonary function instrumentation as well as operating room systems such as electrosurgery units and laser surgical tools.

**Prerequisite(s):** CI3400, CG1200

**CI3500 Medical Imaging**

This course contains lectures, demonstrations, and hands-on training through which students will learn the proper operation, calibration and preventative maintenance and safety issues involved in the utilization of a basic x-ray imaging system as well as additional imaging modes such as ultrasonic imaging and magnetic resonance imaging.

**Prerequisite(s):** CI3400

**Co-requisite(s):** CI3401

**CI3600 Industrial Process Control**

This is an introduction to Process Control Systems, designed to provide students with the basics of PID Control as well as an overview of more advanced systems.

**Prerequisite(s):** CI1210

**CI3811 Process Control III (Pressure and Temperature Control)**

This course develops further understanding of types of control strategies. It introduces students to the principles and operation of pressure and temperature control systems and advanced control systems.

**Prerequisite(s):** CI2821

**CI3812 Process Control IV (Advanced Process Control Strategies)**

This course covers advanced PID Control strategies with an emphasis on boiler control.

**Prerequisite(s):** CI3811

**CI3820 Process Analyzers**

This course resumes study of process analyzers including electromagnetic analyzers, chromatographic analyzers, mass spectrometers and moisture and toxic gas analyzers. It provides students with the opportunity to calibrate and use for analysis purposes UV/VIS/IR, mass spectrometers, GC and HPLC as well as toxic gas analyzers. The students will develop an in depth understanding of the various components of the process sampling system and how they are inter-related.

**Prerequisite(s):** CI2801, CI2811, CI1500

**CI3821 Process Analyzers II**

This course involves the study of spectroscopic, chromatographic and physical property analyzers that a chemical processing technologist would be expected to routinely manage in the industry. The basic operating principles, and the most common problems associated with their use, will be studied. An overview of the sampling systems associated with process analyzers and the maintenance of these systems will be covered. Laboratory work will involve calibrating, using and troubleshooting a variety of laboratory and process analyzers.

**Prerequisite(s):** CI3811

**CI3830 Computer Control Systems**

The purpose of this course is to familiarize the students with the various types of computerized control systems used by the processing industries.

**Prerequisite(s):** EC2800, DP3100

**CI3860 DCS**

The purpose of this course is to familiarize the learner with the distributed control systems (DCS) and Safety Instrumented System (SIS) used by the processing industries. Learners will also learn Functional Block Diagram (FBD) programming language that is widely being used in DCS as well as Process Automation Systems (PAS).

**Prerequisite(s):** CI2810, CI2230

**CJ2110 Canada’s Justice System I**

This course provides students with an overview of Canada’s Criminal Justice System. The course gives students and understanding of the philosophy and principles underlying the Canadian system and then provides them with knowledge of the entire criminal process from arrest to criminal procedures to sentencing to punishment to community reintegration.

**CJ2120 Canadian Criminology**

This course presents an overview of crime and criminal behaviour in Canadian society. Theories
and concepts from the field of criminology will be examined to help students understand crimes such as homicide, sexual assault, prostitution, business crime, and mental illness.

Prerequisite(s): C2110

CJ2210 Youth Justice In Canada

This course introduces the student to the specific components and functions of the youth justice system in Canada. Following a review of legislation dealing with youth crime, the course will trace the movement of the young offender through the justice system, from the commission of the offence through to the disposition and sentencing.

Prerequisite(s): C2110

CJ2420 Canada’s Correctional Population

This course overviews Canada’s correctional system and provides students with information on the evolution of Canada’s correctional institutions. Students are introduced to special categories of offenders and various classification, case management and treatment options for these offenders. The purpose and practice of segregation procedures will also be discussed.

Prerequisite(s): C2110

CK1870 Speciality Cakes

This course requires the use of baking utensils and equipment, and baking supplies. It involves preparing speciality cakes. It includes information on types of sponges and cakes, and preparation techniques.

CK1880 Speciality Pastries and Filing

This course in pastries requires the use of baking utensils and equipment, and baking supplies. It involves identification and selection, storage and handling, portioning, scaling, panning, baking, preparing filling, cooling, decorating and plating basic pastries and cleaning up. It includes information on types of speciality pastries and fillings and preparation techniques.

CK1900 Speciality Yeast-Raised Products

This course in yeast breads requires the use of baking utensils and equipment, and baking supplies. It involves the preparation of speciality yeast raised products. It includes information on temperature guides, types of speciality yeast-raised breads and preparation techniques.

CK1910 Speciality Cold Desserts

This course in desserts requires the use of baking utensils and equipment, and baking supplies. It involves the preparation of speciality cold desserts. It includes information on types of speciality cold desserts and cooking methods.

CK1920 Speciality Hot Desserts

This course in desserts requires the use of baking utensils and equipment, and baking supplies. It involves the preparation of speciality hot desserts. It includes information on types of speciality hot desserts and cooking methods.

CL1100 Chemical Engineering Calculations

This course reviews the basic units used in chemical engineering and introduces American Engineering units. Emphasis is placed on converting between units and developing problems solving skills. The concept of material balance is introduced and students learn to solve material balance problems. Stoichiometry of industrial chemical reactions is examined and calculations associated with these are learned. Heat, heat transfer and heat balance are also examined as they apply to chemical processes. Students learn to solve energy balance problems.

Prerequisite(s): CH1121

CL1500 Chemical Reactors and Mixing

This course introduces students to the mixing processes which are fundamental to many chemical processes. The role of mixing and factors affecting mixing as well as different mixing devices are studied. In chemical engineering, chemical reactions take place in chemical reactors. A variety of chemical reactors will be examined and in-depth study of batch, and continuously stirred tank reactors will take place. Simulation and laboratory work will be used to teach students the fundamentals of safe and correct start-up, shut-down, and control and troubleshooting of mixing tanks and reactors.

Prerequisite(s): PO1200

CM1010 Communications I for Aboriginal Students

This course has been developed for aboriginal students using culturally relevant materials. The academic focus of this course will be the advancement of reading and writing skills. The writing process will be covered in detail, as will basic grammar and structural mechanics. To develop a variety of reading strategies, students will examine and interpret a number of culturally relevant texts, including informational, graphic, and literary texts (poetry, short fiction and a novel) written by aboriginal writers.

CM1011 Communications II for Aboriginal Students

This course has been developed for aboriginal students using culturally relevant materials written by First Nations’ writers. In this course, reading comprehension will continue to be enhanced through an exploration of dramatic and non-fictional texts (including aboriginal life-writing/memoir). The essay will be examined in detail and the writing process applied to its structure.

Prerequisite(s): CM1010

CM1012 Communications III for Aboriginal Students

This course has been developed for aboriginal students using culturally relevant materials. Its focus will be the development of research paper writing and oral presentation skills. The emphasis will be upon the processes involved in the critical analysis of contemporary aboriginal culture, as well as the effective presentation of findings. Students will learn skills relevant to research, exposition and speaking publicly.

Prerequisite(s): CM1011

CM1020 English I

English I is the first of three courses in English in the CAS Trades program. The intent of the course is to introduce reference skills, to develop fundamental reading skills, and to introduce fundamental writing skills. Regarding strategies to be covered include reading in context, skimming, and scanning.

CM1021 English II

English II is the second of three courses in English in the CAS Trades program. Learners will continue to be introduced to fundamental writing skills including punctuation and mechanics and sentence and paragraph construction. In addition, this course will further develop reading and writing fundamentals, particularly as they relate to the trades. Learners will also be introduced to technical documents applicable to the trades for their work.

Prerequisite(s): CM1020

CM1022 English III

English III is the third of three courses in English in the CAS Trades program. This course presents knowledge of the skills need to communicate in the trades workplace. The importance of oral communications from a safety perspective will be emphasized.

CM1060 Essential English I

Essential English I is a Comprehensive Arts and Science (CAS) College Transition course. It is the first of two English courses designed to give students a solid foundation in writing skills and to prepare them for success in subsequent post-secondary studies. Through varied writing assignments and revisions, students will achieve a college level of proficiency in English. Students may also meet the admission requirements for CAS Transfer: College-University and other post-secondary programs through the successful completion of Essential English I and II.

CM1061 Essential English II

Essential English II is a Comprehensive Arts and Science (CAS) College Transition course. It is the second of two English courses designed to give students a solid foundation in writing skills and to prepare them for success in subsequent post-secondary studies. Through varied writing assignments, revisions and numerous grammar exercises, students will achieve a college level of proficiency in English. Students may also meet the admission requirements for CAS Transfer: College-University through the successful completion of this course.

Prerequisite(s): CM1060

CM1100 Writing Fundamentals

Writing Fundamentals is an introductory course designed to review writing fundamentals including grammar, punctuation, spelling, and usage. Students will apply principles of writing in sentence and paragraph construction.

CM1120 Critical Reading and Writing I

Transferable to MUN English 1080 or 1000. An exploration of literary text, which will include such forms as poetry, short fiction, drama and the essay. Emphasis is placed on critical reading and writing: analyzing texts, framing and using questions, constructing essays, organizing paragraphs, quoting and documenting, revising and editing.

Prerequisite(s): Minimum of 60% in Language 3101 and a minimum of 60% in either Thematic Literature 3201 or Literary Heritage 3202 or English 3201 (minimum of 60%). Transferable to MUN English 1080

CM1135 Critical Reading and Writing II (Fiction)

Transferable to MUN English 1101 or 1001. This course is an introduction to such prose narrative forms as the novel, the novella, the story sequence and the autobiography. This course continues the emphasis on critical reading and writing begun in CM1120. It also introduces the student to longer prose narrative, particularly the novel form and to the practices of conducting research.

Prerequisite(s): CM1120 or MUN English 1080.

CM1145 Critical Reading and Writing II (Context, Substance, Style)

Transferable to MUN English 1110 or 1001. This course is an introduction to the writing and analysis of prose. Students will analyze prose writing and practice a number of writing strategies that consider a variety of audiences and purposes. The course further develops the development of writing and analytical skills acquired in CM1120 and introduces the student to writing intended to critique, persuade, and analyze.

Prerequisite(s): CM1120 or MUN English 1080.
CM1155 Critical Reading and Writing II (Drama)  Transferable to MUN English 1102 or 1001. This course is an introduction to the study of plays, primarily as written texts. Elements of theatre history and dramatic theory and of live performance production processes may be introduced to enhance students' understanding of this uniquely hybrid literature. This course continues to develop the critical reading and writing skills introduced in CM1120. Prerequisite(s): CM1120 or MUN English 1000.

CM1165 Critical Reading and Writing II (Poetry) Transferable to MUN English 1103 or 1001. English CM1165 introduces the writing and analysis of poetry. This course continues to develop critical reading and writing skills introduced in CM1120. Students will also learn to develop library/research skills. Prerequisite(s): CM1120 or MUN English 1000.

CM1180 College English I (Reading Across the College Curriculum) This is an English course designed for Comprehensive Arts and Science students who need to improve their reading skills and strategies in order to successfully complete the reading requirements of their chosen post-secondary program. The course focuses on the common elements of successful reading across all curriculum areas, as well as the ways in which various areas require the use of different reading skills and strategies. The principal focus of this course is reading to learn. Students will strengthen reading skills and develop strategies appropriate to their areas of study through working with selected course materials and exercises in various curriculum areas (including math and laboratory sciences) at the introductory level of their chosen post-secondary program.

CM1200 Public Speaking This is a seminar course in public speaking which attempts to blend theory and practical skills. In addition to considering how oral communications affect group and interpersonal relationships, the student will analyze techniques in the preparation and delivery of oral communications and will practice these techniques in prepared and impromptu speeches.

CM1240 Business Communications I Business Communications I is designed to introduce students to the writing requirements of business environments. The course is intended to provide ample in-class opportunities to review writing fundamentals and improve writing skills using common business applications.

CM1241 Business Communications II Business Communications II is designed to further students' knowledge and competence in preparing business documents for the workplace. The course is intended to provide opportunities to improve writing skills using various business applications. Prerequisite(s): CM1240 or equivalent.

CM1260 Communications in Health Care This course is designed to enable the student to communicate clearly, concisely and correctly in both written and oral forms in the health care setting. Emphasis is placed on medical documentation and oral communication with health care professionals, clients and families.

CM1370 IM Communications This course gives the student the knowledge and skills to design and conduct workshops, design and conduct interviews, design and administer questionnaires and to draft policies and procedures. The examples used and the deliverables created will apply to the field of Information Management.

CM1400 Technical Report Writing This course is designed to teach technology students the fundamentals of technical reporting in oral and written forms. Emphasis is on strategies of technical reporting, research techniques and organizational skills.

CM1401 Technical Report Writing II This course is designed to help students formulate criteria for structuring informal and semi-formal reports. Various report formats will be examined with emphasis on statistical data analysis, documentation and illustration methods. Oral reporting techniques will be enhanced through problem-solving reports and the technical sales presentation. Prerequisite(s): CM1400 or equivalent.

CM1450 Writing Fundamentals for the Workplace This course is designed to introduce students to written communications in the workplace and provide considerable practice in constructing and editing effective sentences for paragraphs and writing clear, concise summaries that are properly documented.

CM1460 Writing for the Workplace This course is designed to introduce students to written communication in the workplace and provide considerable practice in writing clear, concise summaries that are properly documented.

CM1470 Communications This module will provide the student with the confidence and ability to effectively communicate to various audiences using a variety of mediums, whether it is verbal or non-verbal forms of communication. The module will cover both practical and theoretical information on oral and non-verbal communications, listening and questioning skills, preparing and conducting presentations, media relations skills and proper radio procedures.

CM1500 Essay Writing This course is designed to teach the student fundamental writing skills. Emphasis is on acquiring strategies and techniques for developing effective essays. Students write essays to demonstrate their mastery of the various strategies and techniques.

CM1520 Writing for the Arts This course will introduce students to the writing of artistic critiques, appreciations, and proposals. Emphasis will be placed on applying writing exercises that require philosophical reflection and that will extend students' vocabulary and increase their effectiveness as communicators in their field.

CM1530 Proposal Writing In this course students will learn the necessary skills to write successful proposals. Students will formally research funding sources, identify personal areas of interest, and complete an actual proposal for submission. Students will also be expected to present, defend, and critique their proposals.

CM1550 Creative Writing This course provides an opportunity for students who are interested in writing poetry, short fiction, or drama to share ideas and innovations. Students will examine a variety of themes, styles, and techniques which can broaden their own creative explorations. The course encourages students to discover and develop styles appropriate to their own literary aspirations.

CM1560 Writing from Original Sources Students in this course develop multimedia content from original sources such as recall, interviews, research, conversation and imagination. Students keep a personal journal, develop creative writing skills through various writing exercises and develop written content for multimedia applications. Prerequisite(s): CM1400.

CM1680 Writing for the Screen Students will acquire advanced skills in critical narrative development, formal presentation, and the screenwriting craft. It expands on previously covered material on film direction, pre-production and narrative fundamentals to create a detailed creative synopsis or “treatment” and a screenplay in a prescribed format.

CM2100 Workplace Correspondence Communications 2100 gives students the opportunity to study the principles of effective writing. Applications include letters, memos, and short report writing. This course also allows students to explore job search techniques.

CM2110 Business Writing Fundamentals Business Writing Fundamentals gives students the opportunity to apply the principles of effective business writing. Applications include letters, memos, e-mail and informal business report writing. This course also allows students to explore job search techniques. Prerequisite(s): CM1100.

CM2130 Workplace Writing Students will be introduced to the principles and practices of effective written communications applicable to their program of study. They will understand the importance of well-developed writing skills; the purpose of various types of correspondence; examine the principles of effective writing; examine standard formats for letters and memos; write effective letters and memos; examine the fundamentals of informal reports and the report writing procedure, and develop an effective resume.

CM2150 Workplace Communications This course is designed to introduce students to the principles of effective communication including letters, memos, short report writing, oral presentation and interpersonal communications. Upon completion of the course, students will be able to understand and apply communication skills as outlined in the Employability Skills 2000, Conference Board of Canada; understand the importance of well-developed writing skills in business and in career development; understand the purpose of the various types of business correspondence; examine the principles of effective business writing; examine the standard formats for letters and memos; write effective letters and memos; examine the fundamentals of informal reports and the report writing procedure; produce and orally present an informal report; examine effective listening skills and body language in communication.

CM2160 Communication Essentials This course is designed to introduce learners to the principles of effective communication including letter, memos, short report writing, oral presentations and interpersonal skills. Learners will apply the principles using trade specific examples.
CM2200 Oral Communications ● This course is designed to help students develop interpersonal, oral communication, and presentation skills in a team-based environment.

CM2300 Report Writing ● This course will stress skill development in planning, researching and documenting, preparing graphic aids, proofreading and editing, and completing formal reports.

CM2450 Note-Taking & Report Writing The notebook is one of the most important tools for the conservation enforcement officer. The practice of writing, using good grammatical style, sentence structure, punctuation, diction and spelling will be stressed throughout this module. The report writing component will deal with field and other sources of information obtained from diagrams, maps, and photographs.

CM2800 Oral/Written Communication Skills This course will provide students with instruction in the areas of writing technical reports and the delivery of oral presentations. Emphasis will be placed on the processes involved in effective writing and effective presentations as they pertain to specific technologies. Students will learn relevant skills for researching, organizing, writing and presenting technical information. 
Prerequisite(s): CM1401

CP1120 Fundamentals of Programming I ● This course is designed to give the student the logic involved in the computing process and the ability to develop an algorithm to describe the solution to a given problem. The student will analyze, design, choose an algorithm, code test and debug applications. Algorithms will be implemented using an object oriented programming language.
Co-requisite(s): MA1900

CP1150 Visual Basic ● This course introduces students to WINDOWS programming using Visual Basic. Relational database concepts will be employed as attractive and useful applications are developed taking advantage of the Graphical User Interface.

CP1270 Programming Fundamentals The course introduces the fundamental concepts of problem solving and procedural programming techniques used to design and implement computer solutions to problems in engineering and mathematics.

CP1280 Windows Client This course is intended to provide the skills necessary to provide a stable, secure, and efficient desktop environment for Windows client operating systems. Topics include automated deployment, updates, network configuration, operating system optimization, and backup across multiple versions of Windows operating system.
Prerequisite(s): CR1100, CP3120

CP1330 Windows Server Administration ● This course provides students with the knowledge and skills to perform post-installation and day-to-day administration tasks in Windows domain.
Prerequisite(s): CR1100 or CP1570 or CP1880

CP1331 Advanced Windows Enterprise Server Building on the skills developed in CP1330 Windows Server Administration, this course enhances the student’s ability to administer a Microsoft Server. It focuses on the advanced features such as the implementation and management of forests, group policies, name resolution, remote access and security.
Prerequisite(s): CR1100, CP1330

CP1340 Object-Oriented Programming The course is designed to give the learners a thorough grounding in the principles of object-oriented programming. Additional topics include exception handling design and implementation of Java applications with Swing graphical user interface and multithreading in the Java programming environment.
Prerequisite(s): CP1270

CP1360 Programming for Computer Systems and Networking This course is designed to give the student the logic involved in the computing process and the ability to develop algorithms to describe the solution to a given problem, with implementation using a scripting language. This course uses object-oriented technologies to aid the student in developing solutions to computer support related problems. The intent of this course is for the student to become familiar with object oriented techniques and programming logic and to practice that logic using scripting language.

CP1410 Web Analysis and Design ● This course introduces students to the concepts of systems analysis and design for the Web. It gives a fundamental overview of the Web site development process, and details the iterative cycle of planning, analysis, design and development, and testing. Emphasis is placed on designing an effective, user-centered, accessible Web site.
Prerequisite(s): CR1510

CP1450 Operating Systems ● This course is an introduction to the fundamental concepts of the Windows Operating Environment. Students will apply these concepts through practical applications.

CP1560 Data Management ● This course includes the fundamental concepts common to all database management systems in such a way that the student can function in a meaningful and knowledgeable manner in any data processing environment where database concepts are implemented. Additionally, current theoretical concepts are put into practice using current database architectures and technologies.

CP1570 Networking for Programmers ● This course will provide an introduction to network communication media, topology, protocols and software architecture. The course will present the model of information communication that speaks to the business environment in particular. The OSI model, TCP/IP and the WAN protocols will be discussed. Topics include: requirements for the business communication media, network topologies, LAN, WAN, Wireless WAN, distributed applications, OSI Model, and TCP/IP.

CP1640 Visual Basic Applications for ACAD This course is designed to give the student exposure to programming logic and data linking between graphics information and text/numerical data. The student will develop the ability to reduce an algorithm into linear components for solution by computer. The course will concentrate on utilizing Visual Basic algorithms to perform surveying functions which automate the drafting process. Menu customization will also be covered to complete the ACAD customization.
Prerequisite(s): SU1320
Co-requisite(s): SU1321

CP1850 Procedural Programming This course is designed to give the student the logic involved in the computing process and the ability to develop an algorithm to describe the solution to a given problem, with implementation using a programming language of choice. The student should also be able to analyze, design, develop, code and debug a solution to a programming problem based on the introductory programming concepts introduced in this course.
Prerequisite(s): None
Co-requisite(s): MA1900

CP1880 Computer Systems Architecture This is an introductory course in computer architecture focusing on high level components and interactions in a computer system. The major topics to be covered are: CPU organization, primary memory, secondary memory, I/O components and networking. The focus of the course will be the effect of the components on the development of software.

CP1890 Object-Oriented Programming This course is designed to give the student intermediate skills in the computing process and the ability to develop an algorithm to describe the solution to a given problem, with implementation using an object oriented programming language. This course uses object oriented technologies using a selected development environment to aid the student in developing a GUI solution to business problems.
Prerequisite(s): CP1850 or CP1120 or CP1810

CP1920 Computer Hardware and Troubleshooting I This course is designed to expose the students to the basic components of a computer system and methods of troubleshooting the components. The student will learn how to: evaluate, install, configure, troubleshoot and specify all basic components such as CPUs, Memory, and Storage Devices. It will also cover such topics as: PC repair fundamentals, chipsets, busses and expansion slots.

CP1922 Computer Hardware and Troubleshooting II This course is designed to expose the student to another level of components of a computer system and the methods of troubleshooting these components. The student will learn how to: evaluate, install, configure, troubleshoot and specify all basic components such as I/O devices, Input Devices, Output Devices, multimedia devices, printers, scanners, notebooks, PDAs and PCs on a network (both wired and wireless). The student will be exposed to topics such as PC management, virus protection, software troubleshooting, preventative maintenance and documentation.
Prerequisite(s): CP1920

CP1930 Introduction to Systems Analysis and Design This course is intended to introduce students to the concepts of systems analysis and design using the traditional methodology. Its emphasis is on the methods and products of each phase of the SDLC rather than on a formalized methodology. Discussion of structured methods is interwoven. All phases of the life cycle are dealt with using structured methods.
Prerequisite(s): CP1850 or CP1230 or CP3210

CP1950 Object-Oriented Development with UML This course is a second course in Systems Analysis and Design that focuses on object oriented concepts. The aim is to provide the student with a practical, hands-on skill set of the latest object-oriented design method using Unified Modeling Language (UML) the
Unified Process. The course is laboratory oriented allowing the student to develop real design for use with Object Oriented and traditional programming languages. It reviews all phases from an object oriented approach but concentrates on the various types of UML modeling.

Prerequisite(s): CP1930 or CP3421

CP2130 Fundamentals of Programming II ●

This course is designed to take the students further in the problem-solving, logic, and programming techniques introduced in CP1120. This course uses the same programming language as the first programming course so that advanced concepts can be developed. The student will design and create interactive commercial and production-oriented applications.

Prerequisite(s): CP1120

CP2180 Microsoft Windows Management

This course provides students with the knowledge and skills to install, configure, integrate, optimize, troubleshoot and support Microsoft Windows Operating System in Local Area Networks (LAN) and Wide Area Networks (WAN) environments.

CP2190 Unix ●

This course is an introduction to the fundamental concepts of the Unix operating system. Students will apply these concepts through practical applications.

CP2280 Object-Oriented Programming in Java ●

This course in object-oriented programming for students with no experience with Java but some knowledge of a strongly typed language. Examples and assignments typify standard business applications. The course stresses key object-oriented design concepts and their implementation rather than exhaustive coverage of the Java language itself.

Prerequisite(s): CP1120, or CP1830, or CP1810

CP2310 Electronic Spreadsheet Applications ●

This course will introduce students to the concepts and applications of electronic spreadsheets. Students will create, format and print enhanced worksheets and graphs, and will incorporate functions and macros into their spreadsheets. They will also use database features to manipulate data.

CP2320 Micro Database Applications ●

This course introduces the student to the concepts and applications of database. Students will create, modify and update a database as well as database forms and reports for use in a business environment. They will also perform database functions and use database commands.

Prerequisite(s): None

CP2390 Desktop Publishing/Web Basics

Using desktop publishing software, students will prepare newsletters, flyers, and other publications which require professional design elements such as columns, boxes, various type fonts and styles, rules, and graphic pictures. Students will create, modify and maintain standards based static websites.

Prerequisite(s): MC1080

CP2410 Micro Database Applications

This course introduces the student to the concepts and applications of database. Students will create, modify and update a database as well as database forms and reports for use in a business environment. They will also perform database functions and use database commands.

Prerequisite(s): None

CP2420 PHP ●

This hands-on PHP programming course uses open source software, PHP, and a database, to provide the student with the applied skills to build professional-quality, database-driven Web sites. By integrating PHP and the database with XHTML and CSS frameworks, the student will develop the skills to build interactive Web sites with authentication and security. The student will expand the functionality of a comprehensive hypertext project that can be directly translated or easily modified to be used as a real-world Web application.

Prerequisite(s): CR1570, CP1120, CR1510, CP3510

CP2470 Web Server ●

This course will introduce the student to skills and concepts that are essential to setting up and maintaining an Internet presence. Topics include web site administration, server installation, domain name services, web server management, web server programming environment, extending web server services, securing the web environment, and monitoring the web environment.

Prerequisite(s): CP1570

CP2481 Microcomputer Database Programming ●

This course will introduce the student to application development in an integrated development environment. The development environment is supported by relational database technology, is essentially object oriented, and involves visual programming using the appropriate code. The student will learn to develop typical commercial and production oriented applications.

Prerequisite(s): CP1120, MC1805

CP2530 Data Structures & Algorithms

This course builds on the foundation provided by Programming Fundamentals and Object Oriented Programming. It introduces the fundamental concepts of algorithm analysis and design as well as dynamic data structures. Prerequisite discrete mathematics concepts are introduced as appropriate.

Prerequisite(s): CP1340

CP2560 Advanced J2SE Programming

This is a second course in Java for students who have already completed a one-semester course in object-oriented programming in Java. Examples and assignments typify standard business applications. The course stresses using object-oriented design concepts to develop relatively sophisticated applications in Java. Topics include but are not limited to: String Processing; Graphics and Java2D components; Advanced ‘Swing’ GUI Components and Event-handling; Exception Handling; Multithreading; File and Stream I/O; Internet Networking; Multimedia; Utilities Package and Bit Manipulation; Collections API.

Prerequisite(s): CP2280

CP2640 Desktop Publishing ●

Using desktop publishing software, students will prepare newsletters, flyers and other publications which require professional design elements such as columns, boxes, tables, various font faces and styles, rules, and graphic pictures. Using web design software, students will create and modify a multiple page website for use in a business environment.

Prerequisite(s): DM2200 or MC1240

CP2650 Hardware Fundamentals

This course prepares learners to work with computing devices commonly found in enterprise. Learners will be introduced to safety and effective tool use. Learners will examine client computing options including mobility. Learners will examine how client computing is supported in the enterprise through study of server technologies including storage and virtualization.

CP2730 Project Management and Analysis

This course is designed to help the student understand the workings of project management/analysis and understand its importance to improving the success of information technology projects. The student will complete a major project that concentrates on project management/analysis as it applies to the infrastructure support area.

Prerequisite(s): CR1100

CP2840 Programming with ADD.NET

This course is designed to give the student advanced skills in the computer programming process. This course uses the ADD.NET framework to aid the student in developing solutions to business problems. It incorporates skills required in the programming field such as: using collections, XML, and data access and reporting using ADD.NET.

Prerequisite(s): CP1890, CP3410

CP3100 MVC Framework Development ●

This course will introduce the student to skills and concepts that are essential to develop and maintain a Model-View Controller MVC framework based web application. Upon completion of this course the student will be able to create powerful database-driven websites quickly in a scalable, re-usable, repeatable way.

Prerequisite(s): CP2420

CP3120 Command Line

Interacting with the operating system without using a GUI requires the use of text commands in a shell environment; this is called a command line. Navigating the command line is an essential skill for the computing professional. In this course the student learns to interact with, configure and troubleshoot the operating system using command line processes. The student will learn by the "hands-on" application of the commands and procedures.

CP3130 Content Management Systems ●

Content Management Systems support the process of collecting and publishing content on the web. They also provide a platform for many "community" features, such as comments, discussion and chat. Students will learn a process for identifying content types and establishing a workflow for editing and approving content. Students will then configure a content management system to meet a client’s needs.

Prerequisite(s): CP1410, CP2420

CP3150 Interface Design and Analytics ●

This course is an advanced study of Web site interface design. The student will learn best practices for designing a usable, visually-appealing Web site which has been optimized for both large and small screens. Emphasis is placed on adherence to Web standards and accessibility guidelines. Students will also learn how to effectively use Web analytics to refine the site design.

Prerequisite(s): CP1410

CP3160 Multimedia Development ●

This course introduces students to the basic concepts and techniques used in multimedia systems, media formats, communication of multimedia, and the publication of multimedia-filled websites. This course encourages students to be creative and original when developing their work. At the end of the course, stu-
dents will have a professional portfolio of multimedia and a client website.

**CP3370 Software Development with ASP.NET**
This course introduces students to multi-tier web application development using ASP.NET. The focus is on developing web applications with distinct presentation, application and storage tiers through project-based course work. The course will build upon user interface and database development concepts learned in previous courses and how to add business logic to the application tier for large scale application development.

**Prerequisite(s):** CP2130 or CP1890

**CP3410 Fundamentals of Database Design**
This course introduces concepts common to all database management systems in such a way that the student can function in a meaningful and knowledgeable manner in any data processing environment where database concepts are implemented. Additionally, current theoretical concepts are put into practice using current database architectures and technology.

**CP3421 Fundamentals of Systems Analysis and Design**
The first Systems Analysis and Design course presents an overview of the complete system development life cycle (SDLC). It gives a fundamental overview of the effective analysis, design and implementation of business-related problems. It also concentrates on requirements definition, system feasibility and design and implementation considerations utilizing the traditional SDLC methodology. A case study approach is used to provide students with an opportunity to practice required skills and knowledge in a simulated real-world environment with a focus on teamwork. Typical business problems are dealt with at length. Analysis tools are employed to document an existing system from both a physical and logical perspective. The course will also utilize a CASE tool in the preparation of system documentation and diagrams.

**Prerequisite(s):** CP2130, EP1150

**CP3470 IM Systems Analysis and Design**
The IM Systems Analysis and Design course presents an overview of the complete system development life cycle (SDLC) of IM related projects. It gives a fundamental overview of the effective analysis and design of business-related problems. It also concentrates on requirements definition, feasibility and design considerations utilizing the traditional SDLC methodology and methodology that is unique to IM.

**Prerequisite(s):** EP2130, OP1400, CR1280, CP1560, CM1370

**CP3490 Software Engineering**
The course introduces learners to the principles of software engineering, oriented toward outlining and analysis of large software systems using unified modeling language (UML) and different phases of software life cycle: requirements, analysis, design, implementation and testing. Development of a significant software system is a crucial part of the course.

**Prerequisite(s):** CP2530

**CP3520 Databases**
The course introduces learners to the principles of database design and implementation as well as administration of database management systems. Discrete mathematics prerequisites are introduced as appropriate. Development of significant database system is a crucial part of the course.

**Prerequisite(s):** CP2530

**Co-requisite(s):** CP3490

**CP3561 Java Database and Web Component Development**
This is the third course in the Java sequence. The student will learn techniques to manipulate databases using JDBC technology as well as create web components using JavaServer Faces components and AJAX enabled JavaServer Faces. The programs and services created will use Java types and Swing controls that reinforce the Model-View Controller architecture. Examples and assignments typify standard client-server business applications in an intra- or internet environment.

**Prerequisite(s):** CP2560, CP2370

**CP3620 Web Programming**
The course is designed to give learners a thorough understanding of Web technologies. Topics include client-server architecture and protocols. Server side topics include JavaScript and PHP scripting languages, AJAX, Java servlets and security.

**Prerequisite(s):** CP3490, CP3520, CE1210

**CP3800 Mobile Application Development**
The course introduces learners to application development for mobile devices and is structured around tools, frameworks and programming language(s). Topics include client-server architecture and protocols. Server side topics include JavaScript and PHP scripting languages, AJAX, Java servlets and security.

**Prerequisite(s):** CP2560, CP2370

**Co-requisite(s):** CP3620

**CP3830 Computer Graphics**
The course introduces learners to basic algorithms and programming skills in computer graphics using C programming language and OpenGL libraries.

**Prerequisite(s):** CP1250

**CP4200 Rich Internet Application Development**
This course is designed to provide students with the skills required to build rich and engaging web sites. The student will construct sophisticated interfaces, expose applications for access via APIs, use Flex frameworks, and use FLEX and Ruby on Rails together to build and deploy rich internet web sites.

**Prerequisite(s):** CR1510, CP2560

**CP4260 SQL Programming**
This course is intended to illustrate how to develop and program in a multi-user database environment. This course also illustrates how to create, populate, query, and manipulate databases in a relational environment using SQL, SQL PL/PLUS, and PL/SQL. This course can be done using a variety of platforms.

**Prerequisite(s):** CP3410

**CP4280 Programming for Mobile Devices**
This course is designed to give students an introduction to building applications for mobile devices. It is designed for first-time mobile developers. This course teaches students how to build, develop, and code J2ME applications.

**Prerequisite(s):** CP2560

**CP4411 SQL Using Oracle**
This course is intended to illustrate how to develop and query databases and how to develop database programs using Oracle. This course also illustrates how to create, populate, and modify database tables. It illustrates how to create triggers, procedures and functions using PL/SQL programming constructs. Database administration functions, such as the data dictionary querying, and creating users, roles and privileges, and granting, revoking and denying are also included.

**Prerequisite(s):** CP410

**CP4461 Database Programming using ADO.NET**
This course shows the students how to write programs that manipulate databases in standalone programs using ADO.NET and in Web based programs using a combination of ADO.NET and ASP.NET.

**Prerequisite(s):** CP2130, CP44411

**Co-requisite(s):** PR2460

**CP4470 Emerging Trends in Industry**
Through directed research students will explore emerging trends in the digital animation field. The topics covered are selected to focus on a program that has not been fully explored in the student’s program to date. The aim of this course is to complement or supplement previous training or to augment training in response to current trends or an unseen deficiency in student knowledge of specific topics.

**CP4471 Emerging Trends in Software Development**
This course covers trends in software development that arise from the natural evolution of the field. Topics are selected with the aim of exposing the student to the new and/or evolving techniques and/or technologies used in software development.

**Prerequisite(s):** Depends upon the topic(s) selected.

**CR1100 Networking Fundamentals**
This course introduces students to networking. Students will learn about the OSI model and explore devices, technologies, and protocols that operate at each layer. Students will gain practical experience working with cabling, design techniques and basic installation of networking devices. The focus of this course is Local Area Networks.

**CR1260 Client Service for the Computer Industry**
This course focuses on the role of an information technology employee in providing quality technical client service in any given situation. Students will develop the skills they need to interact effectively with clients, either face-to-face, on the telephone, in writing or on the web. Some of the topics covered will be Quality Client Service; Communicating with Clients; Handling Difficult Clients; Solving and Preventing Problems; Working as a Team; and Managing Stress and Burnout.

**CR1280 IM Computer Concepts**
This course is designed to expose the student to the fundamentals of computing/IT concepts, associated terminology, and emerging issues and technologies as they pertain to Information Management. The students are exposed to a full range of topics that focus on storage devices, peripheral devices, networks and the Internet, security, and file formats.

**CR1340 Computer Networking Operations**
This course is intended to give learners an overview of computer networking, data communications, and operating system applications found in processing industries. The student will be exposed to data communications standards and systems, network topologies, Communication Media, Communication Hardware, LAN Protocols, and Microsoft Operating

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CR1360 IM Security ● This is an introductory course that will give the student a general understanding of the field of Information Security. Topics discussed will be taken from the domains defined by CompTIA, including General Security Concepts, Communication Security, Infrastructure Security, Basics of Cryptography and Operational and Organizational Security. In the labs students will be exposed to the techniques and tools that can be used to protect personal computers from attacks via the web.
Prerequisite(s): CR1280

CR1510 Website Development ● After completing this course the student will be trained in the essential concepts of XHTML and JavaScript. The student will begin with developing a basic web page and move on to developing a basic website. Then the student will create web page forms, and work with cascading style sheets. Next, the student will work with JavaScript to create dynamic web pages and websites.

CR1530 Web Design I Students will gain the skills necessary to design and develop a basic website, with an emphasis on design issues over programming skills. Students will be introduced to basic programming in HTML and will learn how to develop sophisticated page layouts and images for websites.

CR1531 Web Design II Students will gain the skills necessary to modify and develop client-side websites. Students will focus on design issues as opposed to programming skills and will be introduced to intermediate programming in HTML and basic CSS and will learn how to develop sophisticated page layouts and images for websites.
Prerequisite(s): CR1530

CR2130 Enterprise Management using SMS This course provides the student with the knowledge and skills to management client and server systems using a centralized management suite to provide a stable and secure computing environment.
Prerequisite(s): CR1100, CP1330

CR2170 Trends in Web Development ● This course covers trends in web development that arise from the natural evolution of the field. Topics are selected with the aim of exposing the student to the new and/or evolving techniques and/or technologies used in web development.
Prerequisite(s): Successful completion of all courses in Semesters 1-3 of the Web Development program

CR2230 Microsoft Exchange Server Since its inception as a text messaging service for locally-connected computers, email has evolved into a globally-connected information sharing and collaboration system. Understanding the interconnection between clients, servers, and other networked email systems is vital to maintaining business communications. This course focuses on the planning, installation, configuration, and support of a Microsoft Exchange Mail Server. This would include mail concepts, server installation, client configuration, server management and configuration, public folders in a multi-site environment, troubleshooting, and security.
Prerequisite(s): CR1100, CP1330

CR2240 Information Systems Security This is an introductory course that will give the student a general understanding of the field of Information Security. Topics discussed will be taken from the domains defined by CompTIA, including general security concepts, communication security, infrastructure security, basics of cryptography and operational and organizational security.
Prerequisite(s): CR1100, CP1330, CR2510

CR2400 Internetworking This course builds upon the knowledge gained in CR1100, Network Fundamentals, and introduces the student to advanced network devices and configurations. In addition to learning the operation of internetworks, the student will configure, design and implement a LAN/WAN environment and analyze, configure, verify, and troubleshoot the primary routing protocols.
Prerequisite(s): CR1100

CR2510 Linux Server Administration I ● This course is the first of two courses that deal with the use and administration of a Linux based system. In this course the student will learn design and architecture of a Linux operating system as well as how to use many of the commonly used Linux tools from the command line. Furthermore, the student will learn how to plan, install and configure a Linux system and how to perform normal system administration tasks.
Prerequisite(s): CR2510

CR2510 Linux Server Administration II This course is the second course in Linux Server administration. The course focuses on the role of the system administrator and the tasks that the student performs on a daily basis. The student will learn how to plan and configure a Linux system and how to perform normal system administration tasks.
Prerequisite(s): CR2510

CR2530 Web Design III Students will gain the skills necessary to work as part of a team and develop more advanced websites. Students will be working on more complex projects where the role of the designer is to work with clients, audience and team members to develop more sophisticated design solutions.
Prerequisite(s): CR1531, GA1351

CR2800 Security for Programmers ● This course will provide the student with a general understanding of the field of Information Security. Topics discussed include, but are not limited to, General Security Concepts, Secure Coding, Basics of Cryptography and Operational and Organizational Security.
Prerequisite(s): CR1100 or CP1570 or CP1880; CP1120 or CP1850

CR2900 Switching and VoIP This course builds upon the student's understanding of local area networks and introduces the student to LAN switching concepts such as VLANs and spanning trees. As well, the student will gain experience configuring wireless LAN devices and will be introduced to the Voice over Internet Protocol (VoIP).
Prerequisite(s): CR1100

CR2950 Emerging Trends in IT Infrastructure This course covers new trends in IT infrastructure that arise from the natural evolution of the field. Topics are selected with the aim of exposing the student to the new and/or evolving techniques and/or technologies used in the design and maintenance of the IT infrastructure.
Prerequisite(s): Depends upon the topic(s) selected

CR2970 Capstone Project The capstone project course enables students to demonstrate the application of knowledge and skills developed throughout their program of studies. Students taking this course will work in teams on a project, under the supervision of a faculty supervisor, and will perform the following: (1) an in-depth analysis of a case study that looks at setting up local and wide area networks including various server operating systems, desktop operating system, cabling plants, infrastructure, equipment, addressing, network management, security and Internet connectivity; (2) the creation and presentation of a design document; (3) the creation and presentation of a project plan; (4) the implementation of the solution; (5) a presentation of their solution.
Prerequisite(s): CP2730, CP1331, CR2511, CR2400, CP1280, CP1922

CR3540 Capstone Project ● The capstone project course enables students to demonstrate the application of knowledge and skills developed throughout their program of studies. Students taking this course will work in teams on an IM project, under the supervision of a faculty supervisor, and will perform the following: (1) an in-depth analysis of a business case that deals with an information management issue in an organization; (2) the creation and presentation of an analysis document; (3) the creation and presentation of a project plan; (4) the creation and presentation of a design document; (5) a presentation of their solution.
Prerequisite(s): (CP3470, CP1600, OP1320, CP1560, PR2700, CP1401) Co-requisite(s): LW1270

CS1120 Leadership Skills ● This course introduces the concepts of group dynamics, team development, goals, group structures and communication in groups. Skills in team development, and in resolving conflicts and controversy in groups are practiced.

CS1121 Leadership Skills II This course is the second of three leadership courses designed to help students work with groups. Decision making, meeting management, facilitation, recruitment, motivation, fund-raising, board development, supervision, mediation and planning are the major topics. Case studies, gaming, simulations, role play and formal exams are part of the instruction and evaluation process.
Prerequisite(s): CS1120

CS1600 Leadership I - Wilderness Travel Topics in this course will involve the theory and practical aspects of wilderness travel: basic human needs; clothing and insulation; basic equipment needs; and nutrition, food planning and preparation.

CS2121 Leadership Skills III This course helps students practice and develop their leadership skills by working on a specific project, normally in conjunction with a community group. Together with the community group, students will develop a strategic plan, implement that plan, and evaluate the learning process.
Prerequisite(s): CS1121

CS2210 Leadership, Field Skills & Special Topics This module will include policy and procedures, fire safety, emergency response, cultural diversity awareness, non-violent crisis intervention, documenting

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CS2220 Interviewing Skills
This course is designed to develop the basic skills and knowledge necessary to conduct effective interviews in helping relationships. Using the micro skills training model, students will examine a framework within which interviewing takes place, identify practical interviewing and basic counseling strategies, and apply interviewing skills in a variety of situations, through the extensive use of role-playing, case studies, and report-writing.
Prerequisite(s): HR1120

CS2340 Introduction to Social Research
This course provides students with an introduction to social research. Students explore the meaning, value, ethics, and steps of social research. Various types of social research are reviewed and students actively participate in the research process through the completion of a research project.

CS2420 Crisis Intervention Skills
This course provides students with the knowledge and skills to identify and assess crisis development in human service agencies and to implement appropriate strategies for prevention and intervention. Students will acquire the appropriate knowledge and skills through the completion of a series of programs, workshops and/or certifications.

CS2500 Project Management
This course focuses on planning projects and on acquiring and utilizing the resources necessary to complete these projects. Students use project management and budgeting software to apply planning and management principles to a particular project.

CS2610 Wilderness Survival
This course is designed to teach the student the necessary skills required to travel and survive in a wilderness setting. It includes practical and theoretical information on map and compass, search and rescue techniques, and emergency survival skills. It includes information on trip preparation, maps, compasses, factors that affect survival, survival techniques, search and rescue procedures and rope handling.
Prerequisite(s): CPR and Standard First Aid

CS2620 Wilderness Survival
This course is designed to teach the student the necessary skills required to travel and survive in a wilderness setting. It includes practical and theoretical information on search and rescue techniques, and emergency survival skills. It includes information on trip preparation, maps, compasses, factors that affect survival, survival techniques, search and rescue procedures and rope handling.
Prerequisite(s): Standard First Aid

CS2640 Leadership II - Wilderness Survival
This course is designed to assist students in developing the necessary skills required to travel and survive in severe wilderness settings. It includes theoretical and practical activity in emergency survival skills, search and rescue techniques, and hazard / avalanche awareness and rescue procedures. Practical activities will occur in winter conditions, and will involve two overnight expeditions.
Prerequisite(s): CS1600

CS2650 Leadership III - Guiding Principles
This course will study outdoor leadership. Topics include an overview of outdoor leadership, group dynamics, conflict resolution, leadership theories, judgment and decision making, guiding approaches, and instructional techniques. Students will be required to participate in an extended field expedition and real life situational role playing will be required of students on a rotational basis for all aspects of this course as part of in-class and field based activities.
Prerequisite(s): CS2640

CS2700 Self Directed Learning
This course is normally taken in the fourth semester of a student’s program. It is designed to help students integrate and build upon previous courses in their program of studies. Based upon independent study, and structured around a learning contract between the student and the instructor, the course consists of students focusing on a specific issue within their field of specialization.

CT2300 Applied Programming
This is a course designed to introduce the technology learner to the concepts of problem solving using computer programming. The course will be taught using a high level language such as C or C++. Learners will write programs to solve problems within their related disciplines and will learn the concepts of troubleshooting and problem solving. The course covers the following areas: structured programming concepts, data types, decision statements, loop and iteration procedures, input/ output procedures, and files.
Prerequisite(s): MA1101 or CE1140, ET1151

CT2530 POSIX Operating Systems
The course introduces learners to the fundamentals of operating systems including process, memory, I/O management, file system and virtualization. Examples will be taken from UNIX. C programming language is overviewed as well as shell scripts.
Prerequisite(s): CP1340
Co-requisite(s): CE1210

CT3140 PC Configuration
This course is designed to expose the student to the basic components of a computer system. It will enable the student to evaluate, install, configure, and specify all basic computer components.

DB2100 Introduction to Disabilities
This course is designed to provide students with an overview of the history of disability, as well as an understanding of current human rights legislation which provides a context and a value base for students to explore the field and refine a personal value system. The course also provides a general understanding of various types of disabilities, and allows students to explore the types of support that may be needed by individuals and families, as well as the various roles they may choose to take in order to facilitate inclusion and citizenship of persons with disabilities.

DB2110 Issues in Disabilities
This course explores many of the issues and challenges which are faced by persons with disabilities and their families as they attempt to participate in their communities as equal citizens. Students will analyze the issues, explore alternatives, and develop a vision of the changes needed for full participation. Furthermore, students will examine strategies which can be used in building inclusive communities.
Prerequisite(s): DB2300

DB2300 Program Planning
This course familiarizes students with processes which can be useful in supporting individuals and families to plan for their future. Students gain the skills required to coordinate and evaluate an individualized and value-based approach to planning with persons who have disabilities.

DE1110 Applied Research
This course is designed to provide a good understanding of a model for definition, analysis, and solution of technical problems; and to develop the student’s ability to (i) apply diverse methods and strategies in project analysis, (ii) prepare and deliver effective oral technical presentations, and (iii) define and plan a major applied research project.
Prerequisite(s): CM1400 and CM1401

DE1200 Operations Research
This introductory course is designed to provide basic understanding of certain concepts of operations research and the role that these analyses play in decision making. It complements the course Engineering Management CG3400.
Prerequisite(s): MA1101

DE2350 Logistics and Project Management
This is an introductory course that provides the student with a basic foundation in the concepts, tools and techniques of formal project management.
Prerequisite(s): CG1500

DE3300 Information Systems Design
This course covers the application of computer information systems to industrial engineering problems, with particular emphasis on computer network resource management, database management and application software.
Prerequisite(s): ET1150

DE3410 Computer integrated Manufacturing
This is an advanced course for students having some background in technology. Graduating students will possess a good understanding of computer hardware integration, automation, and PLC (programmable logic control) as well as the necessary technical expertise to be able to meet the current needs of the industry.
Prerequisite(s): ETG1430, SP1700, FM3100

DE3430 Computer Integrated Manufacturing
This is an advanced course for students having some background in technology. Graduating students will possess a good understanding of computer hardware integration, automation, and PLC (programmable logic control) as well as the necessary technical expertise to be able to meet the current needs of the industry.
Prerequisite(s): ETG1430, FM3100, ET1150

DM1100 Document Production Fundamentals
This course provides mastery of the keyboard by the touch method at a minimum rate of twenty (20) net words per minute for three minutes. As well, basic
word processing applications are introduced and reinforced through the production and revision of short business documents.

DM1200 Document Production I ●
This course includes keyboarding, file management and basic document formatting. Keyboarding speed on unseen straight copy material is developed to 25 net words per minute for three (3) minutes. Students will use Microsoft word processing software to produce the following documents: notices, announcements, signage, basic correspondence, basic tables, and basic reports.

Note: Students must achieve a typing speed of 30 net words per minute for five minutes in order to pass KB1150. Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

DM1210 Document Production II ●
This course further develops proficiency in document production using intermediate word processing applications. Students will also apply skills in the production of intermediate business correspondence, tables, forms and reports and reinforce their skills in file management.

Note: Students must achieve a typing speed of 30 net words per minute for five minutes in order to pass KB1150. Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

DM1300 Transcription I ●
This course introduces skills in machine transcription and/or using transcription software, and reinforces grammar and punctuation skills. Emphasis is placed on applying proofreading and language skills: grammar, punctuation, and spelling. Decision-making skills are introduced through the transcription of basic business documents.

Prerequisite(s): DM1200 and CM1100

DM1301 Transcription II ●
This course is designed to further develop skills in machine transcription and/or using transcription software. Emphasis is placed on accuracy and speed as well as grammar, punctuation, and spelling competency. Documents will be transcribed from various business environments. Decision-making skills are improved in the transcription of complex unarranged material.

Prerequisite(s): DM1300

DM1310 Legal Transcription I
This course helps students increase their competency in machine transcription and/or using transcription software. Emphasis is placed on accuracy and speed of transcription as well as on grammar, punctuation, and word usage competency. Decision-making skills are enhanced through the transcription of legal documents for general legal procedure, civil litigation and incorporation.

Prerequisite(s): DM1300 Co-requisite(s): DM2210 and OF2500

DM1400 Medical Transcription I ●
This course introduces the student to a basic understanding of medical transcription software and rules of medical transcription, and the development of the students’ skills to transcribe medical correspondence and reports.

Prerequisite(s): DM1300 and DM1210 Co-requisite(s): TM1100

DM1401 Medical Transcription II ●
This course further develops the ability of students to transcribe with accuracy and speed medical correspondence and more specialized reports for various medical specialties. Transcription drills will be used to enhance proficiency in medical transcription with speed and accuracy.

Prerequisite(s): DM1400 and TM1100 Co-requisite(s): TM2200

DM2200 Document Production III ●
This course combines keyboarding development, document production, and word processing to improve proficiency in document production. Keyboarding speed on unseen straight copy material is developed to a minimum of 35 net words per minute for five minutes. Students will reinforce their skills in the production of advanced business correspondence, tables, reports and specialized business documents. Students will also use Microsoft PowerPoint software to prepare presentations.

Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM1210

DM2210 Legal Document Production I
This course combines keyboarding development, word processing concepts, and legal document processing for general legal procedures, civil litigation and incorporation. Keyboarding skills will be reviewed and developed to 35 net words per minute for five minutes with an emphasis on accuracy. This advanced course is designed to teach students the setup and function of various legal and non-legal documents including correspondence, reports, memoranda, accounts, contracts, court documents and corporate papers. These documents will be produced with speed and efficiency using state-of-the-art equipment and software to create a precedent file from which students will merge text from the keyboard. In addition, word processing concepts introduced in DM1210 Document Production II will be further enhanced.

Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM1210 Co-requisite(s): OF2500

DM2240 Document Production IV ●
This course combines keyboarding development and document formatting using a project/simulation approach. Students will be expected to develop and use critical thinking and decision-making skills, and to process and produce documents at an advanced level using Microsoft Office. Students will also perform tasks that require the integration of various software packages i.e., word processing, database, spreadsheets, presentations, electronic mail and calendar.

Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM2200, CP2310 and CP2410

DM2420 Legal Transcription II
This course continues to increase competency in machine transcription and/or using transcription software. Emphasis is placed on accuracy and speed of transcription of business correspondence and legal documents presented in an unarranged, office-style manner. Throughout dictation of the material, the dictator makes editing decisions; phones may ring, and other interruptions may occur. Decision-making skills are further refined through transcription of legal documents for real estate, wills and estates, and family law.

Prerequisite(s): DM1310 Co-requisite(s): DM3250 and OF2530

DM3250 Legal Document Production II (Real Estate, Wills, Estates and Family Law)
This course builds on DM2210 - Legal Document Production I and incorporates many of the basic legal formats learned. This course will introduce students to documents required by a legal practice when handling real estate transactions for both the vendor and the purchaser and will further develop word processing and legal document production skills for wills, estates and family law. Students will produce correspondence, legal documents, and legal precedents required in real estate, wills and estates law, and family law. Using a case approach, students will follow and interpret instructions and produce documents while using check lists to assess priorities and manage time. The students will further develop a precedent file using state-of-the-art equipment and software.

Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM2210 Co-requisite(s): OF2530

DP1100 Digital Electronics
This course introduces students to the field of digital electronics. They will be taught design and diagnosis techniques applicable to digital electronics.

Prerequisite(s): ET1101

DP1110 Digital Systems I (Logic)
This course introduces learners to the field of digital electronics. They will be taught design and diagnosis techniques applicable to digital electronics.

Prerequisite(s): ET1101

DP1310 Introduction to Programmable Logic Controllers
This is an introductory course in programmable logic controllers (PLC) covering the fundamental concepts of digital, numbering systems, logic, gates, circuits, simplification, arithmetic elements, latches, flip-flops, counters, the components in a typical PLC system, configuring, addressing and programming. The laboratory component will develop understanding and skills related to circuit construction, diagnosis and troubleshooting.

Prerequisite(s): ET2100, AE1240

DP1840 Motors Generators and Starting Systems (M, E)
The M and E course will give the student an overview of the principles of all AC and DC motors. The student will be able to differentiate between AC/DC motors. Also cover all aspects of AC/DC generators and alternators theory, including construction and maintenance of engine starters, electrical starters. The inspection and servicing procedures for the starting systems will be covered in this course.

Prerequisite(s): PE1140

DP2110 Digital Systems II (Interfacing)
This course provides the learner with knowledge of the hardware and software associated with digital systems and interfacing requirements for communication from a PC to external environments. Advanced FPGA technologies will be used to interface hardware devices. Interfacing using pneumatics will be used to expand the knowledge of interfacing from electronics to mechatronics.

Prerequisite(s): DP1110, CT2300; CP1270

DP2150 Interfacing & Microcontrollers
This course provides students with an understanding of microcontroller circuits through hands-on experience with the Intel 8051 family of microcontrollers. The microcontroller, its use as a control device in embedded systems, and the hardware requirements associated with interfacing with the environment will be covered. Students will further develop the skills required to troubleshoot, analyze and design complex, automated digital circuits and systems.

Prerequisite(s): DP1100; DP2400; CT1120

**DP2340 Robotics & Computer-Aided Manufacturing**

This course introduces learners to robotics fundamentals; operations; programming; interfacing to other components and systems; and application of robotic technology to computer numerical control (CNC) and computer integrated manufacturing (CIM). Course activities will be concentrated on both pneumatic and electronic robots, CNC’s theory and machine tool control practice and the integrations of engineering manufacturing by using computers and micro-controllers.

Prerequisite(s): DP1100 or DP1110

**DP2360 Function Block Programming**

Function block programming has become the programming language used for most process automation systems. It is currently used in DCSs, standalone controllers, PLCs, and is now being used in field level devices. This course will cover how to develop function block programs and link them to a Human Machine Interface (HMI). The control strategies being taught in this course will start with basic PID control and progress to more complex control strategies with additional variables being displaced on the HMI.

Prerequisite(s): DP2520 or XD2500

**DP2400 Digital/Microprocessors**

This course introduces the student to the Intel microprocessor programming techniques using assemblers and debuggers and provides training in the MS-DOS operating system.

Prerequisite(s): DP1100

**DP2410 Digital/Microprocessors**

This course introduces the student to the microprocessor programming techniques using assemblers and debuggers and provides training in computer interfacing techniques.

Prerequisite(s): DP1110

**DP2430 Digital Interfacing**

This course provides the learner with knowledge of the hardware associated with digital systems and interfacing requirements for communication from a PC to external environments. Interfacing to pneumatic systems will also be introduced.

Prerequisite(s): DP1110, AE1260

**DP2540 Advanced Programmable Logic Controllers**

This is an advanced course in programmable logic controllers (PLC) covering timers, counters, data manipulation, comparison, conversion, arithmetic instructions, word logic instructions, shift registers, rotate registers, sequencers, rotate registers, sequencers, analog inputs and outputs, communications protocols and an introduction to human machine interface concepts. The laboratory component will further develop and strengthen the understanding and skills related to circuit construction and operation and ladder logic programming and troubleshooting.

Prerequisite(s): DP1310

**DP3110 PLC**

This course introduces the learner to the general concepts and programming techniques for digital, analog and peer to peer communications associated with programmable logic controllers (PLC) used in the instrumentation applications.

Prerequisite(s): MP3170, CE2810

**DP3200 Embedded Controller Applications**

This course will reveal why microcontrollers exist in so many products today. It explains the basics in microcontroller design through actual applications and will describe the differences between microcontrollers and microprocessors. Instruction is given in different techniques for making the best use of the microcontroller’s resources. Hands-on experience is provided in the lab environment.

Prerequisite(s): CI2300 or CP11270, DP2410 or DP2110

**DP3240 DCS Configuration**

This course will review the history of Distributed Control Systems (DCS) and provide a comparison of the current system to modern PLC/HMI and SCADA systems. It will provide the participants with the knowledge to troubleshoot a DCS system as well as modify existing configurations, control strategies, and operator interfaces.

Prerequisite(s): DP2360

**DP3300 Microprocessor Interfacing**

This course provides the student with a knowledge of the hardware associated with a microprocessor system and the interface requirements for communication with the environment.

Prerequisite(s): CI2300, DP2400

**DP3310 Microprocessor Interfacing**

This course provides the student with a knowledge of the hardware associated with a microprocessor system and the interfacing requirements for communication with the environment.

Prerequisite(s): CP3410, CI2300

**DP3340 Data Communications**

This is an intermediate level data communications course that introduces the fundamental concepts such as transmission media, analog and digital signals, data transmission and multiplexing.

Prerequisite(s): EI2100

Co-requisite(s): CT2330

**DR1112 Drafting - Basic Drawing and Sketching**

This drafting course requires the use of drawings, views, joint configuration, abbreviations, and weld symbols. It includes information on joint and welding symbols for weldment fabrication.

Prerequisite(s): DR1112

**DR1111 Drafting - Basic Drawing and Sketching**

This drafting course requires the use of basic drawings, specifications, bills of materials, drawing instruments and facilities, and CAD software and hardware. It involves reading basic drawings and diagrams, sketching, interpretation of specifications, and operating the CAD system. It includes information on sketching techniques, types of drawings, and CAD commands.

**DR1120 Blueprint Reading for Welders**
DR1220 Engineering Drawing
Through participation in this course, learners will acquire drafting and design skills that will enable them to design a basic wood-frame structure to the requirements of the National Building Code, Part 9. Learners will acquire the ability to sketch floor plans, main sections, and elevations. Furthermore, learners will be expected to produce a partial set of working drawings of a wood-frame construction (residential) structure using AutoCAD.
Prerequisite(s): EG1110, EG1430

DR1240 CAD Drawings
Through participation in this course, learners will acquire computer drafting skills that will enable them to lay out a variety of engineering drawings (mechanical, civil, and architectural) to industry standards. Specifically, learners will acquire the ability to draw floor plans, sections, details, and elevations, as well as some basic mechanical and structural working drawings.
Prerequisite(s): DR1220

DR1400 Wood Frame Construction
This course is an introduction to wood frame practices and materials with emphasis on foundation, floor, wall and roof construction of residential buildings.
Prerequisite(s): EG1430

DR1700 Basic Drawing and Sketching
This course provides training in blueprint reading and sketching.

DR1770 Basic Drawing and Sketching for NDT
This course provides an introduction to orthographic projections sketching, sectional and primary views. It also introduces the techniques of plan reading and drawing. This course provides training for an NDT Technician Certification. This include both in class practical training.

DR2150 Architectural Drawings
This course is an introduction to Architectural Drawing conventions and applications which focuses on the rationale used in producing the technical drawings needed for conventional wood-frame construction. Emphasis is placed on general drawings such as floor plans and elevations in this course.
Prerequisite(s): EG1430
Co-requisite(s): DR1400

DR2320 Engineering Graphics for Electrical
This course follows the Engineering Graphics course completed in the first year of Engineering Technology. It covers the more advanced commands used in the AutoCAD drafting package, with application examples from across the electrical engineering technology curriculum that require the use of AutoCAD.
Prerequisite(s): EG1430

DR2350 Engineering Graphics for Instrumentation
This course follows the Engineering Graphics course completed in the first year of Engineering Technology. It covers the more advanced commands used in the AutoCAD drafting package, with application examples from across the Instrumentation and Controls Engineering Technology curriculum that require the use of AutoCAD.
Prerequisite(s): EG1430

DR2410 Electronic Computer Aided Design I
This course is designed to give the student a basic knowledge of Printed Circuit Board design techniques required in the electronics industry through the use of AutoCAD, Circuit Maker 2000 and IsoPro software. It introduces the student to specific types of drawings required in the electronics industry to include: Block Diagrams, Logic Diagrams and Schematic Diagrams. The Electronic Specific drawings will be done using Circuit Maker 2000 or equivalent Schematic Capture software. A PCB design will be created using the T-1000 Quick Circuit CNC machine and IsoPro software.
Prerequisite(s): EG1110 and either ET2100 or MP2140

DR2411 Electronic Computer Aided Design II
This course utilizes the latest in computer-aided design software to provide the student with skills necessary to completely analyze any analog or digital circuit prior to construction or implementation. It provides the student with a working knowledge of the latest in computerized design tools used for Digital Simulation, Analog Simulation, and PLA/PAL Construction and Programming. This course makes extensive use of three Computer Aided Design Packages: and the techniques used in this course will be used extensively in future electronic courses.
Prerequisite(s): AE2301, DP1100, DR2410

DR3110 Working Drawings I
This course is an introduction to building construction techniques, architectural working drawings and detailing. It is designed to enable the learner to become involved in the creation and proper use of working drawings. Course material takes the form of lectures, projects, and analysis of such projects.
Prerequisite(s): EG1240, DR2150
Co-requisite(s): BU2300, BU2410

DR3111 Working Drawings II
This is a course dealing with larger buildings of masonry construction. It is designed to enable the learner to become a functional part of a group involved in the creation and proper use of working drawings. Course material takes the form of lectures, group projects, and group analysis of such projects.
Prerequisite(s): DR3110, BU2300, BU2410
Co-requisite(s): BU2201, BU2411

DR3200 Advanced Computer Aided Design
This course is designed to give the learner an exposure to programming logic and data linking between graphics information and text/numerical data. After a general introduction to operating environments, Visual Basic for Applications and AutoLISP, the learners are expected to make extensive use of CAD customization concepts. Data linking through attributes and SQL is used in the development of data tracking with emphasis on Facilities Management. Also included are the concepts and procedures in the presentation of animated drawing and virtual images, which are used in the preparation of the major technical project.
Prerequisite(s): EG2200, PR2300
Co-requisite(s): DR4101

DR3300 Manufacturing Technology
This is introductory course in manufacturing technology. In this course, students are introduced to fundamentals of computer-aided drafting, design and manufacturing (CAD/CAM). Emphasis is placed on theory and practice in the metal fabrication industry through computerized numerical control (CNC) shape cutting.
Prerequisite(s): MC1100 or equivalent

DR3720 Tool Design I
This course is an introduction to tool design and tool making practices. It will provide the student with the basic knowledge required to design simple types of tooling required within the Manufacturing industry.
Prerequisite(s): CF1120
Co-requisite(s): EG2130

DR3721 Tool Design II
The continuation of DR3720 Tool Design I, this course will expand on tool designing methods used in the sheet metal and plastic industries. The course will allow students to create tool design drawings for sheet metal and plastic components. Hands-on lab application will use a Vacuum Former, Injection Molder and Rapid Prototyper.
Prerequisite(s): DR3720, EG2130

DR3810 Advanced Processes
This is an advanced course using equipment available at the Manufacturing Technology Centre. The course is designed to be a CAD/CAM approach to a hands-on, project-based delivery using the CNC mill, lathe, Wire EDM and Laser machines. Completion of the project will require a team approach from all members of the class creating a working environment similar to industry.
Prerequisite(s): SP1731
Co-requisite(s): DR3720

DR4100 Architectural Working Drawings III
This is the third in a series of working drawings courses. The course uses the same building that was developed during the second technical intersession. The focus is on larger structures with a variety of building envelopes including glass and metal curtain walls and composite metal panel systems. Students are required to solve technical problems based on theory and knowledge gained in other courses. More emphasis is placed on details than in other courses.
Prerequisite(s): PR2300

DR4101 Architectural Working Drawings IV
This is the fourth in a series of working drawings courses. The course uses the same building as in Architectural Working Drawings III, but changes the structure to steel. Students are required to solve technical problems based on theory and knowledge gained in other courses. Details include modifications required by changes to the structural system in existing details as well as details of problems not incorporated in other working drawing courses.
Prerequisite(s): DR4100

DR4110 Working Drawings III
This is the third course in a series of working drawing courses. The focus is on larger structures with a variety of building envelopes including glass and metal curtain walls and composite metal panel systems. Learners are required to solve technical problems based on theory and knowledge gained in other courses. More emphasis is placed on details than in other courses.
Prerequisite(s): DR3111

DR4111 Working Drawings IV
This is the fourth in a series of working drawing courses. The course uses the same building as in Working Drawings III. Students are required to solve technical problems based on theory and knowledge gained in other courses. This course focuses on details of technical design problems not incorporated in previous working drawing courses.
Prerequisite(s): DR4110

EC1110 Microeconomics
The course objectives are to develop an understanding of the economic institutions and environment under a market system of exchange and the response made to decisions arrived at by individu- als, businesses, and governments. Specifically, the course examines business organizations and why the attitudes of buyers and sellers determine the prices,
This course covers the basic principles of engineering economics and decision-making. The various methods for economic analysis of alternatives are investigated as well as depreciation methods and income tax consequences.

**Prerequisite(s):** MA 1101

**EC1710 Engineering Economics and Supervision**

This course covers the basic principles of engineering economics like time value concepts, rate of return on capital, economic analyses and alternatives, depreciation, and impact on taxes all of which apply to engineering economics decision making. Also, it gives the student an overview of management principles in the dynamics of supervision that relates to individual and group behaviours in an organizational setting.

**Prerequisite(s):** MA 1101

**EC1750 Construction Economics**

This course will give the learner the knowledge necessary to make decisions based on economic alternatives. It will introduce the learner to the fundamentals of cash flow equivalences and methods of comparison for different alternatives. It will take into account depreciation and the effect of inflation on the evaluation of alternatives. The learner will also be able to compare public sector projects based on benefit-cost analysis.

**Prerequisite(s):** MA 1101

**EC2410 Introduction to Economic Geography and Local Development Planning**

This is an introductory course in Economic Geography with an emphasis on the application of the principles of locational analysis, community economic development, and sustainable development to local economies.

**EE1180 Curriculum I**

This course offers an in-depth exploration of play as an integral component of quality early learning and child care programs. Students will learn about the theory, function and value of play. There will be an emphasis on developing and refining basic skills that help the adult engage in quality play experiences with children. Students will explore play with sand, water, blocks, and manipulatives. Students will also be introduced to the management of time, routines and transitions to ensure quality play experiences for children.

**EE1181 Curriculum II**

The student will develop knowledge of the major theoretical models and approaches currently being used in early learning and child care curriculum. In accordance with provincial standards, the students will develop a working knowledge of the emergent curriculum approach. Students will learn to develop and maintain a developmentally appropriate learning environment as the basis of the emergent curriculum. The student will develop basic skills in the planning, facilitation, documentation and reflection of experiences within an emergent curriculum. A child-centred, active learning approach to curriculum is emphasised. Throughout this course the unique learning styles, individual differences and interests among children will be emphasized and used as a basis for individualizing the curriculum.

**Prerequisite(s):** EE 1180

**EE1290 Positive Behaviour Guidance**

This course provides a foundation for understanding and guiding children's behaviour. Students will learn the principles of guidance and strategies needed to guide behaviour in positive ways. The focus will be on understanding and implementing techniques that foster positive relationships and self-esteem, and create opportunities for learning.

**EE1340 Child Development I**

This is an introductory course in child development. Students will learn terminology related to child development as a foundation for advanced exploration of developmental stages in childhood. Students will also explore the basic principles of child development and learning. An introduction to the concept of child observation is provided as a foundational concept for the study and practice of early childhood education.

**EE1341 Child Development II**

This is a course in child development that focuses on increasing students' understanding of developmental milestones and growth patterns in toddlerhood and early childhood (2 to 6 years of age).

**Prerequisite(s):** EE1340

**EE1360 Observation**

The early childhood education student must be committed to the goal of supporting and enhancing children's development. Becoming a skilled observer is a reliable way to collect valid information about each child's skills, abilities, and their interests and needs. Students will develop knowledge and skills to purposefully observe, record, and interpret child behaviour. Through practical application of a variety of methods to gather observational data, the student's knowledge of children's development, interests, and needs will be enhanced. Students will be able to select appropriate observation methods, interpret and analyze their findings, and apply this knowledge to planning a developmentally appropriate program.

**Prerequisite(s):** EE1340

**EE1420 Creative Experiences I**

This introductory course will provide students with a foundation for creating early learning and child care curriculum. Students will learn about developmentally appropriate experiences in creativity, art, literature and dramatic play. Using a hands-on, participatory approach, students will be provided with opportunities to explore and experiment with related mediums and materials. Students will cultivate a personal sense of wonder and inquiry. The goal is for the student to develop practical play skills that can be applied throughout the early learning environment.

**EE1421 Creative Experiences II**

This introductory course will provide students with a foundation for creating early learning and child care curriculum. Students will learn about developmentally appropriate experiences in music, movement, outdoor play, science, and numeracy. Using a hands-on, participatory approach, students will be provided with opportunities to explore and experiment with music, movement, nature, science, and numeracy. Students will cultivate a personal sense of wonder and inquiry. The goal is for the student to develop practical play skills that can be applied throughout the early learning environment.

**EE1440 Family Studies I**

This introductory course in family studies provides students with a basic understanding of the modern Canadian family as a foundation for learning about partnerships between parents and early childhood educators. It stresses the significance of positive relationships. Students will become familiar with strategies that promote parent-educator partnerships and communication to create and maintain family-centered and culturally sensitive early childhood education.
EE1441 Family Studies II
Effective responses to families' needs require an understanding of the demands and stresses on families. Students will learn about a number of family stressors, methods families use to cope, and supports that may be provided for children and families.

Prerequisite(s): EE1440

EE1480 Inclusion I
This is an introductory course on the philosophy, principles, and appropriate practices of inclusion in early childhood programs. Students will learn about the characteristics of inclusive environments, the roles of those involved, and the use of Individual Support Service Plans.

Prerequisite(s): EE1360, EE1340

EE1481 Inclusion II
This course will discuss variations in developmental ability as a foundation for developing and implementing strategies for supporting all children in an inclusive early learning environment. Students will have an opportunity to learn about atypical or delayed cognitive, speech/language, physical/motor, sensory, and social/emotional development as well as health impairments. The causes, red flags and developmental impact of developmental deviations will be explored. There is a focus on identifying strategies that the early childhood educator can use to create developmentally appropriate learning environments, activities and materials.

Prerequisite(s): EE1480, EE1181, EE1341

EE1870 Community Resources
Strong connections with the community are essential to quality early learning and child care programs. Students will reflect on the importance of community to the health and wellbeing of children and their families. The concept of empowering families to utilize community supports is introduced. Students will identify a broad range of community resources, with opportunities for in-depth examination of specific community resources such as health care professionals, family resource centres, and non-profit organizations. Students will develop the competencies necessary to utilize these resources to support their work as early childhood educators.

EE2180 Curriculum III
This advanced curriculum course provides students with the opportunity to participate in an in-depth exploration of approaches to curriculum. Students will be able to explain the primary theories related to development and learning, as well as advanced curriculum models. Students will have an opportunity to relate this knowledge to advanced planning, facilitation and documentation strategies, including webbing, the Project Approach, and learning stories.

Prerequisite(s): EE1181

EE2255 Advanced Behaviour Guidance
This course offers a more in-depth exploration of guidance theory and its application to the study of children with emotional and behavioural challenges. Students will learn about possible causes and resulting challenges for children. Students will develop practical skills in the prevention and management of challenging behaviour in a team approach. The goal is to develop the skills and an inventory of resources so that educators are able to effectively support children with behavioural challenges.

Prerequisite(s): EE1290

EE2260 Introduction to Child Care Administration
This is an introductory course in early childhood education program administration. The aim of this course is to provide an overview of administrative principles and procedures needed to successfully operate high quality, inclusive early childhood education programs. Knowledge of provincial legislation and regulations, and factors which contribute to quality provide the foundation for developing practical skills related to governance, development and evaluation of quality programs, financial and staff management, menu planning, and working in partnership with parents and the community.

Prerequisite(s): EE2180

EE2340 Child Development III
This is an advanced course in child development. Students will examine primary theories related to child development and learning as a foundation for advanced curriculum planning. Students will have an opportunity to examine the sequential progression of primary developmental skills from birth to age 12 years. The focus is on developing a working knowledge of the theories, principles, and stages of child development for application in early learning and child care curriculum.

Prerequisite(s): EE1341

EE2350 Professional Practice
This course bridges the student to the profession of Early Childhood Education. Students will examine the roots of the early childhood education field as a basis for the study of the current state of early childhood education in Newfoundland and Labrador, Canada and internationally. Students will develop a strong sense of professionalism as an early childhood educator. The goal is to enhance the student’s capacity to envision and advocate for advances in the sector as an early childhood educator.

EE2470 Infant Development & Care
This is an introductory course in infant care. It focuses on the unique needs of infants and how these needs can be met through a developmentally appropriate approach to programming and responsive care during the first two years of life. This approach takes into consideration the developmental needs and individual and cultural differences among infants, as well as the critical role of the infant-educator relationship. Particular attention is paid to the various roles of the educator in the design, planning, implementation, and evaluation of a developmentally appropriate physical, social-emotional, and cognitive environment for infants. The importance of establishing positive relationships and open communication patterns with parents will be highlighted in the course.

Prerequisite(s): EE2340, EE1360

EE2500 School-Age Development and Care
This is an introductory course in school-age care. Students will develop knowledge and skills for working with children ages five through twelve. The course focuses on the unique needs of school-age children and how these needs are met through a developmentally appropriate approach to programming. Students learn about child development patterns and milestones in middle childhood and early adolescence as a foundation for understanding the principles of inclusive school-age care. Particular attention is paid to the various roles of the early childhood educator in the design, planning, implementation, and evaluation of developmentally appropriate physical, social-emotional, and cognitive environments for school-age children.

Prerequisite(s): EE1341, EE1181

EE61100 Engineering Graphics
This is an introductory level course in Engineering Graphics which uses CAD as a tool to produce engineering drawings. Engineering Graphics provides visually oriented data that is usable by technical, engineering, and manufacturing personnel to assist in the production of goods and services. Topics covered include an introduction to CAD, geometric terminology and constructions, orthographic projection, pictorial sketching, dimensioning conventions, and sectional views.

EE6110 Engineering Graphics II
This course focuses on basic engineering graphics principles and standards to effectively communicate technical graphical design and also provides the foundation for more advanced engineering graphics concepts. Engineering graphics is the predominant means by which accurate information is communicated within industries pertinent to all engineering technology disciplines. From the simplest in-the-field sketch, to the most advanced 3-D model, each may constitute a legal document.

EE61160 Technical Graphics
This course focuses on basic engineering graphics principles and standards to effectively communicate technical graphical design and also provides the foundation for more advanced engineering graphics concepts. Engineering graphics is the predominant means by which accurate information is communicated within industries pertinent to all engineering technology disciplines. From the simplest in-the-field sketch, to the most advanced 3-D model, each may constitute a legal document.

EE61240 Architectural Graphics I
This course is taken concurrently with DR2150 - Architectural Drawings and is a continuation of EG1430 - AutoCAD Essentials. It is designed to provide the learner with a greater knowledge of CAD and provide an introduction to 3D visualization basics related to Architectural Working Drawings.

Prerequisite(s): EG1110, EG1430

Co-requisite(s): DR2150

EE61241 Architectural Graphics II
This course is designed to introduce the learner to Building Information Modeling (BIM) concepts and working knowledge of related software. Learners will use 3D design visualization and incorporate all building related information into one working model. From these modeling techniques, learners will focus on development of presentation graphics, working with shadows and sun studies and completing simple renderings.

Prerequisite(s): EG1120

Co-requisite(s): DR3110

EE61300 Engineering Graphics
This is an intermediate CAD-based drafting course designed to provide students with the ability to interpret and prepare mechanical and structural drawings which extend the principles presented in Engineering Graphics EG1100. Also, prepares the student hands-on practice in reading and interpreting blueprints.

Prerequisite(s): EG1110

EE61430 AutoCAD Essentials II
Computer Aided Drafting software is a tool that enables you to produce engineering drawings more accurately and with greater efficiency. It also facilitates the ability to share files with other software programs. This course is designed in a pedagogical
format by presenting the fundamental concepts at the beginning and moving toward the more advanced and specialized features of AutoCAD. It is also designed with the understanding that the student has the engineering graphics fundamentals necessary to apply the AutoCAD software. Applications and examples have an inclination towards many different technology disciplines.

**Prerequisite(s):** EG1110

**EG1520 Engineering Graphics for Mechanical Engineering Technologies**

This intermediate level course is designed to provide students with the ability to interpret and prepare drawings used in specialized areas of mechanical engineering. Students will prepare and interpret Assembly Drawings, Fluid Power Schematics, Sheet Metal Development, Piping Drawings, Welding Drawings and P & ID diagrams. The development and use of AutoCAD Symbol Libraries and Attribute Enhancement will also be studied.

**Prerequisite(s):** EG1430

**EG2130 Engineering Graphics**

This is an advanced course in computer aided drafting and design. Parametric 3D CAD software is used for both virtual prototyping of mechanical systems and development of related working drawings. The command tools commonly used for 2D sketch development, 3D feature creation, part assembly, 2D drawing generation, 2D drawing annotation, and 3D simulation are explored. For 2D drawing annotation, particular emphasis is placed on the command tools used for geometric dimensioning and tolerancing.

**Prerequisite(s):** EG1430

**EG2240 Architectural Graphics III**

This is a three part course that allows the learner to explore the world of advanced CAD. The first section is designed to give the learner the ability to customize and extend the many features of CAD according to individual needs. The second section introduces the learner to attributes, data extraction, and data linking between graphics information and text/numerical data. The final section includes the concepts and procedures in the presentation of animated drawings and virtual images which are used for client presentation drawings.

**Prerequisite(s):** EG1241

**Co-requisite(s):** OR3111

**EH1100 Earth Systems**

Transferable to MUN Earth Sciences 1000. A survey of major earth systems, including the interior of the earth, lithosphere, hydrosphere, atmosphere, and biosphere – their structure, composition and interaction.

**EH1102 Concepts and Methods in Earth Sciences**

Introduction to a broad range of concepts concerning the development of the geological record and the Earth; practical methods for collection of field based data; topics in map interpretation and geometric analysis, stratigraphy, paleontology, structure and petrology design to develop the skills necessary to understand and prepare geologic maps and other general skills needed to pursue a career in Earth Sciences.

**Prerequisite(s):** EH1101 or MUN Earth Sciences 1000

**EL1120 Folklore**

This course is an introduction to folklore. It deals with the role that tradition plays in society. The student is given an opportunity to investigate his/her own culture by partaking in field work in the different genres of folklore.

**EL1130 Introductory Business French I**

This course is designed as an introduction to French for Anglophone adults. It will focus on both oral and written communication and will introduce students to vocabulary and basic grammatical structures necessary to communicate in French. There will be an emphasis on helping students understand and communicate (at an introductory level) with French-speaking people in the business world.

**EL1131 Introductory Business French II**

This course is a continuation of Business French I and is intended to provide further practice in both oral and written communication. It builds on the vocabulary, expressions and grammatical structures acquired in Business French I and focuses on improving a student’s ability to communicate (at an introductory level) in French in the business world.

**Prerequisite(s):** EL1130

**EL1150 Introduction to Folklore**

Transferable to MUN Folklore 1000

The role that tradition plays in communication, art and society will be discussed through an examination of folklore materials from Newfoundland and Labrador and the English-speaking world. Through assignments, students will identify and reflect on folklore in their own lives and the lives of others.

**EL1160 Leisure Arts**

This is an introductory course focusing on various art techniques. Students will experience using basic materials and techniques in drawing, ceramics, metal, painting, and photography. This course is not suitable for students enrolled in Visual Arts or Textiles: Craft and Apparel Design programs and therefore cannot be taken as an elective in those programs.

**EL1320 Folklore Studio**

Transferable to MUN Folklore 2401

This course is an examination of the traditional cultures of Europe and North America with special reference to Newfoundland and Labrador. A selection of the following areas will be covered: settlement patterns, architecture, work and leisure patterns in the folk community, calendar customs, rites of passage, folk religion, folk medicine, language and folk culture, folk costume, foodways and folk art.

**Prerequisite(s):** Normally Folklore 1000: Introduction to Folklore is the prerequisite for this course; this can be waived with special permission of the head of the Folklore Department.

**EL1360 Introduction to Anthropology**

Transferable to MUN Anthropology 1031

This course is an introduction to the field of social and cultural anthropology. Taking a cross-cultural approach to the study of society and culture, the focus of this course will be on the global issues of ecology, technology, economy, politics, kinship and ideology. This course will also examine linguistic anthropology, but the emphasis will be on how we use language for human communication rather than on formal linguistics. We will consider how human societies go about solving some of the fundamental problems of human existence. How do we make a living? What forms of social organizations do we take part in and why? How do we think about the universe and our place in it? We will compare some of the social and cultural systems we have in our society with those found in other societies. In this manner we can hope to learn valuable lessons about how people from other cultures attempt to solve existential problems and at the same time see our own social and cultural formations in a new and more critical light.

**EL1420 Introductory French I**

Transferable to MUN French 1500. This is an introductory course designed for students with little or no previous knowledge of French and for students who wish to review basic vocabulary and structure. The course uses mainly the present tense, but also includes an introduction to the past tense (passé compose with “avoir”). EL1420 has a 500-word vocabulary, and covers the most common situations of daily life.

**EL1430 Introductory French II**

Transferable to MUN French 1501. This course teaches the use of past tenses and more advanced structures. Students begin to read short texts which are faithful to the original, to write longer compositions, and to explore more complex situations.

**Prerequisite(s):** EL1420 or MUN French 1500 or High School French 3200

**EL1440 Introductory French III**

Transferable to MUN French 1502. In EL1440, it is assumed that students already have a knowledge of basic vocabulary, grammar and constructions of French, in particular the use of the present tense in regular and irregular verbs, and the use of past tenses. This course continues to practice those tenses, but concentrates on the forms and uses of the future, the conditional and the subjunctive tenses. Students are expected to achieve and maintain a high level of accuracy in spelling, grammar and pronunciation. The work of composition and intensive vocabulary building continues, and students are expected to engage in more advanced oral practice.

**Prerequisite(s):** EL1430 or MUN French 1501.

**EL1500 Introduction to Linguistics**

Transferable to MUN Linguistics1100 or 2100

This course provides a general, fairly non-technical introduction to linguistics. Students will learn basic concepts about the nature of language and its function in communication. Some technical terminology and elementary analysis related to the study of language and linguistics will be introduced.

**EL1530 Fine Art Printing**

Students’ will gain an understanding of the relationship between a digital photographic file and an electronic printer. Particular attention will be paid to the relationship of the file and a final presentation print.

**EM1100 Intro to Emergency Management**

This course provides an overview of the fundamental components and structure of emergency management in Canada. Topics include the history, principles and framework of emergency management; the role of relevant legislation; and the components of prevention, mitigation, preparedness, response and recovery.

**EM1150 The Emergency Community**

The emergency management community can be described as an orchestra with the emergency manager as the conductor. The emergency management community is comprised of players from both the public and private sectors; each contributes to the overall success within their specific role, responsibilities, capabilities and vulnerabilities. This course will examine the players and their contributions, strengths and limitations. This course will provide the opportunity as much as possible to have selected topics presented by members of the emergency community.

**Prerequisite(s):** EM1100

Available through Distributed Learning © Available through correspondence
EM1200 Mitigation and Prevention
This course provides an in-depth introduction to mitigation and risk assessment. Mitigation actions modify, deflect, stop or reduce the impact of a disaster. Mitigation is considered the cornerstone of emergency management. Students will be introduced to the types and categories of mitigation. Students will identify, and explain the steps in mitigation planning. Mitigation planning (pre disaster and post disaster) will be discussed, described and explained. Students will be given opportunities to develop mitigation strategies and present during an emergency management presentation scenario.
Prerequisite(s): EM1100; EM1150

EM1220 Resilience and Sustainability
A disaster resilient community has capacity to absorb stress (physical and psychological) through adaptation. It has the capacity to manage, or maintain certain basic functions and structures, during disastrous events. It has the capacity to recover or ‘bounce back’ after an event. The learner will develop the skills and techniques to effectively enhance a community’s resilience. This will be accomplished through theory, application of the theory to practical exercises and the application of assessments and analysis tools for capacity identification, resource availability and community sector collaboration.
Prerequisite(s): EM1100; EM1150

EM1240 Emergency Preparedness
The discipline of preparedness within the field of emergency management can best be described as a state of readiness to respond to an emergency situation. No emergency management organization can function without a strong preparedness capability which is built through planning, training and exercising. This module introduces the principles of planning, the preparedness planning cycle and a framework for the development of an all-hazards emergency plan that can be customized to a variety of organizations.
Prerequisite(s): EM1100; EM1150

EM1300 Emergency Response
When an emergency occurs, the immediate focus is on meeting the needs of people, saving lives and protecting property and the environment. The response may last from a few hours to many days, depending on the situation. This module will introduce the student to emergency response planning, its elements and the role emergency management partners play in the response.
Prerequisite(s): EM1100; EM1150; EM1240

EM1310 EM Systems
This course provides an in-depth review of the management systems, frameworks and tools used to hand an emergency response. Students will examine systems such as the Emergency Operation Centre (EOC) and the Emergency Site Management (ESM) including the National Incident Management System (NIMS) and Incident Command System (ICS) frameworks and related software applications. Students will have the opportunity to take part in a simulated exercise and perform the various functions and roles required in these systems.
Prerequisite(s): EM1100; EM1150

EM1330 The Recovery Process
The discipline of recovery in emergency management often begins in the initial hours and days following an emergency or a disaster and can continue for months and in some cases years, depending on the severity of the event. This course introduces principles and guidelines for managing short and long-term recovery.
Prerequisite(s): EM1100; EM1150

EM1350 Exercise Design
Conducting exercises supports personnel training and improves the organization’s effectiveness and capability. This module examines the different types of exercises that the emergency manager can use to evaluate one or more aspects of the organization’s emergency management program and the design process to conduct an exercise.
Prerequisite(s): EM1100; EM1150; EM1300; EM1310

EM1370 GIS for Emergencies
This course introduces and explores the potential GIS applications in all stages of emergency management; planning, preparedness, response and recovery. Students will gain valuable insight into how GIS technology interfaces with other information resources to support problem-solving and decision-making processes in emergency management workflows. Through case studies, laboratory exercise, independent study and a major project, students will gain practical experience in applying GIS to support emergency management processes.
Prerequisite(s): G51320; EM1100; EM1150

EM1400 Management and Leadership
To be a successful emergency manager, one needs more than just technical skill and knowledge. He or she also requires good interpersonal, management and leadership abilities. This course introduces some tools with which to explore and develop these personal qualities.
Prerequisite(s): EM1100; EM1150

EM1420 Emergency in the 21st Century
The field of emergency management is rapidly changing. This module presents the many challenges and opportunities that lie ahead for emergency managers, whether global, national, local or professional ones. The effects of climate change, population density, new technologies and resource scarcity will be examined in relation to phases of emergency management.
Prerequisite(s): EM1100; EM1150

EM1500 Emergency Capstone Project
The capstone project enables the student completing a post diploma in Emergency Management to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two/three to carry out an in-depth Emergency Management Plan for an organization, agency or a community. The plan will be a comprehensive document covering all aspects of the emergency planning process and procedure. Students can commence planning for the course prior to the beginning of the final semester. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings.
Prerequisite(s): All Semester 2 courses

EN1100 Environmental Science
This is an introductory course in environmental science for Geomatics Engineering Technology. Since Environmental Science is the study of the interactions between humans, other living organisms, and the environment, this course gives the student knowledge of how humans can live, develop, and properly use the earth’s resources while understanding the many environmental issues. The solving of various environmental problems, as well as improving and conserving our natural and urban environments, will form the basis for further studies in the science of Geomatics.

EN1300 Environmental Technology
This course presents an overview of environmental concerns in the oil and gas industry. Both the effect of the industry on the environment and vice versa. This is a seminar course. All students will be expected to complete a minimum of five seminars.
Prerequisite(s): EM1200, EM1230

EN1520 Environmental Sampling Techniques
This course provides the student with the fundamentals of environmental sampling techniques pertaining to procedures, protocol, equipment, and standardized procedures. “Fate and Effects” monitoring will be used as a practical approach to determine the effects of pollution impacts on our environment.

EN1530 Water Quality
This course will introduce students to aspects of water quality as it is related to the local scene and an in-depth review of the Canadian Water Quality Guidelines. Students will study the processes involved in the treatment of water by various end users. The course also covers the issue of water supply for various users and the ways and means to meet these demands.
Prerequisite(s): EN1520

EN1540 Air Pollution: Interpretation, Analysis and Control
This course enables the student to make practical assessments of air pollution problems. Meteorology and its importance with respect to the formation, transportation, and dispersal of air pollutants are examined. Examination of the techniques and equipment necessary for the collection and analysis of airborne pollutants are discussed and reviewed.
Prerequisite(s): EN1520

EN1600 Environmental Site Assessment I
This course, oriented to the needs of the environment industry, introduces the student to the local, provincial and federal environmental legislation, regulations, guidelines and policies that apply to environmental site assessment. The site assessment process is introduced with emphasis on case studies involving a range of projects. It will focus on the CSA/CMC phased approach with projects including a Phase I assessment of a local facility.

EN1601 Environmental Site Assessment II
This course will introduce students to the concepts, principles, methods and techniques involved in reclamation of a site that has been abandoned, accidentally contaminated or required to clean up to conform to environmental standards. This comprehensive course will allow students to make use of course work previously completed in other courses to execute a site remediation plan and supervise contractors performing work, ensuring they complete the project according to the specifications in the contract.
Prerequisite(s): EN1600, EN2300, EN2700, GE1300
Co-requisite(s): EN3300

EN2120 Environmental Citizenship
This course is designed to foster environmental ethics and sustainable development. It provides an opportunity for students to discuss, debate, analyze and
study current controversial issues related to the use and management of natural resources. Students will be encouraged to consider various perspectives, and offer potential solutions to local, national and global environmental challenges.

**EN2220 Solid Waste Management**  
This course in the waste management field will introduce the issues of solid non-hazardous waste material. Students will be introduced to major topics including: sources, transportation, processing, and disposal of non-hazardous and hazardous waste material. The course will also introduce the student to the topic of solid waste disposal sites. Students will focus on the design, maintenance and operation of waste disposal sites. Hazardous wastes will include sewage sludges, drilling fluids, medical, industrial, and radioactive wastes.

**EN2300 Environmental Law**  
This course, oriented to the needs of the environment industry, introduces the students to the local, provincial, and federal environmental legislation, regulations, guidelines and policies. The Canadian system of law and justice is introduced with emphasis on case studies involving environmental law. The legislative framework, court process, role of the prosecutor will be reviewed. An appreciation of the need for environmental protection, due diligence, personal and corporate liability, and liability will be addressed.

**EN2320 Occupational Health & Safety**  
This course enables students to demonstrate knowledge of basic environmental principles and legislation and/or regulations governing the protection of the environment and workplace, together with understanding hazardous materials, how to control them, and learning the necessary skills to work safely.

**Co-requisite(s):** CM1401

**EN2420 Environmental Management**  
This course is designed to prepare the student to analyze potential environmental difficulties associated primarily, but not restricted to the construction industry. In addition, the student will be prepared to recommend, design and implement solutions to eliminate or minimize the effects of construction or associated activities.

**EN2500 Water Resources: Hydrology and Hydrogeology**  
This course provides the fundamental concepts required to understand hydrology. This course will address hydrologic principles, flood analysis, urban hydrology, and groundwater hydrology. The course also gives the student an overview of well construction, maintenance, rehabilitation, and monitoring techniques.

**Prerequisite(s):** EN1520

**EN2540 Wastewater Management and Treatment**  
This second course in the water resources field will cover the issue of wastewater. Students will be introduced to the topic of wastewater by covering the following areas: flow, characteristics, collection systems, processing, operation of systems and treatment. This course will also consider storm water management.

**Prerequisite(s):** EN1520, BL1130

**EN2600 Environmental Abatement I (Air)**  
This course is designed to provide the student with basic knowledge of the nature of air pollution in general, and specific technical knowledge and skills in the management and abatement of gaseous waste streams arising from manufacturing industries such as pulp and paper. The course begins with overviews of the impact of air pollution on human health, a discussion of global air quality trends, and a brief look at indoor air pollution. Students are then introduced to concepts of criteria and hazardous air pollutants, especially particulates, gases and odors. Current and innovative air pollution abatement processes are studied in detail. Special attention is focused on provincial and federal Environmental Acts, in particular how these relate to employer and employee responsibilities.

**EN2601 Environmental Abatement II (Water)**  
This is a combined theory/laboratory course dealing with water quality and wastewater treatment. The first part of the course focuses briefly on water quality: acidity, alkalinity, pH, dissolved oxygen, biological oxygen demand, chemical oxygen demand, and hardness. Other parameters are explored; such as physical characteristics, dissolved gases, metals, organics and radionuclides. The second emphasis of the course is an introduction to knowledge and practices, theories and applications relevant to in-plant abatements, followed by the treatment of wastewater flowing from industrial settings. The characteristics of primary and secondary treatment processes, and plant operations will be studied. Sampling techniques, monitoring procedures and instrumental methods of analysis are covered in theory and laboratory sessions. The lab work includes testing for total solids, BOD, suspended solids, settling, and oxygen uptake. Current and innovative waste treatment processes are covered. Special attention is focused on provincial and federal Environmental Acts, in particular how these relate to economics and to employer and employee responsibilities.

**Prerequisite(s):** CH2720, FM2320

**EN2700 Environmental Project Management**  
This course will enable the technician to effectively plan and implement a project based on environmental engineering principles. Practical applications will assist this goal through techniques and methods studied in this course.

**EN3110 Environmental Engineering**  
This course is designed to acquaint the learner with the major areas of pollution control and mitigation. Learners will gain an appreciation of the issues concerning sustainable systems, gain familiarity with environmental legislation and risk management systems, as well as various environmental hazards in the workplace. Environmental concerns due to air pollution and noise pollution will be discussed, as well as solid waste management and wastewater treatment.

**EN3200 Environmental Impact Assessment**  
This course, oriented to the needs of the environment industry, teaches the students the basics of the environmental assessment procedure. The course carries on from the Environmental Law course where a broad overview of the legislation is presented. We review the assessment legislation in detail and develop the tools needed to perform an environmental impact assessment. We conclude the course by performing a case study to assess a small local project.

**Prerequisite(s):** EN1600, EN2300, EN2700

**Co-requisite(s):** EN3300

**EN3300 Environmental Auditing**  
This course will enable the student to assure compliance with relevant Federal, Provincial, and Municipal requirements; identify, evaluate and reduce environmental risks and liabilities; and conduct an environmental audit of a local industrial operation.

**Prerequisite(s):** EN1600, EN2300, EN2700

**EN3400 Environmental Management and Protection**  
This course introduces students to the fundamentals of resource management. It examines common pollutants found in industries in Newfoundland and Labrador. It explores the various pieces of legislation that apply to industrial pollutants in the province. Pollution reduction and treatment are also studied.

**Prerequisite(s):** CH3450

**EO1001 Beginner Listening**  
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable aural comprehension for a variety of tasks.

**EO1002 Beginner Speaking**  
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on Speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking for a variety of tasks.

**EO1003 Beginner Reading**  
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable the comprehension of uncomplicated texts on a variety of topics.

**EO1004 Beginner Writing**  
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.

**EO2001 Intermediate Listening I**  
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable proficiency in a variety of tasks.

**Prerequisite(s):** EO1001

**EO2002 Intermediate Speaking I**  
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking for a variety of tasks.

**Prerequisite(s):** EO1002

**EO2003 Intermediate Reading I**  
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading for a variety of tasks.

**Prerequisite(s):** EO1003

**EO2004 Intermediate Writing**  
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.

**EO2005 Advanced Listening II**  
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable comprehension of uncomplicated texts in a variety of topics.

**EO2006 Advanced Speaking II**  
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on Speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated speaking for a variety of tasks.

**EO2007 Advanced Reading II**  
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading for a variety of tasks.

**EO2008 Advanced Writing II**  
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.
EO2004 Intermediate Writing I
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable the production of writing for a variety of tasks.
Prerequisite(s): EO1004

EO3001 Intermediate Listening I
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 7. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable proficiency in a variety of tasks.
Prerequisite(s): EO2001

EO3002 Intermediate Speaking II
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 7. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable proficiency in a variety of tasks.
Prerequisite(s): EO2002

EO3003 Intermediate Reading II
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 7. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading for a variety of tasks.
Prerequisite(s): EO2003

EO3004 Intermediate Writing II
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 7. While special emphasis will be placed on writing, all language skills will be integrated. Objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.
Prerequisite(s): EO2004

EO4001 Advanced Listening I
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable aural comprehension in a variety of tasks. Objectives in this course may be supported or attained through enrollment in a college credit course.
Prerequisite(s): EO3001

EO4002 Advanced Speaking I
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrollment in a college credit course.
Prerequisite(s): EO3002

EO4003 Advanced Reading I
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrollment in a college credit course.
Prerequisite(s): EO3003

EO4004 Advanced Writing I
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable writing proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrollment in a college credit course.
Prerequisite(s): EO3004

EO5001 Advanced Listening II
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable aural comprehension in a variety of tasks. Objectives in this course may be supported or attained through enrollment in college credit courses.
Prerequisite(s): EO4001

EO5002 Advanced Speaking II
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking proficiency for a variety of tasks. Objectives in this course may be supported or attained through enrollment in college credit courses.
Prerequisite(s): EO4002

EO5003 Advanced Reading II
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrollment in college credit courses.
Prerequisite(s): EO4003

EO5004 Advanced Writing II
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable writing proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrollment in college credit courses.
Prerequisite(s): EO4004

EP1110 Introduction to Business
This course will introduce students to business systems, forms of business ownership, production, marketing, finance, personnel and labour relations, international business and small business ownership. Students will describe and compare aspects of business, economics, and finance, including the functional areas of a business.

EP1130 Business for Information Systems
This course will provide students with an overview of business principles and practices relevant to the IT industry. Students will be introduced to the functional areas of business and the processes within each function. Emphasis will be placed upon awareness and literacy of each functional area as they apply to the local and national markets.

EP1140 Business Operations in Information Technology
This course will introduce students to the ways that organizations improve their business practices through the use of computer technology. The course emphasizes systems technologies, enterprise integration, business applications, and critical analysis of organizational change through information systems.
Prerequisite(s): EP1130 or EP1150

EP1150 Business for Information Technology
This course will provide students with an overview of business principles and practices relevant to the IT industry. Students will be introduced to the functional areas of business and the processes within each function. Emphasis will be placed upon awareness and literacy of each functional area as they apply to the national and local business market.

EP1180 Business Management
This is an introductory course that presents a fundamental approach to planning and operating a small firm. It incorporates basic steps in planning and operating a small business and explains how each step can best be accomplished.

EP2130 Business Principles and Practices
This course will provide students with an overview of business principles and practices relevant to the IM industry. Students will be introduced to the functional areas of business and the processes within each function. As well, students will be exposed to business intelligence and enterprise resource planning systems.

EP2150 Entrepreneurship
This is an introductory course that analyzes aspects of entrepreneurship and the link between entrepreneurs and small businesses. It presents a fundamental approach to planning and operating a firm incorporating basic steps in business management and explains how each step can best be accomplished.

EP2200 Business Planning 1
This is a comprehensive advanced-level course in developing a comprehensive business plan. The student will identify a business idea, product or service, conduct an industry analysis, and develop plans for operational and human resources, marketing, and finance. The student will also conduct a risk assess-
Press section topics include press configurations, stock dewatering, and wet-end chemical processes. Preparation, stock proportioning, use of additives, wet-end processes and progressing to the finished product in the paper making process, starting with the dryer section. The purpose of this course is to present the students with an opportunity to follow the logical progression in the paper making process, starting with the wet-end processes and progressing to the finished product. This course will cover the dryer section, student investigates unit processes and product qualities related to calendaring, super-calendaring, winding, coating, sheeting, wrapping and storage. This course also deals with the recovery and recycling of secondary fibres such as waste corrugated containers, newsprint and high quality papers. Finally, sampling and testing methods are covered. Measurements include basis weight, burst, tensile and tearing strengths, smoothness, porosity, stiffness, brightness, opacity and colour measurements.

Prerequisite(s): ES1301

ES2301 Manufacturing Processes IV (Petroleum Refining)

In this course, the students are introduced to petroleum refining. The course begins with a history and overview of the oil and gas industry, including oil and gas production, petroleum refining, and the petrochemical industry. The focus of the course is on petroleum refining processes. Topics include identifying the products produced, types of feed stock, physical and chemical properties of the petroleum produces, distillation, conversion, enhancement and blending. Distillation process topics cover fractionation principles as it applies to atmospheric and vacuum distillation. Conversion processes include fluid catalytic cracking, visbreaking and hydrocracking. Enhancement processes focus on catalytic reforming, isomerization, sweetening (Merox system), and alkylation. Students also investigate the blending processes required to produce finished products (i.e. unleaded gasoline). All processes explored will include basic concepts, an overview of the applicable process chemistry, equipment, process and instrumentation diagram, process flow diagram, feed and product characteristics, and emergency procedures.

Prerequisite(s): ET1100

ET1100 Electrotechnology

This is an introductory course in electrical theory covering the basic concepts of electricity, circuit analysis and magnetism. The laboratory work is designed to develop skills in the construction of electrical circuits, and the use of electrical measuring instruments to reinforce theoretical concepts.

Prerequisite(s): ES2301

ET1210 Electrotechnology

This course covers advanced topics in AC and DC circuit analysis as well as an introduction to DC machines and transformers. It will provide the necessary background for students to enter second year Electrical and Electronics programs.

Prerequisite(s): ET1101, MA1101

ET2150 Advanced Circuit Analysis

In this course, learners will review techniques of differential equations, first order and second order: integral combinations; growth and decay problems; the analysis and solution of source free RL and RC circuits; driven RL and RC circuits using differential integral calculus; sinusoidal analysis; the concept of phasors, and steady state response. The learner will learn mathematical techniques and apply these to the concepts to analyze and solve differential equations. Topics include waveform analysis and synthesis, time domain analysis, solution of differential equations using Laplace transforms, application of Laplace transforms to solve electric circuits, and derivation of transfer functions. In addition, the following topics will be covered in this course: Fourier expansion of periodic function, even and odd, Fourier analysis of wave forms and their application to electrical signals, and impulse response.

Prerequisite(s): MA2100, ET1151 or MP2140

ET2210 Silvics/Dendrology I

This is an introductory course to trees and shrubs both native and introduced to Newfoundland and Labrador. Species identification, classification and distribution are studied in detail. The influence of the environment upon the growth and reproduction of trees, stands, and forests are explored. Forest site analysis and classification are introduced and studied in detail.

Prerequisite(s): BL1120

ET2211 Silvics/Dendrology II

This is an advanced course of study in Forest Ecology. Forest site analysis and classification are studied in detail. The influence of forest genetics, the physical and biotic environment, upon the forest ecosystem are covered. Native and exotic tree/shrub identification is a key component within the course.

Prerequisite(s): ET2210, FR1330

Co-requisite(s): FR2360, FT1401

ET2510 Population Ecology

Concepts of population dynamics and modeling and applications in fish and wildlife management.

Prerequisite(s): BL1400, RM1401, RM1500
FH1120 Nutrition I
This is an introductory course in basic nutrition. Canada’s Guidelines for Health Eating, Recommended Nutrient Intakes, and Canada’s Food Guide are presented. This course reviews the digestive system, the absorption and transport of nutrients, and common digestive problems. A study of the macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins and minerals) as well as their sources, functions, requirements and deficiencies, digestion and absorption is also included.
Prerequisite(s): FH1120

FH1121 Nutrition II
This course is a continuation of Nutrition I. Topics include water and major minerals, alcohol and nutrition, energy balance and weight management. Nutrition through the entire lifecycle is studied.
Prerequisite(s): FH1120

FH1140 Childhood Nutrition
This introductory course addresses the fundamental concepts of nutrition. An overview of the functions and requirements of the recommended nutrient intake is presented, followed by an introduction into the general principles of menu planning for children.

FH1200 Principles of Physical Fitness
This course provides an introduction to principles of physical activity. Students will study the human anatomy with particular reference to skeletal and muscular systems of the human body, principles of training, exercise and weight control, fitness theory and active living and use of pedometers in physical activity. The course is designed for potential fitness leaders and active living programmers.

FH1230 Physical Activity Programming for Older Adults
This course provides students with an introduction to physical activity programming for the older adults. It is designed to enable students to plan and evaluate a variety of programs for older adults based on current knowledge and trends.

FH1340 Health & Safety
This course will address the attitudes and knowledge early childhood educators must have in order to support the health and safety needs of children and themselves. Students will develop a working knowledge of policies and practices that adhere to provincial legislation and standards with regards to the health and well-being of children, and the establishment of positive habits and attitudes toward health and safety. Students will recognize symptoms of ill health and determine appropriate care for a sick child in a group setting. Students will recognize safety hazards and plan to minimize risk. Students will explore the issue of child maltreatment and recognize their responsibilities as early childhood educators with regards to recognition and reporting.

FH1350 Physical Fitness & Lifestyle Management
This module will concentrate on officer safety, nutrition and fitness. Candidates will be introduced to proper stretching, warm up, cool down and aerobic exercising techniques. Students will be required to work up to a fitness level acceptable for an enforcement officer. This physical fitness component will include participation in a Physical Abilities Requirement Evaluation (PARE). Students are encouraged to participate in extra-curricular fitness activities to compliment this program.

FH1360 Childhood Nutrition
This introductory course addresses the fundamental concepts of nutrition. Students will study the basic nutrients and learn about the recommended daily intake for children. Students will develop a working knowledge of Canada’s Food Guide and utilize this knowledge in the planning and preparation of healthy snacks and meals for children.

FH1500 Personal Wellness
Optimal wellness is critical to a student’s success in the workplace and in life. Students will be introduced to the outline of wellness: physical, mental, social, spiritual, intellectual, environmental, occupational and financial. Students will determine their own ‘wellness level’ and be encouraged to make healthy lifestyle choices. The goal is for the student to achieve a sense of balance in life which is attained through high levels of understanding and being active in each dimension of wellness.

FH2120 Therapeutic Nutrition I
A study of diets as it pertains to modification of normal nutrition according to particular disease conditions. A discussion of the development and completion of nutritional care plans is completed. Practice is adjusting menus for specific diets as it relates to the treatment of illness is emphasized.
Prerequisite(s): FH1120

FH2121 Therapeutic Nutrition II
This course is a continuation of Therapeutic Nutrition I. The student will study disease conditions and therapeutic nutrition treatment of illness.
Prerequisite(s): FH2120

FM2100 Fluid Mechanics
This is an introductory course in fluid mechanics designed to develop both the knowledge of the laws and principles governing fluid mechanics and the ability to apply this knowledge in analyzing related engineering applications. The course also provides a base for advanced courses in piping design, ducting design, and fluid power systems.
Prerequisite(s): PH1100

FM2201 Mechanics (Dynamics)
This course in mechanics introduces the fundamental concepts of dynamics and builds on the basic principles of statics presented in previous courses. This course provides students with the basic requirements for the analysis of engineering problems and for understanding the design principles of various machines and mechanisms. The topics studied include kinematics and kinetics of particles, impulse and momentum, kinematics of rigid bodies, forces and acceleration, balancing, work and energy, and mechanical vibrations.
Prerequisite(s): CF2540, FM2200

FM2220 Fluid Mechanics
The student will learn the theory and solve problems pertaining to hydrostatic pressure, manometers, the Bernoulli Equation, fluid flow, and head loss. The student will apply this knowledge in the laboratory and in the selection of pipes, piping systems, and pumps. After obtaining an understanding of fluid mechanics fundamentals, the student uses this knowledge to investigate closed hydraulic systems and pneumatics. The associated hydraulic equipment and industrial applications are explored. Pneumatic principles, and pneumatic systems, as used in an industrial plant are introduced.
Prerequisite(s): MA1101, PH1101

FM3100 Fluid Power (Hydraulics/Pneumatics)
This is an intermediate level course designed primarily for students in the Electrical and Mechanical Engineering Technology Programs.
Prerequisite(s): PH1101, E1520 or DR2320

FM3200 Machine Design
This course is an introduction to the primary considerations in the design of machines as they relate to each other, to their operators and to the environment. Machines will be seen as converters of energy and as the extension of human power. The composition and characteristics of machines will be presented. The underlying principles of mechanics of machines and strength of materials demonstrated enabling the student to participate in the design of machinery. The student will gain practical manufacturing exposure and experience.
Prerequisite(s): CF2540

FM3220 Machine Design
This course extends generic machine design concepts presented in FM3200 by introducing students to typical industrial application components used for machine design. Emphasis is placed on students being able to follow accepted industry practice in the design, specification and selection of standard machine design components.
Prerequisite(s): FM3200

FN1100 Personal Finance
This course is an introduction to the basic principles and concepts of personal finance. The course is organized into three parts: financial planning, financial security, and credit. In Part 1, financial planning, the student learns how to make financial plans for saving and spending; the functions of wills; and the basics of the taxation system. In Part 2, financial security, the student examines economic risks and ways to minimize them. In Part 3, credit, the student explores the complexities of consumer credit.

FN2110 Business Finance
This course is an intermediate course in the complexities of business financial management. The student will explore financial analysis and planning, working capital management, capital budgeting, and long-term financing. The course will integrate both short-term and long-term financial considerations, as well as concepts from accounting, statistics, and economics.
Prerequisite(s): AC2260

FN2111 Business Finance II
The purpose of this course is to extend knowledge and understanding of finance principles by focusing on various problems and decisions confronting the financial manager. Specific topics include sensitivity analysis, corporate planning models, financial statement analysis and forecasting; short and long-term financing; commercial banking; capital budgeting; dividends and dividend policy; options, swaps, futures, forwards, firm valuation; and mergers and acquisitions. The student will conduct an in-depth study of issues and tools that financial managers use in financial planning and strategic management. The course will use real-world cases to teach the material.
Prerequisite(s): FN2110

FR1230 Forest Fire Management
This course is an introductory course and will provide the student with basic information on activities concerned with the protection of forests from fire.
Co-requisite(s): FT1400

FR1330 Natural Resource Measurements I
This course is designed to introduce basic principles, skills and techniques in the sampling and measure-
FR1331 Natural Resource Measurements II
This advanced level course in the principles of natural resources measurements places emphasis on the design, conduct, and application of a variety of survey methods to access forest characteristics. The application of statistical analysis to timber cruises, forest inventories, growth prediction and site classification is the central focus. The measurement of forest products is addressed, as is the assessment of non-timber values of the forest ecosystem.
Prerequisite(s): FR1330, MA1670, FT1400
Co-requisite(s): FR1560

FR1400 Wood Products
This course deals with the importance of the wood products industry in our society. The identification characteristics and uses of Canadian woods are studied. As well, the fundamental wood properties and the technical requirements for various wood products are studied.

FR1550 Environmental Impacts of Forest Practices
Analyze principles and practices of a forest industry in terms of sustainable development.

FR1560 Timber Harvesting I - Roads
This second year course uses skills learned in Forest Surveying for the collection of field notes for various labs, especially road location. Students are introduced to forest road construction terminology, environmental guidelines, and planning and operating practices. Students plan, do reconnaissance, and layout a forest road.
Prerequisite(s): SU1710, FT1400
Co-requisite(s): FR1331, FT1401

FR1561 Timber Harvesting II
This course is a follow-up to Timber Harvesting I that covers road construction in the woods. This course deals mostly with harvesting and trucking forest products. Emphasis is on environmental management of woodlands operations as well as logging system productivities and costs.
Prerequisite(s): FR1560

FR2340 Hydrology
This course has been designed to provide students with principles and application methods related to water resources. The content extends from a review of hydrological processes and principles in general, through detailed analysis of the water cycle in particular, and finally to linking of theory to practical applications. The applied aspects of this course center on field and office methodology use to assess water resources from the perspective of input, storage and output at the watershed level. The relationship between water, forests and humans is a central theme.
Prerequisite(s): FR1330

FR2350 Forest Entomology/Pathology
The study of the major forest enemies (excluding fire) of North America. Emphasis will be placed on insects which damage or benefit the forest and on biotic and biotic causes of forest disease. Prevention and protection measures of the above are covered. Field collection and diagnosis are emphasized, stressing the importance of signs leading to early detection.
Prerequisite(s): FY2211, FR1330

FR2360 Silviculture
A study of a wide range of silvicultural practices as applied to the establishment and tending of forest stands. This includes the design, conduct and monitoring of operational programs in planting, seeding, site preparation, tree seed procurement and improvement and nursery production as well as stand manipulation (i.e. thinning, pruning, and chemical tools). The identification of problem sites, budget preparation etc., are prepared.
Prerequisite(s): FR1330
Co-requisite(s): FY2211, FT1401

FR2430 Wildlife Management
An introduction to the basic Wildlife Management principles, concepts and techniques as they relate to big game, fur bearers, small game, waterfront, inland fishing, non-game and endangered species. Lectures concentrate on principles and concepts while labs are designed to apply techniques and learn identification and life history.
Prerequisite(s): FR1330

FS1100 Family Services I
Family Services I is the first in a three course series designed to introduce the student to family services. This initial course, Family Services I will focus on family structure by looking at the different structures of family, marriage, and alternative living arrangements, socialization and parenting. Upon completion of this course, students will understand the diversity of families in today’s society, trends concerning families in the 21st century, the meaning of marriage and other forms of partnering, and the responsibilities of parenting.

FS1101 Family Services II
Family Services II is the second course in the three course series. Family Services II will focus on family needs by looking at the challenges families face in today’s society. Some of these challenges include balancing paid and unpaid work, poverty, stress, violence, abuse, divorce, blended families, and dealing with empty nests and aging parents. Often these challenges create many needs for families that require outside intervention or assistance. The purpose of this course is to provide students with the knowledge and practical skills to understand the needs of families and to be able to identify when families are not coping effectively. Students will learn appropriate strategies for dealing with dysfunctional families while gaining an understanding of the diversity of challenges and the diversity of solutions.
Prerequisite(s): FS1100

FS2100 Family Services III
Family Services III is the third and final course in the family services series. Family Services III will focus on family supports by introducing students to social welfare policies and programs. The course will provide an historical overview of social welfare policies and programs in both public and private sectors. Students will learn how these policies and programs outline the services that are available to meet the needs of families. The purpose of this course is to provide students with the knowledge and practical skills to assist families in being functional by providing emotional support, listening, understanding and demonstration empathy for the situations that many families are dealing with. Students will learn the roles associated with providing support to families.
Prerequisite(s): FS1101

FT1230 Surveying Field Camp
This is a two-week field camp to immerse the student in the field applications of Geomatics data gathering, mensuration and presentation. The work is done in a group setting where team play is essential for successful completion of assigned projects. The planning, execution, checking and successful completion of the group projects is emphasized.
Prerequisite(s): SU1320, SU1500
Co-requisite(s): SU1321

FT1250 Hydrographic Field Camp
This camp is a hands-on session where the data gathering skills learned in Hydrographic Surveying are reinforced by practical field work. A Hydrographic survey is undertaken for a project area. The project is designed, the data gathered and the final project compiled to Canadian Hydrographic Service standards.
Prerequisite(s): SU2320
Co-requisite(s): SU1541; SU3300; SU3500

FT1340 Civil Engineering Technology Camp
This course introduces the learner to the practical elements of various construction processes. In addition, this course provides the learner with an insight into on-site supervision and construction.

FT1400 Forestry Field Camp
A two week field camp is conducted at the end of the intersession semester. This camp is designed to enable students to take part in major practical exercises using standard practices of measurement and data collection in an operational setting. Throughout the two week period, the proper care of equipment, safety practices, and basic skills such as map interpretation, compassing, vegetation identification, ecosystem analysis, etc. are emphasized. Major topics reinforce prior learning from the second semester and intersession.
Prerequisite(s): FR1330, SU1550, SU1710
Co-requisite(s): FR1230

FT1401 Forestry Tour Camp
This five day field tour is designed to ensure that students have an opportunity to visit and investigate a number of special forestry facilities and operations across the Province. Visits include such unique operations as the Provincial Nursery at Wooddale, Newfoundland’s largest sawmill in Glenwood, and the Fire Center and Thomas Howe Demonstration Forest in Gander.
Co-requisite(s): FY2211, FR2360, FR1560

FT1410 Fish and Wildlife Field Camp
A two-week field camp conducted at the end of the intersession semester. This camp is designed to enable students to take part in major practical exercises using standard practices of measurement and data collection in an operational setting. Throughout the two-week period the proper care of equipment, safety practices, and basic skills such as map interpretation, compassing, vegetation identification, trapping, and other wildlife techniques are emphasized. Major topics reinforce prior learning from the second semester and intersession.
Prerequisite(s): FR1330, SU1550
Co-requisite(s): RM1400, RM1500

FT1430 Fish & Wildlife Camp II
A one-week field camp conducted during the third semester. This camp is designed to enable students to participate in research projects being undertaken by a major external agency (National parks, Canadian Forest Service, Provincial Wildlife and DFO). Students are involved in the accumulation of field data for these projects.
Co-requisite(s): RM2200
FT1620 Petroleum Field Camp and Safety
This course is designed to provide students with practical knowledge in the area of drill rig operation. This training is provided on a land-based drill rig. Training is also provided in sour gas handling (H2S), Workplace Hazardous Materials Information System (WHMIS), First Aid and Transportation of Dangerous Goods (TDG).
Prerequisite(s): SP2410, PM2110

FY1100 History of Cinema
An examination of the history of cinema from its beginnings to the present. Through lecture, observation, and critical examination, students will be exposed to the evolution of styles, cinematic techniques, and the institutional culture of film. This will provide the student with a background in the general history and development of the medium.
FY1200 Film Production Basics
This course will expose the student to the inner workings of the world of making motion pictures. The fundamental processes, personnel, job descriptions, and role responsibilities will be covered in depth.

FY1220 Short Film Production
This inter-sectional workshop will constitute an advanced practicum in the course work covered in the first semester. Students will apply acquired technical skills and theoretical knowledge to plan and shoot a short silent film.
Prerequisite(s): Semester One

FY1240 Rigging and Grip
Rigging and Grip will provide instruction in the practical skills associated with hardware rigging, scaffolds, and the maintenance, placement and movement of lighting stands and equipment associated with motion picture production.
Prerequisite(s): FY1200
Co-requisite(s): FY1250

FY1250 Lighting and Electrics
Lighting and Electrics will cover the practical skills associated with light operation in the motion picture environment. Topics include: the function and maintenance of lights, cables, electric connections. Reading layouts, schematics, testing, troubleshooting, and practical set ups and light “gags”.
Prerequisite(s): FY1200
Co-requisite(s): FY1240

FY1300 Language of Cinema
This course will introduce students to the grammar of cinematic language. Through lecture, discussion, historical survey and practical analysis student will gain an understanding of the way films are planned and assembled to present a coherent narrative.
Prerequisite(s): FY1100
Co-requisite(s): CM1550

FY1320 Advanced Digital Video
In Advanced Digital Video students will become familiar with professional standard video cameras and camera accessories associated with cinematic production techniques. Through practical exercises students will gain a working knowledge of the capabilities, limitations and technical issues of modern digital video production.
Prerequisite(s): MM2300
Co-requisite(s): FY1300

FY1400 Avid Editing
This course will introduce students to the practical exploration of editing options and theoretical knowledge required when using an Avid suite to edit raw footage.
FY1500 Certifications
Certifications will be a collection of short form courses that will supply a battery of sanctioned certificates required for film production union referral status.

FY2200 Documentary Film Production
This “project oriented” course will introduce students to the demands of development, funding, distribution and small unit film crew film making normally associated with documentary film production.
Prerequisite(s): FY1320
Co-requisite(s): FY1400

FY2220 Final Film Production
In Final Film Production students will finalize a show reeling illustrating their acquired skills.
Prerequisite(s): FY1220

FY2300 Cinematography
This course will cover the theoretical issues and practical application of the craft of cinematic photography and lighting.
Prerequisite(s): FY1300
Co-requisite(s): VA1400

FW1290 Journalism Field Work
Journalism students work for four weeks at a professional news organization, applying and building upon the training they received in their first two semesters. Students pursue learning objectives related to their individual career goals while receiving on-the-job training. In conjunction with a field supervisor (who is an employee in the placement agency), the instructor supervises and evaluates the student’s progress.
Prerequisite(s): JL1821, JL1511, JL1430

FW1390 Journalism Field Work (Post Diploma)
Post diploma journalism students work for four weeks at a professional news organization, applying and building upon the training they received in their first two semesters. Students pursue learning objectives related to their individual career goals while receiving on-the-job training. In conjunction with a field supervisor (who is an employee in the placement agency), the instructor supervises and evaluates the student’s progress. Post diploma students will produce a major piece of public service journalism during the placement.
Prerequisite(s): JL1831; JL1511

FW1450 Field Placement I
This course consists of a four-week placement with a human services agency in a voluntary capacity. Students are responsible for obtaining their own placements in collaboration with their field placement instructor. Students are encouraged to seek field placements which allow them to meet personal interests and goals. Each student will be assigned a field placement supervisor who will monitor and evaluate the student’s progress. Students are responsible for completing and submitting field placement documentation for evaluation and grading.
Prerequisite(s): FW1450

FW1470 Field Placement I
This course consists of a five-week placement in a hospitality setting in a voluntary capacity. The program instructor will assist each student in securing a placement in a hospitality setting which can meet the student’s personal interests, goals and skill level. In conjunction with the Field Placement supervisor, the program instructor supervises and evaluates the student’s progress.
Prerequisite(s): WHMIS, NFSTP, valid First Aid/CPR Certificate, Clear Certificate of Conduct, Updated Immunization Record, updated Resume, successful completion of all Semester 1 and 2 courses and a signed completed field placement contract.

FW1600 Field Placement I
During field placement, students begin to link theory to practice. Students will participate in seminars to learn basic knowledge and skills necessary for a successful placement experience, and spend a block of time at a field placement site. In this first supervised placement, the focus will be on students becoming familiar with the role of the early childhood educator and the program itself. Students will practice interacting and responding in positive ways to children, and engage in developmentally appropriate play with individual and small groups of children. Please note that time will be spent in the College’s demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.
Prerequisite(s): valid First Aid Certificate
Co-requisite(s): EE1180, EE1340, EE1290, EE1420, FY1340

FW1601 Field Placement II
During this second supervised field placement students will continue to link theory to practice, participating fully and assisting with all aspects of the program. It is expected that confidence and competence is increasing in interacting with and guiding children’s behaviour, and working with staff, families and community members. Students will begin to add developmentally appropriate materials to the learning environment to support children’s play, and will plan and implement a variety of developmentally appropriate activities for individual and groups of children. The importance of an inclusive, child-centred, active learning approach will be reinforced. Please note that time will be spent in the College’s demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.
Prerequisite(s): EE1180, EE1340, EE1420, EE1340, EE1290, EE1600

FW1710 Supervised Field Placement Experience I
Supervised field placement is an integral part of the total curriculum allowing students the opportunity to apply knowledge and training gained from the semester and constitutes a basic preparation for a wide range of professional practice for full-time registered students. The course instructor will assess students throughout the semester and place accordingly in a variety of approved settings to display leadership qualities and work independently using skills acquired from the beginning of the semester for four weeks (160 hours) following course training. Students will be placed in instructor approved agencies such as: long term care
facilities, hospitals, municipal recreation departments, and community agencies. Throughout the semester, students will review field placement requirements and documentation, types of placements, and professional conduct. The instructor supervises and evaluates the student’s progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** Valid First Aid/CPR Certificate, Valid Certificate of Conduct, Updated Immunization Record

**Co-requisite(s):** FH1200, RS1230, RS1100, RS1280

**FW1711 Supervised Field Placement Experience II**

This course is the second of four supervised field placement experience courses. It is an integral part of the total curriculum allowing students to build on experiences gained from FW1710 while providing students opportunities to apply knowledge and training gained from winter semester. As well, students will be prepared for placements based on standards acceptable to the industry. Course instructor will assess students throughout the semester and place accordingly in a variety of approved settings to display leadership qualities and work independently using skills acquired from the semester which constitutes a basic preparation for a wide range of professional practices. Students will review previous placement experiences, types of placement and placement documentation issues and concerns. The instructor supervises and evaluates the student’s progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** FW1710, RS1280, RS1100, Valid First Aid/CPR Certificate, Valid Certificate of Conduct, Updated Immunization Record.

**Co-requisite(s):** RS1250, RS1450

**FW2310 Field Placement III**

During the third supervised placement in an early childhood program the focus is on students working in teams along with staff to implement the program. Students will continue to link theory to practice as they plan inclusive activities for children in small groups and based on the interests of the individual child. Students are expected to demonstrate initiative with regards to independently facilitating the play of individual children and small groups.

**Prerequisite(s):** EE1301, EE1720, FW1311

**FW2311 Field Placement IV**

During the fourth supervised placement the focus is on students working in teams to take responsibility for all aspects of the day to day operation of the early childhood program. Students will continue to link theory to practice as they plan and implement the routines, schedule, program, and interact with parents and community service providers. They will collaborate with staff to prepare and implement plans that meet the needs of all children. Students are expected to demonstrate competence with regards to independently facilitating the play of individual children and small groups. With the guidance and assistance of the program supervisor, students will modify and adapt materials to include all children in activities and routines. It is also expected that students will collaborate with the program staff to implement specific plans for individual children, including those with challenging behaviours.

**Prerequisite(s):** EE 1800, EE2160, EE2270, FH1140, FW2310

**FW2470 Field Placement II**

This course consists of a five-week placement in an institutional setting in a voluntary capacity. The program instructor will assist each student in securing a placement in an institutional setting which can meet the student’s personal interests, goals and skill level. In conjunction with the field supervisor, the program instructor supervisor evaluates and program student’s progress.

**Prerequisite(s):** FW1470, WHMAIS, NSFSP, Valid First Aid/CPR Certificate, Clear Certificate of Conduct, Updated Immunization Record, Updated Resume, successful completion of all Semester 3 and 4 courses and a signed completed field placement contract.

**FW2600 Field Placement III**

During this third supervised field placement the focus is on students working in teams along with staff to implement the program. Students will plan cumulative play experiences and utilize webbing as a tool for planning and documentation of the curriculum. Students are expected to demonstrate initiative with regards to independently facilitating spontaneous and pre-planned play experiences for individual children, small groups, and whole groups. Students are expected to demonstrate an inclusive approach to curriculum and interactions with families. Please note that time will be spent in the College’s demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.

**Prerequisite(s):** EE1181, EE1341, EE1421, FH1360, EE1360, EE1440, EE1480, EE2500, FW1601

**FW2601 Field Placement IV**

During this fourth supervised field placement, students are expected to demonstrate increased competence in planning and implementing the routines and schedule, preparing and implementing a cumulative curriculum to meet the needs of all the children, and interacting with parents and community service providers. With guidance, students will implement specific supports for children with challenging behaviours. Students will promote the philosophy of inclusion in all aspects of their interactions with children, families, and the community. Please note that time will be spent in the College’s demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.

**Prerequisite(s):** EE2210, EE2255, FW2600

**FW2710 Supervised Field Placement Experience III**

The purpose of this supervised field placement experience is to provide experience in administration practices and procedures through placement in a community based agency/organization. Students review previous placement experiences, types of placement, and placement documentation issues and concerns. Students select field placement sites based on personal interests, goals, and placement availability. The instructor supervises and evaluates the student’s progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** FW1701, Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record, Current Resume.

**FW2711 Supervised Field Placement Experience IV**

The purpose of this supervised field placement experience is to provide experience in administration practices and procedures through placement in a community based agency/organization. Students review previous placement experiences, types of placement, and placement documentation issues and concerns. The instructor supervises and evaluates the student’s progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** FW2710, Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record, Current Resume.

**FW2800 Field Placement**

Students will work in the graphics industry under the direct supervision of an employer; with their progress being monitored and evaluated by faculty in the Graphics programs. The supervised field placement is an integral part of the total curriculum in the Graphic Design and Graphic Communications programs, and provides students with direct experience in the industry that can lead to a wide range of professional practice.

**Prerequisite(s):** Successful completion of all program courses in Semesters 1 to 5, SD1180

**FW2811 Field Placement Reflection**

Students will reflect upon and evaluate their field placement experience. Based upon this reflection and evaluation, students will have an opportunity to revisit skill-sets and areas for development.

**Prerequisite(s):** FW2810

**GA1120 Typography I**

Students will be introduced to the history of the graphics industry and will study the historical evolution of typography from its beginning to its application in today’s industry.

**GA1121 Typography II**

Students will address contemporary issues in typography as they apply to print, web, and mobile devices. Students will develop design solutions for common typographic issues such as readability, legibility, navigation and coherence.

**Prerequisite(s):** GA1120

**GA1140 Vector Graphics**

Students will gain an introduction to the basics of Vector Graphics used on dual platforms within graphic communications.

**GA1170 Graphics Problem Solving**

Students will gain an understanding of practical and relevant mathematics specific to disciplines within the graphics industry and learn to directly apply relevant mathematics concepts. Students will learn about topics which emphasize problem-solving skills that apply practically to printing and design.

**GA1180 Graphic Design History**

Students will gain a clear understanding of the history of the graphics industry. Students will study the historical evolution of typography from its beginning to its application in today’s industry.
GA1220 Color Management
Students will learn to effectively manage and use color in a digital graphic arts environment. Students will learn effective color management principles on both Apple Macintosh and PC platforms, and cover color systems and translations between color gamuts in detail. Students will also gain a clear understanding of the elements and principles of color theory, and how color can be used to create more effective images for the graphics industry.
Prerequisite(s): GA1170

GA1230 Finishing & Bindery I
Students will gain an understanding of the background and methods used for finishing and bindery and how they apply to graphic communications.

GA1231 Finishing & Bindery II
Students will gain an understanding of the advanced methods used for finishing and bindery as it applies to graphic communications.
Prerequisite(s): GA1170, GA1230

GA1320 Digital Printing I
Students will receive hands-on skill development in printing to digital devices. Students are required to become proficient in the skill areas involved in providing short run, full-color documents and on-demand printing.

GA1321 Digital Printing II
Students will gain an understanding of the principles of digital practices. The focus will be on advanced machine operation and quality control.
Prerequisite(s): GA1320, GA1421

GA1350 Motion I
Students will be introduced to the principles and elements of motion design through studio practices at beginning and advanced levels. Students will be exposed to the first phase, "type in motion", which emphasizes the relationship between typographic principles and animation fundamentals. Students will then gain knowledge during the second phase when an advanced applied approach to the language and principles of motion is explored. Students will also develop skills in digital creativity throughout this course.

GA1351 Motion II
Students will expand upon the principles and elements of motion design studied in Motion I. Students will continue with studio lessons and practices at an advanced level and implement a practical demonstrated skill set in motion graphics.
Prerequisite(s): GA1350

GA1420 Digital Page Layout I
Students will learn the basic technique of assembling visual elements.

GA1421 Digital Page Layout II
Students will learn electronic page assembly using the techniques of page layout software on the computer. Students will learn about the flexibility of the page layout software as it applies to production for graphic communications.
Prerequisite(s): GA1420
Co-requisite(s): GA2570

GA1430 Page Composition I
Students will gain an understanding of basic page composition as it applies to the graphics industry. Students will explore topics which emphasize developing digital layout skills using industry-standard software tools, while exploring different types of graphic design projects for traditional and digital printing processes.

GA1431 Page Composition II
Students will gain an understanding of intermediate page composition as it applies to the graphics industry by working on long document design and production. Students are exposed to topics which emphasize developing digital layout skills while using industry-standard software tools, and exploring different types of graphic design projects for traditional and digital printing processes.
Prerequisite(s): GA1430

GA1470 Web Processes
Students will be introduced to the basic skills in web processes. Students will be required to collect and process data from web-based applications, and this collected data will be processed and managed through software applications.

GA1520 Image Manipulation I
Students will gain foundational skills required to use equipment and software to record, store, and manipulate digital images. Students will also gain an understanding of the hardware and skills required for the graphics industry.
Prerequisite(s): GA1170

GA1521 Image Manipulation II
Students will gain advanced skills required to use equipment and software to record, store, and manipulate digital images. Students will also gain an advanced understanding of the hardware and skills required for the graphics industry.
Prerequisite(s): GA1170, GA1520

GA1620 Offset Printing I
Students will learn the basic operation of small offset duplicators.

GA1621 Offset Printing II
Students will apply the principles and practices of the offset press.
Prerequisite(s): GA1620

GA1640 Illustration I
Students will be introduced to the basics of illustration as it is used in the graphics industry, and will develop traditional and digital illustration skills. Observation and experimentation with current traditional and digital graphic communications drawing tools, and an emphasis on both print- and screen-based graphic design projects are the focus of this course.

GA1641 Illustration II
Students will further develop their illustration skills using vector-based drawing software current in the graphics industry. An emphasis will be placed on complex projects that incorporate vector and bitmap illustration, as well as typographic and layout skills.
Prerequisite(s): GA1640, GA1120

GA1740 Textiles Graphics & Imaging I
Students will gain an understanding of the techniques and methods of transferring digital images to a variety of textile products. The emphasis will be on creation, output, and production of graphic images.
Prerequisite(s): GA1140, GA1420

GA1741 Textiles Graphics & Imaging II
Students will gain advanced computer and production skills in the program area. Students will focus on the development of professional skills acquired through a selection of self-directed projects.
Prerequisite(s): GA1740

GA1750 Display Graphics & Assembly I
Students will be introduced to the techniques and methods of applying digital images to a variety of materials used in the sign and display advertising industry. Emphasis will be on creation, output and assembly of graphic images.
Prerequisite(s): GA1140, GA1421

GA1751 Display Graphics & Assembly II
Students will gain advanced skills in display graphics and assembly. Student focus will be on equipment maintenance, team building, and productivity.
Prerequisite(s): GA1750

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GA1880 Business Practices
Students will develop an understanding of common business practices in the graphics industry. Students will be introduced to the business requirements of freelance graphic design work, including pricing, estimating, specification-writing, subcontracting, contract and copyright law, time management, taxation and self-promotion.

GA1890 Business Practices
Students will develop their understanding of common business practices in graphic communications. Students will focus specifically on the business requirements of graphic communication work, including pricing, estimating, specification-writing, subcontracting, contract and copyright law, time management, taxation and promotion.

GA2320 Digital Printing III
Students will gain the skills required to ensure the equipment is functioning to equipment manufacturers’ specifications. Students will focus on efficient machine operation and maintenance.
Prerequisite(s): GA1321

GA2350 Motion III
Students will be introduced to the principles and elements of motion design through studio practices at beginning and advanced levels. Students will be exposed to the first phase, “type in motion”, which emphasizes the relationship between typography principles and animation fundamentals. Students will then gain knowledge during the second phase when an advanced applied approach to the language and principles of motion is explored. Students will also develop skills in digital creativity throughout this course.
Prerequisite(s): GA1351

GA2380 Production for Designers
Students will receive a basic overview of production methods and equipment used in the graphics industry. After completion of this course, students will have an understanding of the equipment with supervised operation.
Prerequisite(s): GA1170, GA1431, GA1641

GA2420 Digital Page Layout III
Students will learn the techniques of page layout using advanced electronic page assembly software on the computer. Students will be working with advanced features of the software plus the exploration of different types of software for page layout. Students will also explore and develop electronic documents that will be published to mobile devices.
Prerequisite(s): GA1421, GA2570

GA2430 Page Composition III
Students will gain an understanding of advanced layout as it applies to the graphics industry by working on electronic document design and production. Students will explore topics which emphasize enhancing digital layout skills while using industry-standard software tools, and while exploring different types of graphic design projects for screen-based documents.
Prerequisite(s): GA1431

GA2570 Production Workflow
Students will gain the skills required to develop workflow methods while maintaining quality control. Students will develop estimate sheets, quotation sheets, job dockets, and a tracking system while using computer software and workflow devices developed by the student.

GA2620 Offset Printing III
Students will learn to apply the principles and practices of the offset press.
Prerequisite(s): GA1621

GA2640 Illustration III
Students will further develop their illustration skills using vector-based and bitmap-based drawing software current in the graphics industry. Students will be working on advanced projects that incorporate vector-based and bitmap-based illustration, typographic and layout skills for both print and screen-based (static and motion-based) graphic design projects.
Prerequisite(s): GA1641

GA2720 Design Management Identity
Students will gain advanced understanding of and experience with managing and developing complex identity systems for the private, governmental and non-profit sectors.
Prerequisite(s): MR1340, VA1231

GA2740 Advanced Graphics Imaging
Students are encouraged to research new technologies in graphics imaging. Students may develop research or merge with current imaging methods. Students will receive a combination of lectures and self-study followed by a presentation of the research compiled.
Prerequisite(s): GA1740, GA1750, GA2420, GA1321, GA1520

GD1110 Level Design I
Good level design strives to bring out the best game play in a game, provide an immersive experience, and sometimes to advance the storyline. Level Design I will introduce students to the tools and concepts used to create levels for games. The course will incorporate level design and architecture theory, critical path analysis, game balance and storytelling as they relate to games.
Prerequisite(s): GD1200, GD1300
Co-requisite(s): GD1301

GD1111 Level Design II
Virtual environments are a big part of any game. They require combining architecture, landscape design and cinematography to create dramatic, engaging, aesthetic and functional environments. By combining principles of design with existing level design knowledge, students will create immersive interactive 3D environments. Terrain creation, object creation, lighting and texturing are among the topics focused on in this course.
Prerequisite(s): GD1110, MM2610
Co-requisite(s): GD1520

GD1200 Digital Visual Design
This course provides the foundation for visualizing and applying the principles and concepts of design, color, and visual expression to interactive digital work. It introduces the theory and hands-on practice of creating artwork in digital media using Photoshop and pixel art through a project driven curriculum.

GD1250 Interactive Narrative
Interactive Narrative studies the interaction of user interaction into narrative. Methods for analyzing interactive story will be realized by first studying traditional (linear) narrative structure and then comparing it with the principles underlying non-linear work. Video games and other forms of interactive narrative will be studied to examine issues of navigation in time and space, the placement of the user and interactive and collaborative authoring. Students will apply concepts and methods from the course and develop their own interactive narrative using multimedia tools.

GD1300 Game Design I
This course is an introduction to the methodologies and processes of game design. Through an in-depth study of game theory and the gaming audience, the structure of games and their interaction with the user, and the balance of rules with freedom and risk with reward, students will gain a thorough understanding of game design. Topics discussed include interface design, data representation, and feedback mechanisms. The most popular game genres will also be examined, as well as a look at the different platforms and styles of play in today’s games.

GD1301 Game Design II
Easy-to-play but difficult to master games are what defines a casual game. The casual game must be simple in design but challenging to play. Various styles and platforms as well as the demography of gamers that play casual games are studied. In this course students will design, prototype and build casual games.
Prerequisite(s): GD1300

GD1400 Game Interface Design
This course examines the navigation and control, visual appeal, and functional aspects of the game interface. Examination of successful and unsuccessful user interfaces are used to illustrate the importance and process of designing both functional and appealing user interfaces. Students will apply interface design principles to design interfaces for various game scenarios.
Prerequisite(s): GD1100, GD1300

GD1430 Introduction to Flash
This course will introduce students to the Flash environment and tools. Topics to be covered include interface basics, drawing, objects, type, importing, layers, symbols and instances, animation, interactivity, sound and publishing. Introduction to Flash also will examine the fundamental concepts and elements of ActionScript.

GD1520 Game Design Project I
This course exposes students to the rigors of the game development environment. Students will design, develop and prototype a game using a popular level editor. Students will rotate the project management duties through the project development.
Prerequisite(s): GD1301
Co-requisite(s): GD1111

GD1550 Game Design Project II
This course focuses on producing video games using 3D software and game engines. Students work in a team environment and follow production practices employed in the video game industry to develop a multi-level game. Students will rotate the project management duties through the project development.
Prerequisite(s): GD1500, GD2300

GD1510 Cinematography for Games
This course studies cinematography basics and how these techniques are applied to game design. How to tell a compelling story using camera placement based on character and environment is the main focus. Camera techniques such as panning and zooming are explored as well as how to use those techniques in games through examples. The importance of good lighting and how to handle transitions to new lighting arrangements are also examined. The essential areas

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of sound effects, interactive music, movement, and dialogue are also covered.

**GD1600 Business of Game Development**
The course will cover the basics of game business management. Topics to be covered include market analysis and marketing/sales, managing development, managing a budget, subcontracting work, negotiation, contracts, and intellectual property.

**Prerequisite(s): GD1301**

**GD2100 Level Design III**
This course continues the in-depth examination of level design. By combining principles of design with existing level design knowledge, students will create immersive interactive environments. Materials, lighting, particle effects and artificial intelligence are among the topics focused on in this course.

**Prerequisite(s): GD1101**

**GD2101 Level Design IV**
This course again furthers the in-depth examination of level design. By combining principles of design with existing level design knowledge, students will create immersive interactive environments. Cinematic, scripted sequences, optimization and sound are among the topics focused on in this course.

**Prerequisite(s): GD2100**

**GD2300 Game Design III**
A serious game is a software or hardware application developed with game technology and game design principles for a primary purpose other than pure entertainment. Applying contemporary theories of education students will create and prototype games. Students will study serious games as well as institutional tools and tutorials, games based on scientific principles and the future of game play in education.

**Prerequisite(s): GD2301**

**GD2301 Game Design IV**
This course provides a systematic introduction to the design of virtual worlds. It covers the literary, economic, sociological, psychological, physical, technological, and ethical foundations of design, while providing the reader with a deep, well-grounded understanding of VW design principles. It covers everything from MUDs to MOOs to MMORPGs, from text-based to graphical VWs. A student successfully completing this course will be able to participate in the design and development of VW applications as well as understand the capabilities and limitations of a VW application.

**Prerequisite(s): GD2300**

**GE1120 Basic Geology**
This is an introductory geology course designed to give the student a solid foundation on which to pursue the fundamentals of the science of geology. Topics covered include mineralogy, mineral identification, rock classification, and the economics of mineral resources. Class lectures are supplemented by extensive lab work where students study and examine minerals; and igneous, metamorphic, and sedimentary rocks.

**GE1230 Geology for Geomatics/Surveying ET**
This is an introductory course in physical geology and exploration geophysics designed for learners in the Geomatics/Surveying Engineering Technology Program. The course will begin with an introduction to physical geology and continue with an overview of tectonics and structure and will include weathering and erosion. The second component will be an overview of geophysical exploration tools. Laboratory work will relate directly to in class lectures.

**GE1300 Soil Fundamentals**
This course is designed to expose students to the basic concepts of soil science, soil sampling and analysis, and soil classification.

**GE1420 Physical Environments**
This is an introductory course designed to provide students with basic knowledge in both terrestrial and aquatic environments.

**GE1500 Petroleum Geology I**
This is an introductory course in physical geology designed for students in the Petroleum program. It covers origin, distribution and deformation of igneous, metamorphic, and sedimentary rocks. Laboratory work includes the study of minerals and rocks with emphasis on identification and classification.

**GE1501 Petroleum Geology II**
This course is a continuation of Petroleum Geology I. It covers geologic processes occurring in and on the earth and structural geology. Laboratory work includes the study of topographic maps and profiles, introduction to construction of sub-surface geology maps and sections and field trips to places of geologic interest on the Avalon Peninsula.

**Prerequisite(s): GE1500**

**GE2400 Physical Geology**
This course emphasizes the external and internal processes of the earth. The external processes of geomorphology involve erosion and landscape development. The internal processes involve: earthquakes, the earth's interior, plate tectonics, and mountain building. The lab work involves detailed analysis of topographic maps and is supplemented with field trips. Local geology will be emphasized throughout the course.

**Prerequisite(s): GE1500**

**GE2500 Petroleum Geology III**
This course is concerned with the formation, movement, and accumulation of oil and gas. Geologic exploration for and world distribution of oil and gas will be covered.

**Prerequisite(s): CH2330, GE1501 Co-requisite(s): PM2110**

**GI1100 Historical Geography I - Pre-history**
This course begins with an overview of the geographic location and climatic conditions of the island of Newfoundland and Labrador, since the last glaciation. A study of the indigenous peoples of our province will be completed. The lifestyle, the environmental factors affecting settlements patterns and location of settlement, the food sources, and the religious beliefs of each culture will be discussed.

**GM1105 Aircraft Plumbing (S)**
This course will enable the learner to identify and manufacture the different types of pressure and vacuum lines and hoses used on the various aircraft systems.

**Prerequisite(s): GM1120**

**GM1120 General Maintenance Procedures (M, E, S)**
This M, E, and S course is to inform the learner of the responsibilities and safety requirements when working in an aircraft environment. This course will also enable the learner to select materials and instructions so they can successfully complete a maintenance task.

**GM1130 Aircraft Servicing (M, E)**
This M and E course will enable the learner to work safely and efficiently in an aviation maintenance environment. This is to enable learners to position aircraft, select materials and instructions that will provide for the safe completion of a maintenance task.

**Prerequisite(s): GM1120**

**GM1140 Standard Work Shop Practices (M, E, S)**
This M, E, and S course is designed for learners entering into the Aviation Programs. This course enables the learner to obtain the knowledge and skills required to select and use hand and power tools, precision measuring instruments, shop equipment and the knowledge to be able to identify different types of aircraft hardware.

**GM1320 Aircraft Weight and Balance (M, E)**
This M and E course is designed to provide a learner with an in-depth knowledge of Aircraft Weight and Balance. Learners will be required to differentiate between fixed wing and rotary wing weight and balance, as well as longitudinal and lateral centre of gravity. Learners will interpret manufacturers’ specifications and procedures for weighing aircraft and compute a weight and balance report.

**Prerequisite(s): GM1120, GM1130**

**GM1420 Non-Destructive Testing (M)**
This M course is designed to provide a learner with an in-depth knowledge of Nondestructive testing techniques. Materials and equipment will be discussed.

**GM1525 Sheet Metal Fabrication and Replacement (S)**
This S course is designed to provide the learner with the knowledge of aircraft structural fabrication and replacement. The learner will utilize the knowledge and skills learned in previous aircraft structural repair courses. They will use aircraft technical drawings, follow guidelines and specifications to fabricate and replace aircraft structural component. The learner will produce the certification as required by the Canadian Aviation Regulations for completed.

**Prerequisite(s): AF1240**

**GM1550 Maintenance Regulations (M, E, S)**
This M, E, S course will provide the learner with the regulatory guidelines to be followed while performing maintenance on aircraft or aeronautical products as a requirement of the Canadian Aviation Regulations (CARS).

**GM1570 Corrosion Control (M, E, S)**
This is an M, E and S course that will provide the learner with the knowledge to identify various types of corrosion, the causes of corrosion and the susceptible locations of corrosion on aircraft structures. This course is designed to provide the knowledge to inspect aircraft structures for corrosion, assessment of damage, removal of corrosion, treatment of corroded areas and protection methods used to prevent or retard further deterioration of aircraft structural components.

**GM1580 CORROSION CONTROL II (S)**
This S course will provide the learner with the skills to inspect aircraft structures for corrosion, assess damage, remove corrosion, treat corroded areas and apply protection methods used to prevent or retard further deterioration of aircraft structures.

**Prerequisite(s): GM1570**

**GM1600 Structural Damage Repair & Assembly**
This is an advanced course in aircraft sheet metal repair that will develop the learner’s knowledge and
GS1110 Cartographic Concepts
This course will engage students in the exploration of the cartographic communication process and the need for positional accuracy using various geospatial referencing techniques. By introducing concepts and processes that are central to cartography, the course will enable the student to build a broad cartographic foundation for subsequent studies. Additionally, the student will understand how positional data is collected, and will be able to accurately construct a flat map representing portions of the earth. Through a series of lectures, seminars, exercises, and reports, the student will consult and maintain geographic accuracy while encoding real world phenomena using specific cartographic communication concepts.

GS1210 GIS Database Principles
This course presents principles of database processing in GIS environment, lab exercises and project work provide opportunities for students to develop skills in implementing and managing databases. Students will use Microsoft Access to create database tables, queries, forms, reports, and macros to satisfy specific requirements. Structured Query Language will be used to build databases and manipulate data using industry standard language in preparation for future work in data processing and GIS analysis.

GS1320 Principles of GIS
This course will enable students to explore the principles and fundamental concepts and types of Geographic Information Systems (GIS) and apply them in simple projects. Students will be introduced to the five main technical components of a GIS, namely, input, storage, pre-processing, analysis and output using both the raster and vector spatial data models. Hands-on experience, using current software applications is provided through a series of laboratory exercises.

GS1410 Problem Solving and Programming
Geomatics software systems include programming capabilities to enable technical users to build specialized applications to process data and automate repetitive tasks. Using these facilities, a few well placed lines of code can save days of tedium or can accomplish tasks that would otherwise not be feasible. In this course students will prepare to utilize these capabilities by: (1) developing problem solving and algorithm design skills, (2) implementing solutions in a high level programming language, and (3) working with spatial data. This course also serves as a foundation to the other programming and technical courses covered later in the GIS specialist programs.

GS1510 Remote Sensing and Image Analysis
This course provides an introduction to the basic interpretation and measurement of physical, biological and cultural features on remotely sensed imagery. Basic photogrammetry concepts will be examined and practiced in scale determination, height, and measurement. Students will acquire an understanding of basic remote sensing techniques and their application in natural resource disciplines. In lab and field work students will gather control points, register the image to the ground, and compile data from industry standard software. Lab software: PCI Geomatica.

GS1610 Surveying and Mapping
This course emphasizes Geomatics principles as they apply to spatial databases. Building on the skill sets associated with measuring for maps and land type surveys, students will develop expertise in the use of equipment such as: total stations, GPS receivers, and data loggers to locate features and attach the attribute information. Through project work in the lab and field, students will gain practical experience in equipment use, maintenance and troubleshooting. Once collected, features will be placed in a GIS/Land Information System and appended to existing digital maps and plans. The resulting maps and GIS databases will be used to solve spatial queries related to land parcels.

GS1710 Web Programming
The course builds a Problem Solving and Programming in the previous semester to extend programming to the Internet and web-based applications. Various technologies for building dynamic web site in a client-server environment will be introduced, including client-side and server-side programming languages. Web programming and design will be explored through lectures and lab exercises. This course prepares students for the creation and customization of web GIS sites in the Web GIS Development course in semester 3.

GS2110 Customization of GIS Applications
As GIS software packages become more sophisticated, there is a greater need for GIS specialists who not only perform GIS analyses, but also are highly skilled in customizing GIS applications, thereby facilitating the use of GIS applications to end-users. Customization may be done within the application itself, or by developing stand-alone programs that integrate GIS capabilities. This course introduces students to the basics of designing graphic user interfaces in object-oriented and event-driven environments. Students will also learn how to develop customized GIS applications to meet specific user needs and how to link these applications to other programs.

Prerequisite(s): GS1410

GS2210 Database Design and Development
This course builds on GIS Database Principles to introduce advanced relational database topics that are increasingly important for GIS and mapping professionals. Through application of the basic principles of relational database design, students will learn how to design a model of the users’ view of their data and express it as an entity-relationship model. Core concepts of database development will also be explored, including normalizing tables, establishing appropriate relationships between data, establishing metadata, determining domains, and capturing business rules. The course includes topics in data processing with SQL and procedural extensions in industry-standard client-server environments. The course also provides a detailed exploration of GeoDatabase.

Prerequisite(s): GS1210

GS2310 Project Planning and Management
The skills developed in this course will help students select, design, build, and implement a complex GIS application in response to an industry defined problem, using a business project management model. The course will assist students in negotiating the complexities of project management unique to this sector, as well as issues such as client relations, time management and scheduling, costing and budgeting, data processing, negotiating intellectual property rights and copyrights and managing team work and interactions. Project design principles and cartographic standards, together with guest lectures, will provide a foundation for the iterative process of planning, establishing schedules, and writing a GIS project proposal. Project Planning and Management will act as an introduction to the major GIS project in the final semester, and develops a skill set critical to its success.

GS2410 Spatial Analysis and Applications
This course will provide the conceptual background to more advanced GIS analysis applications. The course is designed to provide an understanding of spatial analysis techniques available within a GIS environment, and within the context of a variety of application areas. In addition, this course will apply methods for determining appropriate use of GIS within organizations. Conceptual material presented in lectures will be placed in an applied context through laboratory exercises designed to strengthen practical understanding and awareness of GIS methodology.

Prerequisite(s): GS1310

GS2510 Spatial Statistics
Following a review of basic statistics, this course introduces the student to the fundamentals of statistical methods relevant to geographic data and spatial analysis. The course begins with a review of descriptive and inferential statistics and their application to geographic data and processes. Other course topics include: Spatial Distribution of Points, Trend Analysis, Measures of Spatial Dependence and Error Estimation of Geographic Data.

GS2710 Web GIS Development
This course introduces GIS students to the broad possibilities of the single greatest impetus for change in the GIS industry – the Internet. Building on Web Programming in the previous semester, Web GIS Development provides an overview, and develops a conceptual understanding of, existing Web-based applications for GIS and the innovations that will affect the shape of the industry in the future. Students will create web GIS sites using the built-in capabilities of ArcGIS Server, and will later customize these sites using scripts and programming. Planning and development stages for a GIS website will also be covered, with practical work in accessing, displaying, querying, and analyzing GIS data over the Internet.

Prerequisite(s): GS1710

GS2910 Advanced Remote Sensing
Airborne/space-borne digital mapping systems will be reviewed. In doing so, students will be able to use current imaging and GIS software to compile a 3-D map. Increasing utility of the data from space-borne sensors will be reviewed, and in parallel, students will perform advanced fully-automated (as well as semi-automated) data extraction.

Prerequisite(s): GS1510

GS3110 Advanced Topics in Geomatics
Advanced Topics in Geomatics is designed to ensure that students are exposed to emerging issues and trends in the field as well as the most current technologies. Course topics will be selected through the input of advisory committee members, departmental faculty and students as well as through assessment of the professional literature and publications. Activities will include guest lectures, demonstrations of new technologies, applications and software, workshops, student presentations, field trips and, where possible, attendance at an external conference or workshop. The course is an important transition for students as they move from program graduates to entry level practitioners, helping them to begin professional networking, develop a career path and explore avenues for future professional development and areas of specialization.

Prerequisite(s): GS2110
GS3210 Major GIS Project
This course provides the student with an opportunity to finalize the design, development and implementation of a GIS project initiated in the Project Planning and Management course. This team based project will address a variety of GIS issues and use mapping techniques to promote the research, development, testing, and analyzing of real world information in a real world environment. Students will be challenged to assign responsibilities, create and maintain satisfactory working relationships with the client, accept feedback, meet project deadlines, manage the production of deliverables to industry standard, and formally present their findings. The team consists of students, instructors, and industry sponsors.
Prerequisite(s): GS2310

GS3410 Spatial Database Applications
Evidence in the past two decades has shown that traditional GIS database design procedures are sound and do not need change drastically with the migration of GIS data management toward object based designs and DBMS applications. While object oriented and DBMS design tools are useful when used appropriately, they are not enough for GIS database design. Currently, the object paradigm is recognized as a better way of building and managing databases. At the same time, the relational data model has shown strengths in many aspects of database design, such as the simplicity of its data organization and conceptual model. To take advantage of the benefits of both models, database management system designers have come up with the Object-Relational model whereby relational database tables can be built using objects. This course will teach participants how to take advantage of this new database development model in the design and management of spatial databases. The course will be based on Oracle and ESRI Geodatabase Object-Relational models.
Prerequisite(s): GS1310

HE1101 Equipment Operation Safety
This course in heavy equipment operation fundamentals requires environment, equipment, operator, education, engineering and enforcement. It involves following safety regulations, assessing variable conditions (road, vehicle, driver, light weather and traffic), planning strategies, operating equipment, and preventing emergencies. It includes information on passing and being passed, power line hazards, and types of collisions (head on, behind and intersection).

HM1100 Introduction to Foodservice Operations
In this course students study the fundamentals of foodservice operations. Students are exposed to menu planning as the start of any foodservice operation. Students will also review the importance of kitchen design, identify the various types and principles of table service and receive introductory knowledge in beverage service.

HM1200 Quality Management in Food Service
This course is an introduction to quality management principles and supervision in the foodservice industry. Establishment of standards and application of quality assurance, risk management and waste utilization principles are practiced. Strategic planning, disaster plans and management information systems as they apply to health care and hospitality will be covered.

HM1240 Hospitality Foodservice Operations
This course focuses on foodservice operations in the hospitality industry. Students will work in groups to review restaurant development and operations, to develop a menu, and to gain knowledge of its impact on the total operation including kitchen design.

Appropriate layout, design and the physical appearance of the restaurant will be examined.
Prerequisite(s): HM1100

HM1800 Institutional Foodservice Operations
This course emphasizes foodservice production and delivery for institutions. Students will also critique and analyze institutional menus, identify menu patterns, and plan standard and therapeutic menus. The menu is examined in terms of its influence on procurement practices.
Prerequisite(s): HM1100

HM2150 Food and Beverage Management
This course introduces the student to the management functions necessary to successfully operate a food and/or beverage facility in the hospitality industry.

HM2210 Hospitality Marketing
This course is an introduction to the concepts and techniques of hospitality advertising and marketing. Students study the history of marketing and advertising in the hospitality industry, government regulations, segmentation of the industry, marketing and advertising methodologies, travel marketing, sales goals, packaging, pricing, successful promotions and public relations.

HM2160 Cost Controls
This is an introductory course in the concepts of cost controls. The course deals specifically with the food and beverage control skills and techniques, labour cost controls and staff scheduling as practiced in food service.
Prerequisite(s): MA1400

HM2260 Supervision
This course explores practical and effective management skills for the foodservice industry. Emphasis is placed on the technical and human relations skills considered essential for today’s managers.

HM2280 Supervision in the Hospitality Industry
This course explores practical and effective management skills for the hospitality workplace. Emphasis is placed on the technical and human relations skills considered essential for today’s managers.

HM2420 Hospitality Facilities Management
Provides hospitality students with information they need to know to manage the physical plant of a hospitality property and work effectively with the engineering and maintenance department.

HM2520 Events Management for the Hospitality Industry
This course offers a practical and hands-on approach to planning and executing meetings, special events and conferences for the hospitality industry. It covers event planning, selection of a venue, preparing and managing the budget, scheduling, coordinating food and beverage services, selecting decor, theatre and entertainment; media; and staffing.

HN1100 Industrial Relations
This is an introductory course in the theory and practice of industrial relations in Canada. The student will explore industrial relations models; the structure of the Canadian Labour movement; the process involved in organizing a union and establishing union recognition; the collective bargaining process and the administration of a collective agreement; the various dispute resolution methods and industrial dispute tactics; and the union impact on compensation, productivity, and management and strategic choice. Theoretical learning will be reinforced with case studies and research of current industrial relations topics.

HN1200 Human Resource Management
Human resource management is concerned with the effective use of employees to achieve organizational goals.

HN1230 Human Resource Management I
This is an introductory course in the fundamental principles and practices of strategic human resource management today. The student will explore the law and human resource management, human resource planning, job analysis and job design, recruitment, selection, socialization and orientation, training, development and career planning. Theoretical learning will be reinforced with case studies and current article reviews.

HN1240 Human Resource Management II
This is an introductory course in the fundamental principles and practices of strategic human resource management. The student will explore performance management, direct compensation, indirect compensation (employee benefits and services), communication and employee relations, workplace safety and occupational health, industrial relations framework, workforce diversity and international human resource management, and human resource metrics. Theoretical learning will be reinforced with case studies and current article reviews.
Prerequisite(s): HN1230

HN1400 Occupational Health & Safety
This is an introductory course in the fundamental principles and practices of occupational health and safety (OH&S). A solid understanding of OH&S issues, legislation and programs is essential to create an effective OH&S program. The student will explore development of OH&S; costs of accidents, injuries and workplace illnesses; legislation and regulation; hazards and agents; hazard recognition and assessment; workplace compensation; accident investigation; and OH&S program management. Students will have the opportunity to apply various OH&S practices and techniques using case studies and simulations and to obtain WHMIS certification.

HN2100 Collective Agreement Administration
This course will examine in depth the issues involved in the interpretation, application and administration of a collective agreement. The student will explore public service collective bargaining, regulating the collective agreement, collective agreement administration, collective agreement clauses and the legal issues in interpreting and administering collective agreements. Students will have the opportunity to apply and interpret various collective agreement administration techniques, practices, and clauses using case studies and application assignments.
Prerequisite(s): HN1100

HN2110 Dispute Resolution
This course will explore the various types of third-party assistance available to both management and union in resolving disputes. The student will explore union management cooperation; industrial conflict/disputes; conciliation/mediation; picketing/boycotts; grievances and grievance (rights) arbitration; and alternative dispute resolution. Students will have the opportunity to apply and research various dispute resolution techniques and practices.
Prerequisite(s): HN1100, LW1210

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205
HN2130 Recruitment and Selection ●
This course will examine in some depth the current process, issues and practices involved in the recruitment and selection function. The student will explore: the staffing function; legal compliance; information sources for staffing; reliability and validity of performance predictors; recruitment, selection, placement, evaluation; and emerging trends in staffing. Students will have the opportunity to apply various staffing techniques and procedures using case studies and application assignments.
Prerequisite(s): HN1240

HN2140 Attendance and Disability Management ●
This course will examine in some depth the current processes, issues and practices involved in attendance and disability management. The student will explore the various laws and regulations affecting the practice of attendance and disability management; attendance management systems/procedures; disability management programs; best practices in disability management; legal and ethical issues in disability management; disability management in a unionized environment; and attendance management and disability management policy/plan development. Students will have the opportunity to research various attendance management and disability management techniques and procedures.

HN2150 Training and Development ●
This course will examine in some depth the current processes, issues and practices involved in the training and development function. The student will explore: needs analysis; training design, methods and evaluation; development methods and evaluation; and emerging trends in the field. Students will have the opportunity to apply various training and development techniques and practices using case studies and application assignments.
Prerequisite(s): HN1240 and HN1400

HN2200 Strategic Compensation and Benefits ●
This course will explain in some depth the key issues, processes and techniques involved in planning, designing, and administering a compensation and benefits strategy. The student will explore: internal alignment; external competitiveness; performance management; administration/budgeting; role of government and pay discrimination; and employee benefits. Students will have the opportunity to apply various compensation practices and techniques with case studies and application assignments.
Prerequisite(s): HN1240

HN2210 Human Resource Planning ●
This course will examine in some depth the fundamental issues, principles and practices of strategic human resource planning. The student will explore: human resource strategies and plans; environmental influences/issues; staffing strategies; forecasting techniques; managing performance and employee expectations; and managing and measuring the human resource function. Theoretical learning will be reinforced with application assignments.
Prerequisite(s): HN1240

HN3110 Current Topics in Human Resource Management and Industrial Relations ●
This learner-led seminar-based course will examine issues, topics and trends in the area of human resource management and industrial relations that are of recent and current concern to human resource professionals today. Students will research, develop and present a paper/presentation on selected issues/trends from among the following areas explored in this course: the field/practice of human resource management; the field/practice of industrial relations; recruitment and selection; occupational health and safety; employment and labor law; collective agreement administration; attendance and disability management; compensation and benefits; human resource planning; and dispute resolution. In addition students will have the opportunity to research and critique a current journal article.
Prerequisite(s): HN1100, HN1400, HN2100, HN2130, HN2140, HN2200
Co-requisite(s): HN2110, HN2210

HR1120 Human Relations
This course is designed to create an awareness of the importance of effective interpersonal skills in an employment environment, and to provide an opportunity for the student to learn and practice these skills. The student will examine the basic elements of interpersonal communication and practise effective communication skills in personal and professional relationships. The course emphasizes interpersonal skill development through the process of experiential learning.

HR1200 Introduction to Human Services
This course introduces the human service field as a profession. The principles which underlie the delivery of human services will be examined, and the knowledge, skills and values relevant to human service work will be identified and analyzed. A systems theory approach will be used to explore the environment in which human services are delivered.

HR1210 Introduction to Human Services
This course introduces the student to the human service field. It will look at what help is, why it might be needed, and where it might be offered. The important attitudes, philosophies, and values that underlie the delivery of human services will be examined. It will explore the concepts of culture and oppression, and the importance of becoming culturally competent. The course will also explore the principles of forming and maintaining a helpful relationship. It will discuss how to support communities through advocacy and organizing. Finally, the course will review the importance of caring for the caregiver by stressing the importance of paying attention to you, self-care, and appropriately dealing with difficult situations. Students will be encouraged to explore personal suitability for human services.

HR1300 Communications and Human Relations
Students will develop communication skills associated with effective human relations. Knowledge and skills will be developed in effective listening, and oral and written communications.

HR2120 Public Relations for Hospitality Industry
This course concentrates on the skills necessary to develop public relations for business purposes. A combination of theories/concepts and practical illustrations are used to explain the application of public relations.

HR2130 Industrial Relations
This course is designed to provide the learner with an introduction to the complexities of human interaction with respect to the work place. The course material will contribute to a better understanding of subject matter studied in other courses. This basic course in industrial relations emphasises on the role of the individual within an organization. Topics include, but are not limited to; self-analysis, including attitudes, self-concept, communication style, motivations and organizational values; improving human relations, constructive self-disclosure, emotional control, positive reinforcement and first impressions; leadership and supervision, considering conflict resolution and management, prejudice, discrimination, and sexism. Learners will be required to attend and participate in weekly workshops, submit a structured, reflective journal.

HR2200 Human Relations
This course is a study of the basic principles of human relations, and the behaviour of the people in organizations as they strive to achieve both personal and organizational goals.

HR2400 Professional Development ●
This course is designed to prepare the students for the workplace. The focus is on acquiring the skills of a successful professional employee. The students will learn how to assess and refine their own skills and to match these skills with employment opportunities.

HS1130 Dining Room Operations
This course provides the student with a basic program in Dining Room Service. It stresses the practical application of food and beverage service skills. The student receives training of a practical nature in the college’s training dining room.

HS1150 Food Preparation I
This course is an introduction to the basic principles and techniques of food preparation as they relate to the food industry. The theory taught in the classroom is followed up by actual food preparation in a commercial kitchen. Students are required to complete certifications in First Aid, WHMIS, and NFSIP (National Food Safety Training Program) and have a working knowledge of ergonomics.

HS1151 Food Preparation II
This course is a continuation of Food Preparation I. The students will be able to understand, recognize and have knowledge of food preparation and production with reference to vegetables, salads and salad dressings, starches, sandwiches, meats and poultry, fish and seafood, dairy and beverages, baked goods, breakfast items and food plating and garnishing.
Prerequisite(s): HS1150

HS1340 Bar and Beverage Operations
This course introduces the student to the basic principles and techniques of bartending. Theory is combined with practical labs to ensure the student is given the opportunity to practise the skills learned. Responsible service of alcohol and guest contact techniques are stressed.

HS1540 Emerging Trends in Hospitality Tourism Industry
The aim of this course is to complement or supplement previous training, or to augment training in response to current trends or an unseen deficiency in student knowledge of specific topics. Topics are selected each time this course is offered. Campuses that are instructing the same program should try to coordinate the topic(s) offered in this course. The course may be delivered though lectures or self-directed research or a combination of methods. The course will contain practical projects and applications.

HS1730 Rooms Division System
This course introduces the student to the operations, procedures and responsibilities of rooms division systems within the accommodation sector. This course has been designed to include the National Occupational Standards for the Canadian Tourism Industry.
industry. Students will acquire the skills and knowledge that will enable them to effectively work as Housekeeping personnel and Front Office personnel.

**HS2150 Food Preparation III**

This course is designed to give practical experience in producing and serving quantity foods for institutional operations. Students will plan the cafeteria operation from start to finish. Quantity food preparation techniques and skills are utilized to ensure nutritional suitability of the meal and to maximize quality and minimize waste. Each student will be placed in a supervisor role in order to practice the skills of planning, organizing, directing, controlling and evaluating the production and service.

**Prerequisite(s):** HS1151

**HY2101 Art History III: Modern Art History**

This is a general survey of the history of Newfoundland and Labrador. It begins with a brief look at how geographical factors influence history, and then focuses on early native people and European settlers. The course then concentrates on major events and developments, including those related to the founding and emergence of major political and social movements and institutions.

**Prerequisite(s):** HY1101

**HY2101 Art History IV: Modernism/Post-Modernism**

This fourth semester art history course examines well-known movements associated with the mid-'70s and early '80s. The course is designed to introduce students to the basic art historical concepts. This course includes major art movements and artists, the cultural and social meanings and relevance of art, and helps clarify the theoretical basis for these major developments.

**Prerequisite(s):** HY2100

**JL1110 Reporting and News Writing I**

This course is an introduction to the theory and practices of professional journalism. Its main purpose is to give students a solid foundation in reporting and news writing skills. These skills include the basics of research, interviews and news article writing. This course stresses the importance of accuracy and meeting deadlines. Students learn how to conceive newsworthy story ideas and develop them. The role of journalism and the journalist in society is examined through lectures, group discussions and written assignments.

**Prerequisite(s):** HY1100

**JL1210 Reporting and News Writing II**

This course is designed to help the journalism students build upon the fundamentals learned in Reporting and News Writing I. It contains intermediate reporting, interviewing and writing skills. It includes training in general assignment reporting, which introduces the students to many of the kinds of stories they will encounter as entry-level reporters. As well, the course develops relevant critical thinking, math and editing skills.

**Prerequisite(s):** JL1110

**JL1350 Layout and Design**

Students will learn how to lay out and design newspaper pages using industry-standard software. They will also learn how to import photos and graphics into newspaper pages. As well, they will learn how to communicate effectively with print production staff and learn how to use file transfer protocol (FTP) to transmit and acquire files.

**Prerequisite(s):** JL1110

**JL1420 Journalism Ethics and the Law**

This course serves as an introduction for journalism students to the Canadian legal system. Emphasis is placed on areas of the law encountered in journalism.

**JL1430 Workplace Professionalism for Journalists**

This course is designed to provide students with the skills and knowledge necessary to prepare for the professional journalism workplace and to effectively work in a team environment. Students will prepare for their intersession field work training placements by preparing résumés, writing cover letters, compiling portfolios and preparing learning contracts. Under supervision of the instructor, students will arrange their own field work placements.

**JL1510 Broadcast I**

This course emphasizes basics of professional radio and television news formatting and presentation. Students will also learn how to use various broadcast tools: video cameras; digital audio recorders; digital audio editing equipment and software; digital video editing equipment and software, and radio sound boards. This course will lay the technical foundation students will need as broadcast journalists.

**JL1511 Broadcast II**

In this course, students learn principles and practices of broadcast journalism, including: writing for television and radio; producing video and radio news clips; producing radio news programs, producing TV programs, and speaking on radio and television. The students will apply the technical knowledge they acquired in Broadcast I to a journalism setting.

**JL1580 Online Journalism**

This course enables students to combine print, radio and video journalism techniques into one product. Once they have successfully completed this course, students will be able to write articles specifically for the Internet; use various online and mobile reporting tools; prepare video and audio clips for streaming; prepare graphics and pictures for the Internet, use social and mobile media for journalistic purposes and produce their own journalism website with the aid of user-friendly software.
also learn how to conduct themselves in the newsroom and in the journalism industry as a whole. The students work as part of a team in producing a provincial youth newspaper, a weekly youth news website, a weekly radio show and various video projects.

JL1831 Newsroom II (Post Diploma)
This course is an accelerated version of the JL2820 (Newsroom III) and JL2821 (Newsroom IV) courses in the journalism diploma program. The purpose of the course is to give students an opportunity to apply the journalistic principles and practices they are learning elsewhere in the journalism program. The students work as part of a team in producing a provincial youth news publication, a weekly youth news website, a weekly radio show and various video projects. 

JL1219 Reporting and News Writing I ●
Journalism students learn how to cover major journalistic beats such as politics, business, sports, entertainment, and lifestyles. The course also covers advanced principles of reporting and feature writing.

JL1220 Prerequisite(s): JL1120

JL2820 Newsroom III
In this course, students will apply their photojournalism, news writing, layout, broadcasting and Internet skills. Second-year students will edit each other’s stories as well as those of the first-year students. They will work as part of a team in producing a weekly newspaper for Newfoundland and Labrador youth, a provincial youth newspaper, a weekly radio show and various video projects.

JL2821 Prerequisite(s): JL1120

JL2821 Newsroom IV
Students will apply print, broadcast, photojournalism and online journalism techniques. They will produce a provincial youth news publication, a weekly online youth news website, a weekly radio show and various video projects as part of a team. Students will become more accustomed to daily deadlines.

JL2820 Prerequisite(s): JL1220; JL1151; JL1150

KB1150 Keyboarding I
This course develops keyboarding speed and accuracy. Keyboarding speed on straight copy material is developed to 30 net words per minute for five (5) minutes.

Note: Students must achieve a typing speed of 30 net words per minute in order to pass KB1150.

KB1150 Prerequisite(s): KB1150

KB1151 Keyboarding II
This course continues to develop keyboarding speed and accuracy. Keyboarding speed is developed to a minimum of 40 net words per minute for five (5) minutes.

Note: Students must achieve a typing speed of 40 net words per minute in order to pass KB1151

KB1151 Prerequisite(s): KB1150

LW1100 Business Law
This course is an introduction to the Canadian legal system including the federal and provincial judicial systems, civil law, tort law, and contract law including types of contracts, offer and acceptance, breach of contract, discharge of contract, and capacity to contract.

LW1130 Tourism/Hospitality Law
This course explores the legal responsibilities, obligations, and liabilities which may be encountered in the tourism industry. Students will gain valuable and practical insights into the nature of the relationships between innkeeper and guest, restaurateur and diner, and private host and guest. Pertinent legislative acts relevant to the hospitality industry on both Federal and Provincial levels will be examined. The focus of this course is preventive in nature as emphasis is placed on building the students' awareness of the legal issues in the tourism industry.

LW1200 Business Law ●
This course is an introduction to the legal system, including civil law, the Canadian and provincial judicial system; tort law, contract law, legislation affecting contracts, law of agency, and current issues.

LW1210 Labour and Employment Law ●
This course will examine the ever changing subordinate legislation, statute and common law in Canada that deals with union-management relations and interactions, as well as the relations and interactions between individual (non-unionized) employees and their employers. The course is designed to provide students with a current overview of the Canadian system of labour and employment law. The student will explore employment law; labour law; and statute/subordinate legislation for labour and employment law. Students will have the opportunity to apply and research various employment and labour law legislation and cases.

LW1210 Prerequisite(s): HN1100, HN1240

LW1230 Business Law ●
This course will examine the fundamental principles of the Canadian legal system. The student will explore the Canadian legal system, torts, contracts, business law, employment law and international business law. Students will have the opportunity to apply and research various business law cases.

LW1280 Information Management Law ●
This course introduces the student to the legal framework which affects information management. The student will learn about the structure of the federal and provincial legal system. Furthermore, the student will be introduced to the language of law and procedures to follow when interpreting legislation. The provincial and federal legislation that impacts information management in government, health and private industry will be discussed focusing on the impact of information management methodologies. Finally, the student will study industry best practices for legal compliance.

LW1300 Legal Liability and Risk Management
This course will discuss the various forms of business and the legal issues concerning adventure tourism operators and guides (owner liability/guide liability). The Canadian legal system will be discussed. Risk management techniques will be examined. Insurance coverage, training and certification issues, and legal releases will be discussed. Studies of Canadian and United States litigation cases involving outdoor recreation pursuits will be discussed. A practical component of this program will involve completing a risk management plan for an adventure tourism operation.

LW1500 Law & Ethics
This course comprises various aspects of law and ethics as they apply in an industrial/business setting. The intent is to develop an understanding of fundamental concepts and a frame of reference guiding the application of these principles.

LW1530 Law Enforcement Ethics
This course will address and introduce principles of professional and ethical conduct in the law enforcement community. Emphasis is placed on dress, deportment, and conduct requirements, to aid participants in coming to terms with the possible conflicts between training, the law, and personal feelings and to provide support for officers in answering to the public on issues of ethics and behaviour.

LW1600 Construction Law
This is an introductory course dealing with the application of contract and tort law as applied to the construction environment. Topics covered include both public and private construction and the specific laws and codes of ethics which govern this industry.

LW1740 Natural Resource Legislation
This module will introduce and familiarize students with the various provincial and federal natural resources acts, legislation, and regulations. Case studies and assignments/projects will include topics such as the Environmental Assessment Act.

LW2210 Natural Resources Policy and Law
This course is designed to address the principles and processes related to the establishment and implementation of policies and laws for the management and protection of natural resources. Topics critical to the understanding of Canadian law, including the Charter of Rights and Freedoms, the criminal code, resource policies, regulations and relevant acts will be addressed.

LW2211 Law Enforcement
This course requires the use of legal documentation and enforcement equipment. It involves the role of a police officer and the proper investigation, recording and reporting of natural resource infractions. It includes information patrolling, covert operations, use of decoys, powers of arrest, search and seizure, and interviewing techniques, as well as preparation for court proceedings and sentencing.

LW2210 Prerequisite(s): LW2210

LW2300 Officer Safety
The student will be able to defend against most attacks, control and arrest a suspect, search vehicles safely and use intermediate weapons such as the collapsible baton and mini-mag. Students will perform pressure point control techniques, take-downs, minimal and maximum force applications and the implica-
tions of using same.
Prerequisite(s): FH1250

LW2320 Officer Safety
This module will introduce the history of officer safety training, the care and control of an arrested person, techniques for searching vehicles safely, how to defend against most attacks and the use of intermediate weapons. Candidates will perform pressure point control techniques, take downs, minimal and maximum force applications and explore use implications.

LW2500 Criminal Law
This module will introduce the student to the various components and functions of the Canadian Criminal Justice System. Topics critical to the understanding of Criminal Law will include basic rights and freedoms guaranteed by the Charter of Rights, the Origin of Law, Issues in Policing, the Structure and Operation of Canadian Criminal Courts, Sentencing, and the Operation of the Correctional System.

LW2520 Patrol Techniques & Procedures
Students completing this module will become familiar with patrol procedures including the purpose and types of patrols, equipment verification, checking and communications. Enforcement Patrol Techniques will include the gathering of information through patrols, processing and analyzing information through the senses and powers of observation and following up with the recommended course of action. Actual field trips will involve simulating routine patrols, surveillance and special co-operative enforcement activities.

LW2540 Arrest, Search & Seizure
This module will deal with the authority, responsibilities and the legislation governing peace officers. Special emphasis will be placed on the powers of a peace officer regarding arrest, search and seizure. Prerequisite(s): Completion of Semester 1 courses

LW2560 Interviews and Interrogations
This module is designed to develop the basic skills and knowledge necessary to take statements and conduct effective interviews within the confines of the law. Candidates will examine the framework within which interviewing takes place, develop practical interviewing, interrogation and statement taking skills in a variety of situations while performing enforcement duties, through the extensive use of role-playing, case studies and report writing. LW2600 Courtroom Terminology and Proceedings
This module will focus on legal procedures and documentation: summons, subpoenas, summary offence tickets, statements, information(s), the young offenders act and the presentation of evidence. Candidates will be able to lay a charge, complete the required documentation and act as a credible witness in court. The module will involve case studies in relation to the natural resources, actually attending court to observe proceedings and in-class mock trials.

LW2620 Enforcement Operations
This module will examine the art of crime scene examination and the collection of exhibits with emphasis on the importance of preservation and continuity of exhibits. Often the apprehension of violators will involve more than routine patrols and the enforcement officer will have to pursue violators through other means. Students will be instructed on the use of more specialized forms of enforcement initiatives and innovations.

MA1010 Mathematics I for Aboriginal Students
This course has been developed for aboriginal students using culturally relevant readings, examples, and problems. It emphasizes a study of number theory, basic arithmetic, and problem solving skills. Fractions, decimals, and percents will be reviewed in detail, and basic concepts of geometry will be introduced. Students will become proficient in the use of Systems International (SI) measurements.

MA1011 Mathematics II for Aboriginal Students
Building upon the skills, and using culturally relevant materials akin to those mastered in Mathematics I for Aboriginal Students, this course seeks to emphasize algebraic and geometric concepts. The translation of linear algebraic expressions and inequalities, and the solving of equations using the multi-step method are introduced, along with the geometric notions of perimeter, area and volume. The imperial measurement system is examined and students learn conversions between the metric and imperial systems. Prerequisite(s): MA1010

MA1012 Mathematics III for Aboriginal Students
This course has been developed for aboriginal students using culturally relevant readings, examples, and problems. Emphasis will be placed upon an exploration of positive and negative exponents, polynomials, and the graphing of linear equations upon a coordinate plane. Primary trigonometric ratios will be discussed in relation to real-life situations, and students will analyze and create common types of graphs. Prerequisite(s): MA1011

MA1030 Mathematics I
This course in basic mathematics presents knowledge of general mathematical concepts to prepare learners for success in the trades. The course also provides knowledge of mathematics related to on-the-job skills and practices. It utilizes shop problems to help learners relate mathematics to job situations. Upon successful completion of this course, learners will be able to apply mathematical concepts to trade practices and view mathematics as a critical component of work place success. Topics include whole numbers, problem solving, fractions, decimals, ratio, proportion, percent, and measurement. Since the emphasis is on understanding mathematical concepts, it is recommended that Mathematics I be completed without the use of a calculator.

MA1031 Mathematics II
This course presents knowledge of general mathematical concepts to prepare learners for success in the trades. It uses shop problems to help learners relate mathematics to job situations. Upon successful completion of this course, learners will be able to apply mathematical concepts to trade practices and view mathematics as a critical component of workplace success. Topics include geometry, pre-algebra, and basic algebra. Since the emphasis is on learning basic mathematical concepts, it is recommended that Mathematics II be completed without the use of a calculator (with the exception of 6.0 Numerical Trigonometry). Prerequisite(s): MA1030

MA1040 Math Fundamentals I
Math Fundamentals I is a Comprehensive Arts and Science (CAS) Transition course. It is the first of two math courses designed to prepare students for entry into a number of technical programs at the college level as well as CAS Transfer: College-University. A calculator is not to be used in units 1 and 2. Word problems will be done throughout the course at the end of each unit.

MA1041 Math Fundamentals II
Math Fundamentals II is a Comprehensive Arts and Science (CAS) Transition course. It is the second of two mathematics courses designed to prepare students for entry into a number of technical programs at the college level as well as CAS Transfer: College-University. This is a course in pre-calculus mathematics designed to help alleviate specific weaknesses and to lay the foundation for success in other College courses. Prerequisite(s): MA1040; or a mark of at least 40 on the Mathematics Placement Test.

MA1060 Basic Mathematics
This course in Basic Math requires knowledge of general mathematical concepts and processes to enable trades persons to function in the institutional setting by developing numeracy skills required for technical courses. This math course should also provide a foundation for experiential learning through a knowledge of math relating to on-the-job skills and practices.

MA1070 Structural Repair Shop Mathematics
This is an introductory course providing practical exercises in mathematics. The course begins with a review of basic mathematics and leads to a solid foundation of practical and application for Aircraft Structural Repair.

MA1072 Mathematics for Aircraft Maintenance
This is a course designed to support the mathematical needs related to the field of Aircraft Maintenance Engineering. This course is to be used in conjunction with MA1070 to fulfill the math requirements for AME. Prerequisite(s): MA1070

MA1080 Mathematics for NDT
This course provides training to prepare the NDT’s in a basics math directly tied to the core discipline in NDT. The major topics will contain content that reflects more specific required topics for NDT. The focus of this course is to introduce a technical math to students to enable them to apply the concepts in each of the disciplines in NDT.

MA1100 Mathematics
This is a course in pre-calculus mathematics designed to help alleviate specific weaknesses in students’ mathematical skills and thereby increase their chances for success in other technical courses.

MA1101 Mathematics
This is a course designed to prepare students for the study of calculus as well as to familiarize them with the concepts of differentiation necessary for a better understanding of a variety of technology courses. Prerequisite(s): MA1700; or 70% or more in High School Advanced Mathematics; or High School Advanced Mathematics or Academic Mathematics plus successful completion of a diagnostic testing procedure.

MA1104 Algebra and Trigonometry
Transferable to MUN Math 1090. This pre-calculus course is designed to strengthen the students’ skills in basic algebra, review and develop a deeper understanding of the concept of a function and make students aware of the importance of trigonometry. The course also uses technology to enhance the student understanding. After completing this course students will have the essential prerequisite elements to complete an introductory calculus course. Prerequisite(s): High School Level III Academic
Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test.

MA1120 Finite Mathematics I
Transferable to MUN Mathematics 1050. This course is designed to satisfy part of the first year mathematics requirement for prospective teachers in primary and elementary education programs. This course is also suitable for students headed into a non-science area of study.
Prerequisite(s): High School Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test.

MA1121 Finite Mathematics II
Transferable to MUN Mathematics 1051. This course is designed to satisfy part of the first year mathematics requirement for prospective teachers in primary and elementary education. This course is also suitable for students headed into a non-science area of study.
Prerequisite(s): High School Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test.

MA1130 Calculus I
Transferable to MUN Mathematics 1000. This is an introduction to differential calculus including logarithmic, exponential, and trigonometric functions with applications. This course also includes a brief introduction to integration.
Prerequisite(s): High School Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test.

MA1131 Calculus II
Transferable to MUN Mathematics 1001. An introduction to integral calculus with applications.
Prerequisite(s): MA1130 or MUN Math 1000. or MA2100

MA1140 Applied Mathematics
To provide students with an understanding of the concepts of elementary differential and integral calculus in preparation for technology courses. Throughout the course, students will have the opportunity to develop their analytical reasoning and problem-solving skills.
Prerequisite(s): MA1100

MA1230 Mathematics for Mining Technicians
This is a course in fundamental mathematics and data management designed to improve general mathematical skills, and to introduce statistical-type calculations required for further study in Surface Mining and Mineral Processing courses.

MA1400 Mathematics of Finance I
This is an introductory course designed to provide a basic understanding of business mathematics. Its primary objective is to increase a student's knowledge and skills in the solution of practical financial and mathematical problems encountered in the business community. It also provides a support base for material in more advanced courses in the business field. The topics covered in this course include mathematics fundamentals, linear systems, simple interest, and mathematics of merchandizing.

MA1500 Mathematics for Computer Studies
A practical mathematical background is provided in this course as it applies to business data processing. A review of basic algebra and computer-related mathematical topics is covered.

MA1520 Applied Mathematics for Computer Systems and Networking
This course provides a practical mathematical background for Computer Systems and Networking. The course covers topics in number systems, set theory and statistics in the context of supporting computer systems. The examples used in this course have a direct application to network and operating system analysis.

MA1530 Statistics
This course is designed to introduce the student to the basic principles of statistics with the use of Microsoft Excel.

MA1670 Statistics
This course introduces students to the basic principles of probability and statistics, and the decisions that can be made using statistics. In this course the student will explore descriptive statistics, elementary probability, discrete and continuous probability distributions, sampling distributions, hypothesis testing, chi-square distribution, analysis of variance, linear regression and correlation, and multiple linear regression. The student will have the opportunity to apply and interpret the results of a variety of statistical techniques from both descriptive and inferential statistics; to apply the fundamental concepts in statistics including sampling, experimentation, variability, distribution, association, causation, estimation, confidence, hypothesis testing, and significance; to critically review and analyze statistical arguments found in the popular press and in scholarly journals; and to appreciate the relevance and importance of statistics.

MA1700 Mathematics
This is a course in pre-calculus mathematics designed to help alleviate specific weaknesses in students' mathematical skills and thereby increase their chances for success in other technical courses.

MA1900 Problem Solving for Information Technology
The course is intended to illustrate how to develop logic for computer programs. To aid in the development of the student’s use of problem solving techniques necessary for Information Technology, a practical and mathematical background is provided in this course as it applies to business data processing. A review of basic algebra and computer-related mathematical topics is covered.

MA2100 Mathematics
In this course students will extend their study of topics in differential calculus and will also be introduced to integral calculus. Topics covered will assist students to better understand concepts encountered in other courses.
Prerequisite(s): MA1101

MA2101 Mathematics
This is an advanced calculus course designed to meet specific requirements of the Electrical/Electronics Engineering Programs.
Prerequisite(s): MA2100

MA2130 Applied Mathematics
This is primarily an applied calculus course designed to meet the specific requirements of the following technology programs: Mechanical Engineering Technology (HVAC, Power and Manufacturing), Industrial Engineering Technology.
Prerequisite(s): MA2100

MA2150 Linear Algebra I
Transferable to MUN Mathematics 2050. Linear algebra is the branch of mathematics dealing with solutions of linear equations, and related ideas of vector space and linear transformations. This is a practical, non-calculus course where students learn how to solve systems of linear equations, perform matrix algebra, find eigenvalues, diagonalize matrices, and perform vector geometry.
Prerequisite(s): Math 1130 or ten credit hours in first-year mathematics courses (two first year math courses)

MA2400 Mathematics of Finance II
This is an advanced course designed to provide a more in-depth study of the mathematics of finance. In this course the student will explore compound interest, general annuity, amortization of debt calculations, and basic calculations for bonds and sinking funds, and business investment opportunities.
Prerequisite(s): MA1400

MA2710 Discrete Mathematics
This course introduces the foundations of discrete mathematics as they apply to computing science. Topics include propositional calculus, predicate calculus, proof techniques, induction, recursion, sets, relations, functions, graphs and trees.
Prerequisite(s): MA1101

MA2810 Applied Geomatics Mathematics
This course consists of an introduction to probability and statistics with emphasis on descriptive statistics, probability theory and two variable data sets. It also investigates error propagation and error analysis as it pertains to the surveying industry.
Prerequisite(s): MA2100

MA3130 Advanced Geomatics Mathematics
This course consists of elements of spherical trigonometry and an introduction to conditional adjustment as it pertains to the surveying industry.
Prerequisite(s): MA2100

MA3700 Production and Operations Management
This course is designed to provide the student with an understanding of the process involved in production management and operations management. Operations management involves design, planning, control and improvement of the processes that transform a firm's inputs into final products. In this course the student will study the building blocks of operations management. The student will study the importance of interaction and coordination of business areas to meet organizational goals. Various mathematical and computerized models are introduced and their application to the decision-making process is emphasized.
Prerequisite(s): MA2400, MA1670 and MC1241

MC1050 Introduction to Computers
This course is designed to give the student an introduction to computer systems. Particular emphasis is given to word processing, spreadsheet, e-mail and the Internet and security issues. Upon success completion of this course, students will have a basic understand of, computer systems and their operation, popular software packages and their applications, security issues of computers.

MC1060 Computer Essentials
This course is designed to give the learner an introduction to computer systems. Particular emphasis is given to word processing, spreadsheet, email, internet and D2L, the software used to complete apprenticeship block exams. Upon completion of this course, the learner will have a basic understanding of
This course is designed to give the student an introduction to computer systems. Particular emphasis is given to word processing, spreadsheet, e-mail, and the Internet and security issues. Upon successful completion of this course, students will have a basic understanding of computer systems and their operation; popular software packages and their applications; security issues of computers.

**MC1130 Computer Studies**
This course is an introduction to microcomputers, their operations, hardware, and popular software applications including the laboratory information system (Meditech). The student will develop the basic skills to use an operating system, a word processor, and a spreadsheet.

**MC1150 Productivity Tools**
This course is designed to give the student a working knowledge of a software suite. Particular emphasis is given to the word processing, spreadsheet, database or presentation components of the suite, e-mail and internet.

**MC1170 Introduction to Computers and Applications**
This course will introduce students to the basic operation of the Apple/Macintosh operating system. Students will learn basic document development and Internet skills. The course will provide students with the knowledge to work independently on basic creative tasks using digital tools.

**MC1220 Productivity Tools I**
This course is designed to teach students the fundamental concepts of the Windows operating environment, keyboarding by the touch method, basic word processing procedures, the use of e-mail and the Internet. Students will apply concepts through practical application.

**MC1240 Computer Applications I**
This course will introduce the students to the use of e-mail and the Internet, manipulating files in the Windows operating environment, basic word processing techniques, and basic presentation creation techniques. Students will apply concepts through practical application.

**MC1241 Computer Applications II**
This course is designed to expose the student to software packages that can be used to create spreadsheets and web sites.

**MC1570 Creative Technologies**
This course is designed to enable students to use computers to access software and hardware in order to enhance musical creativity and performance. A range of contemporary applications will be used and students will be required to produce music-based assignments using this technology. Main areas will include synthesizers, sequences and drum machines, music notation software, digital audio, MIDI technology, and current and future trends.

**MC1800 Software Applications I**
This course is designed to give the student a working knowledge of a window operating system, and office automation tools. Particular attention is given to the operating system, word processing, spreadsheet, and presentation.

**MC1805 Software Applications**
This course is designed to give the student a working knowledge of office automation tools. Students will be exposed to common spreadsheet, diagramming and project management tools. Furthermore, the course will provide an in-depth treatment of a microcomputer database package.

**MC1110 Media and Public Relations**
This is an applied media and public relations course for students intending to work in the human services field. It gives students a basic knowledge of the major forms of media and how they may be used in public relations. It will also help students acquire practical skills in using media to assist community organizations for fostering positive community relations. The course has a practical focus and it requires some work with a volunteer organization in the human services field. Students apply media and public relations techniques and methods from this course to specific situations in the community.

**MH1110 Mechanical Systems**
This course is designed to assist students in becoming fully familiar with the principles of design, operation and maintenance of small high pressure boilers such as those found in fish plants, heating plants and office buildings and H.V.A.C.

**MH1200 Mechanical Systems I**
This course provides the student with an introduction to Power Engineering and the certification and legislation of Power Engineering. Students examine how boilers are designed. Safety procedures regarding boilers are also studied and applied.

**MH1210 Mechanical Systems II**
In this course, the student is introduced to various heating systems including steam, hot water, hot air, infrared and electrical systems. The operation of air conditioning systems is also examined.

**MH2330 Power Plant Components**
This course is designed to develop knowledge about the design and construction of various types of boilers. The function of heat transfer, draft and flue systems is studied. Combustion is examined and techniques for analyzing combustion gas products are learned. Students will learn to perform routine boiler procedures.

**MH2801 HVAC Systems**
This course will introduce the student with the understanding and knowledge of various codes and standards related to HVAC. It will provide the student with the knowledge of industrial ventilation and applications of industrial ventilation for specific operations. It will provide the student with the knowledge and understanding of various components associated with the various systems in HVAC.

**MH1200 Prime Movers**
This is a course designed to develop the basic skills needed to operate and maintain a process plant system.

**MH4500 Plant Systems Design**
This course will introduce the student with the understanding and knowledge of various components related to HVAC. It will provide students with an understanding of the methods of recognition and evaluation of various aspects related to H.V.A.C.

**MH2820 Power Plant Systems**
This course provides the student with the background information on what treatment of water is necessary for boilers. It also covers all the necessary treatments of water for use in boilers as well as treatment of waste water from plants. The course also covers the various types of pumps, their operation and calculations required to determine the choice of the appropriate pump for an operation.

**MH3320 Building System Design**
This course will introduce the student with the understanding and application of various codes and standards related to HVAC. It will provide the student with the knowledge of industrial ventilation and applications of industrial ventilation for specific operations. It will provide the student with the knowledge and understanding of various components associated with the various systems in HVAC.
Students will collect, store and prepare samples for chemical analysis and will perform simple and automated chemical tests under the supervision of a registered medical laboratory technologist.

**Prerequisite(s):** ML1000, ML1010, ML1020, BL1260

**ML1040 Practical Hematology**

This course provides the theoretical and applied knowledge required to collect, store and prepare samples by routine hematology procedures; prepare and stain peripheral smears; and load calibrated and automated equipment under the supervision of a registered medical laboratory technologist.

**Prerequisite(s):** ML1000, ML1010, ML1020, BL1260

**ML1050 Practical Microbiology**

Students will process specimens including planting, streaking and incubating; prepare stool concentrates for parasitology investigation; make and stain slides for parasitology investigation and plant mycology specimens, under the supervision of a registered medical laboratory technologist. Students will also learn to prepare, sterilize, store and perform quality control checks on various types of microbiological media.

**Prerequisite(s):** ML1000, ML1010, ML1020, BL1260

**ML1060 Practical Histotechnology/Cytology**

Students will perform routine cytology and histotechnology techniques including paraffin processing, smear preparation of body fluids, and simple stains and cover slipping of slides under the supervision of a medical laboratory technologist.

**Prerequisite(s):** ML1000, ML1010, ML1020, BL1260

**ML1070 Specimen Collection**

Students will collect, store, and prepare blood samples for analysis and learn collection and handling methods for other types of body fluids and tissue samples.

**Prerequisite(s):** ML1000, ML1010, ML1020, BL1260

**ML1080 Clinical Practicum**

This course allows the student to gain practical experience in a clinical laboratory collection centre including the application of office skills, client communication and specimen collection. It also permits the student to gain practical experience in the clinical laboratory under the supervision of a registered medical laboratory technologist. Pre-analytical procedures performed include basic hematological techniques, macroscopic urinalysis, simple solution preparation, data entry and loading of automated analyzers, preparation and processing of tissue and body fluids, and preparation, inoculation, streaking and culturing of microbiological media.

**Prerequisite(s):** Successful completion of all semester 1 and 2 courses

**ML1120 Immunology**

This is an introductory course in immunology covering the following topics: immunity, the immune system, antigens and antigenic determinants, antibodies, the immune response, complement, transplantation immunology, tumor immunology, diseases of the immune system, and antigen-antibody interactions.

**Prerequisite(s):** Completion of all third semester courses.

**ML1200 Hematology**

This course will provide students with a fundamental knowledge of the erythrocytes and leukocytes, including: origin, characteristics, functions, routine laboratory procedures, normal and abnormal morphology, and abnormal conditions with emphasis on the anemias.

**Prerequisite(s):** Completion of all third semester courses

**ML1221 Hematology**

This course is a continuation of the study of leukocytes with emphasis on leukemias, myeloproliferative disorders and lymphomas. It also introduces the student to the theory of blood coagulation including the functions of platelets, blood vessels and plasma factors and the laboratory investigation of abnormal bleeding and thrombosis.

**Prerequisite(s):** ML1200

**ML1300 Introduction to Histological Techniques**

This course will introduce the student to the workings of a clinical Histology laboratory. Topics include: tissue fixation, processing, embedding and decalcification, laboratory instrumentation, preparation of microscopic slides of tissue using a micrometre and study of the microscopic appearance of various human tissues.

**Prerequisite(s):** Successful completion of all third semester courses.

**ML1320 Introduction to Biological Staining**

This course is provided to further instruct the student in the theoretical and practical aspects of histology, concentrating on the use of biological staining techniques. Topics include: principles of microscopy, principles of staining including immunohistochemistry, uses of various staining techniques and the identification of pigments and artifacts. Microscopic identification of tissue sections is practiced to aid in the evaluation of staining results.

**Prerequisite(s):** ML1300

**ML1510 Introduction to Transfusion Science**

This course is provided to further instruct the student in the theory of blood coagulation including the functions of platelets, blood vessels and plasma factors and the laboratory investigation of abnormal bleeding and thrombosis.

**Prerequisite(s):** ML1200

**ML1520 Introduction to Histology**

This course will provide students with a fundamental knowledge of the erythrocytes and leukocytes, including: origin, characteristics, functions, routine laboratory procedures, normal and abnormal morphology, and abnormal conditions with emphasis on the anemias.

**Prerequisite(s):** Completion of all third semester courses

**ML3210 Hematology**

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of all semester 8

**ML3310 Histology**

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of all semester 8

**ML3510 Transfusion Science**

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of all semester 8

**MM1300 Media Acquisition, Digitizing, and Editing**

Students will collect, store and prepare samples for analysis and learn collection and handling methods for other types of body fluids and tissue samples.

**Prerequisite(s):** ML1000, ML1010, ML1020, BL1260

**ML221 Hematology**

This course is a continuation of the study of leukocytes with emphasis on leukemias, myeloproliferative disorders and lymphomas. It also introduces the student to the theory of blood coagulation including the functions of platelets, blood vessels and plasma factors and the laboratory investigation of abnormal bleeding and thrombosis.

**Prerequisite(s):** ML1200

**ML221 Hematology**

This course is provided to further instruct the student in the theoretical and practical aspects of histology, concentrating on the use of biological staining techniques. Topics include: tissue fixation, processing, embedding and decalcification, laboratory instrumentation, preparation of microscopic slides of tissue using a micrometre and study of the microscopic appearance of various human tissues.

**Prerequisite(s):** Successful completion of all third semester courses.

**ML2300 Introduction to Histological Techniques**

This course will introduce the student to the workings of a clinical Histology laboratory. Topics include: tissue fixation, processing, embedding and decalcification, laboratory instrumentation, preparation of microscopic slides of tissue using a micrometre and study of the microscopic appearance of various human tissues.

**Prerequisite(s):** ML1200

**ML2310 Histology**

This course is a continuation of the simulated clinical experience of ML2510. More in depth investigations of prenatal and pre-transfusion testing are performed, along with post natal, post transfusion, and cord blood testing. Following completion of this course, students will possess the knowledge, skills and attitudes to enter the hospital clinical phase of the program.

**Prerequisite(s):** Successful completion of semester 7

**ML2511 Histology**

This course is a continuation of the simulated clinical experience of ML2510. More in depth investigations of prenatal and pre-transfusion testing are performed, along with post natal, post transfusion, and cord blood testing. Following completion of this course, students will possess the knowledge, skills and attitudes to enter the hospital clinical phase of the program.

**Prerequisite(s):** Successful completion of all semester 8

**ML2510 Transfusion Science**

This course is a continuation of the simulated clinical experience of ML2510. More in depth investigations of prenatal and pre-transfusion testing are performed, along with post natal, post transfusion, and cord blood testing. Following completion of this course, students will possess the knowledge, skills and attitudes to enter the hospital clinical phase of the program.

**Prerequisite(s):** Successful completion of all semester 8

**ML3210 Hematology**

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of all semester 8

**ML3310 Histology**

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of all semester 8

**ML3510 Transfusion Science**

This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of all semester 8
This course will give the student practical exposure to the various equipment used in the acquisition of media for a multimedia production. Topics to be covered include sound, video, still photographs, text and graphics acquisition and editing.

MM1400 2D Digital Graphics
Students will become familiar with "Photoshop" image editing tools and will be introduced to basic color theory and digital painting techniques.

MM1500 Introduction to 3D Animation
Students will learn the fundamentals of 3D Animation. Students will gain a general knowledge of the history and potential applications of the medium, exploring the basics of workflow, organizational structure and specific tool use.

MM1600 Narrative & Production Design
In Narrative and Production Design students will be introduced to the processes required to realize and present a story in a visual format.

Co-requisite(s): VA1130

MM1810 Story Telling and Animatic Design
Story Telling and Animatic Design is an introduction to the process of developing a project scenario and the skills required to realize and present a story in a visual format.

Co-requisite(s): VA1100

MM1950 Workplace Professionalism
Students will gain the skills and knowledge necessary to effectively work in a team environment.

MM2300 Digital Audio Techniques
This course will provide students with an in-depth look at digital audio techniques. Topics to be covered include MIDI audio files, digital audio files, audio file formats, Red Book Standards and audio recording.

MM2310 Digital Video Techniques
Students will gain an in-depth knowledge of digital video techniques. Topics to be covered include how video works, broadcast video standards, integrating computer and television, shooting and editing video, recording formats, video tips, and video compression.

Co-requisite(s): MM2320

MM2320 Digital Audio Techniques
Students will gain a working knowledge of sound capture, audio editing basics and output. Students will also explore audio manipulation and editing techniques for dialog, music and sound effects.

Co-requisite(s): MM2310

MM2330 Digital Audio Soundtrack Design
This course is designed to provide students with the understanding and skills set related to the world of digital audio applications and its relationship to musical instruments and special effects. The goal of this course is to provide students with an understanding of the process of video game soundtrack design.

MM2500 Computer Graphics I (2D)
This course provides students with an introduction to two-dimensional graphics. Experience in the generation of 2D graphics will be explored through the use of several commercial 2D drawing programs. Topics to be covered include 2D primitives, transformations, fonts, color balancing and palette matching, bitmaps and scanned image editing.

MM2560 2D Digital Painting
Using standard image processing programs, students will be introduced to the artistic approach and technical aspects of custom texture generation, digital painting and application techniques for 3D.

Co-requisite(s): MM2670

MM2600 Computer Animation I (2D)
Computer Animation I introduces students to the concepts and methodologies of two-dimensional computer animation. Concepts such as sprite animation, frame animation, and incorporating 2D animation into a multimedia presentation will be discussed.

Co-requisite(s): MM2500

MM2620 2D Computer Animation
Students will continue with the projection of content covered in previous animation drawing courses into the digital production environment. Emphasis will be on learning 2D animation software tools. Through hands-on activities and assignments students will produce a series of short animation projects using drawn animation skills and digital animation techniques.

Co-requisite(s): VA1161; MM1400

MM2670 3D Character Modeling
Students will expand upon the fundamentals of digital modeling presented in Introduction to 3D Animation and will learn the concepts and practical applications of model optimization, animation rigging and weighting.

Co-requisite(s): MM1500

MM2680 3D Character Animation
Students will learn to expand upon the fundamentals of digital character animation previously covered in Introduction to 3D Animation. Practical exercises in a variety of animation scenarios, and essential editing and control features will be explored.

Co-requisite(s): MM2560

MM2700 Multimedia Lab I
Students will work on multimedia applications with formal lab assistance and supervision. In this course students will apply principles and practices covered in the program to practical applications.

MM2710 Multimedia Lab II
This course will provide students with multimedia applications with formal lab assistance and supervision. In this course, students will apply principles and practices covered in the program to practical applications.

MM2750 Special Topics
The Digital Animation field is characterized by frequent changes in software and hardware applications. The pace of progress is accelerating and new applications offer exciting potential for students in this field. This course was designed to enable students to select a contemporary leading edge software application and to refine their animation skills within the context of that application.

Co-requisite(s): MM2601; MM2501

MM2760 Animation Design Project
Students will be exposed to a simulation of a professional 3D production and design environment. Through research and collaborative production assignments the students will be expected to produce a fully developed animation project.

Co-requisite(s): MM1600; MM1500; MM2670; MM2560

MM2830 3D Post-Production & VFX
Students will explore the concepts and techniques used to digitally create realistic simulations of various environmental conditions and natural phenomenon. This will be achieved by using an industry standard animation package 3D Post-Production and Visual FX.

Co-requisite(s): MM2660

MM2850 Digital Compositing
In Digital Compositing students will learn the concepts, language and fundamental skill sets required for advanced digital image processing and assembling visual effects for film and video.

MM2900 Portfolio Development
Portfolio Development will establish the skills of objective, critical self assessment, required to select, critique and present a body of work that best represents core strengths with a view to identifying and achieving career objectives.

MM4150 Special Events Management
This course is designed to give students an understanding of the purposes of holding special events as well as the details involved in planning, implementing and following up of special event activities. Topics covered will include event selection, planning, organizing, marketing, budgeting, as well as overall management. Terminology will be defined and the economic impact of events will be discussed. Examples of actual "special events" will be studied to ensure students develop a realistic appreciation of this subject.

MM4800 Integrated Resource Management
This course is designed to provide a working knowledge of sustainable forest management principles, procedures and concepts. Technical, esthetic, environmental, hydrological, wildlife, and financial considerations of management practices are reviewed. Emphasis is placed on owner’s objectives while employing a sound, practical, forest technical approach to resource management. Students are expected to apply knowledge from all forestry courses throughout the program to construct a strategic sustainable forest ecosystem management plan for an assigned forest.

Co-requisite(s): FR1331, LW2210

MM4810 Integrated Resource Management
This course investigates the comprehensive management of our natural resources, which integrates the information of forest, fish, wildlife, recreation and other forest values. It includes information on the problems and solutions to integrated resource management, the use of consensus, conflict resolution styles and the role of public involvement.

MM2600 Strategic Management
This advanced course will enable students to be exposed to the inter-relationship of the functional areas of business. The focus will be on strategy development for business management, enabling students to apply organizational, financial, human resource, and marketing decisions to business applications.

Co-requisite(s): Successful completion of all Second Year Business Administration courses

MM3100 Business Ethics
This course will examine business ethical principles/concepts as well as the many ethical issues/dilemmas facing organizations today. The course will also explore the various government regulations and laws impacting and restricting business operations. The following topics will be explored: business ethics fundamentals; stakeholders and corporate social responsibility/governance; ethical issues in the workplace;
business ethics and the law; ethical decision making; ethics program and audits; and globalization and emerging trends. Students will have the opportunity to research, analyze, and critique various organizational practices and policies, particularly codes of conduct and codes of ethics. **Prerequisite(s):** AC2260, HN1240, MR2100, and PS2340

**MN2200 Performance Management**

This course will examine the importance of an effective performance management system in helping organizations define and achieve long-term and short-term goals vital to its overall success. It will reinforce the concept that performance management is an ongoing process of planning, facilitating, assessing and improving individual and organizational performance. The student will explore the value of performance management and its context; performance management process and strategic planning; setting performance standards; effective performance appraisal systems; performance management and employee development plans; performance coaching; and team performance. Students will have the opportunity to apply various performance management practices and techniques using case studies and application assignments. **Prerequisite(s):** HN1240 and PS2340

**MP1700 Control Engineering**

Use Laplace Transforms in the design and optimization of industrial control systems. The practical lab component will support the student’s understanding and application of the theory. **Prerequisite(s):** MA2100

**MP2140 Network Analysis**

This is a study of motor controls starting from motor control diagrams. Power electronic device theory is covered as background for drive electronics. A.C and D.C. drives are studied as well as installation, commissioning and troubleshooting. **Prerequisite(s):** AE2260, MP3110

**MP3170 Industrial Motor Controls**

This is a study of power systems including single line power schematics, motor controls, relay logic, PLC control and electronic variable speed motor drives. AC and DC drives, with applications in the instrumentation field. **Prerequisite(s):** MP2170, ET2100 **Co-requisite(s):** CE2810

**MP3215 Power Systems: Analysis**

This is an introductory course which exposes the student to fundamental design aspects of utility bulk power transmission systems. The student is first introduced to the overall layout and function of each component of typical utility systems. Types and characteristics of overhead line conductors and related hardware are also covered. Sub-transmission and distribution system calculations are introduced, followed by exact and approximate system models used in analysis of medium and long transmission lines. The student is also introduced to basic structural design aspects of high voltage transmission lines. Other major electrical design aspects of high voltage transmission lines are introduced. The course concludes with an overview of the design and construction of high voltage cables for both underground and submarine applications. **Prerequisite(s):** MP2920, MP2350

**MP3250 Emergency Standby Systems and Alternative Energy Sources**

This course is designed to study emergency standby systems and alternative energy sources. Emergency standby systems will include diesel generator sets, gas turbine driven generators and uninterruptible power supplies. Alternative energy sources covered include gas engines, turbines, waste heat, the sun, the wind, thermoelectric generators, fuel cells and heat pumps. **Prerequisite(s):** MP2300, MP2920

**MR1100 Marketing I**

This is an introductory course in the fundamental principles and practices of marketing. The student will explore strategic planning and marketing management, the internet in marketing, marketing research information, consumer markets and behavior, business markets and behavior, market segmentation and targeting, and international marketing. Students will have the opportunity to apply case studies and research various marketing concepts, techniques, and processes. **Prerequisite(s):** MP2920

**MP2141 Applied Electrical/Electronics Mathematics**

Techniques of Differential Equations - First order and second order: Integral Combinations; Growth and Decay Problems. The analysis and solution of source free RL and RC circuits; driven RL and RC circuits using differential integral calculus; sinusoidal analysis; the concept of phasors, and steady state response. The student will learn mathematical techniques and apply these to concepts to analyze and solve advanced electrical circuits. **Prerequisite(s):** MP2140, MA2100

**MP2170 AC Circuits and Machines**

This course is designed for Instrumentation and Controls learners. It is designed to strengthen the learner’s ability to analyze single- and three-phase AC circuits as well as the learner’s understanding of AC machines. The course also introduces the learner to motor control diagrams. **Prerequisite(s):** ET2100, MA1101

**MP2230 Power System Harmonics**

This is an introductory course in power system harmonics covering sources, problems, Fourier analysis and solutions. The laboratory component will further develop and strengthen the understanding and skills related to harmonic and Fourier analysis. **Prerequisite(s):** MA2100

**MP2300 AC Circuits**

This course is designed to be a continuation of the electrotechnology courses. It is designed to strengthen the student’s ability to analyze single and three phase AC circuits as well as reinforce the student’s understanding of magnetic circuits. The laboratory work is included as an application of the theoretical concepts and is intended to enhance skills in the use of AC measuring instruments. **Prerequisite(s):** ET2100, MA1101

**MP2350 Transformers**

This course is designed to be a continuation of the electrotechnology courses. It is designed to expand the student’s knowledge of transformers and the associated applications, standards and loading guides. Additionally it will enhance the student’s ability to analyze single- and three-phase AC circuits as well as provide an application for advanced mathematical analysis techniques. **Prerequisite(s):** MA2100, MP2300

**MP2400 Network Analysis**

This is applied mathematics course designed to provide the student with a knowledge of the advanced mathematical methods used in electrical/electronic circuit analysis and design. **Prerequisite(s):** MA2101, AE2301

**MP2700 Electrical Power Sources**

Hands-on approach to welding power sources and equipment. Laboratory work deals on checking installation, maintenance, and fundamental troubleshooting techniques on power sources and equipment. **Prerequisite(s):** ET1101

**MP2910 DC Machines**

This course is an introductory course in electrical machine theory. It covers the basics of DC machine theory and provides the necessary background for subsequent courses in electrical machines. It will give the student an appreciation of rotating machinery and through labs, an idea of the type and operating characteristics of the various DC machines. **Prerequisite(s):** ET2100

**MP2920 AC Machines**

This course follows DC Machines MP2910 and covers topics in AC Machines MP2300. AC generators are studied as well as three-phase and single-phase motors. The theory learned in this course will be applied in future courses in Power Systems and Motor Controls. **Prerequisite(s):** MP2910, MP2300

**MP3110 Motor Control Systems**

This is an advanced level course designed for Electrical Engineering Technology students. It provides the student with a solid background in designing, installing, and troubleshooting various motor control systems. Upon successful completion, the student should be able to interpret typical control drawings, design automated control solutions for typical industrial applications, install and troubleshoot various control strategies, as well as select and configure protection methods for motor circuits. **Prerequisite(s):** MP2920, MP2350, DP2540

**MP3130 Industrial Electronics & Power Systems**

This course is a study of motor controls starting from relay logic to electronic variable speed motor drives. Power electronic device theory is covered as background for drive electronics. A.C and D.C. drives, with applications in the instrumentation field. **Prerequisite(s):** ET2100, MP2100

**MP3140 Applied Electrical/Electronics Mathematics**

Topics include waveform analysis and synthesis, time domain analysis. Solution of differential equations using Laplace transforms. Application of Laplace transforms to solve electric circuit and derivation of Transfer Functions. Fourier expansion of periodic function; even and odd. Fourier analysis of waveforms and their application to electrical signals. Impulse Response, Convolution and Transfer Function. **Prerequisite(s):** MP2141

**MP3150 Power Devices & Motor Drives**

This course is a study of electronic variable speed motor drives. Power electronic device theory is covered as background for drive electronics. A.C and D.C. drives are studied as well as installation, commissioning and troubleshooting. **Prerequisite(s):** AE2260, MP3110

This course is designed to be a continuation of the electrotechnology courses. It is designed to expand the student’s knowledge of transformers and the associated applications, standards and loading guides. Additionally it will enhance the student’s ability to analyze single- and three-phase AC circuits as well as provide an application for advanced mathematical analysis techniques. **Prerequisite(s):** MA2101, AE2301

**MP3215 Power Systems: Analysis**

This is an introductory course which exposes the student to fundamental design aspects of utility bulk power transmission systems. The student is first introduced to the overall layout and function of each component of typical utility systems. Types and characteristics of overhead line conductors and related hardware are also covered. Sub-transmission and distribution system calculations are introduced, followed by exact and approximate system models used in analysis of medium and long transmission lines. The student is also introduced to basic structural design aspects of high voltage transmission lines. Other major electrical design aspects of high voltage transmission lines are introduced. The course concludes with an overview of the design and construction of high voltage cables for both underground and submarine applications. **Prerequisite(s):** MP2920, MP2350

**MR1100 Marketing I**

This is an introductory course in the fundamental principles and practices of marketing. The student will explore strategic planning and marketing management, the internet in marketing, marketing research information, consumer markets and behavior, business markets and behavior, market segmentation and targeting, and international marketing. Students will have the opportunity to apply case studies and research various marketing concepts, techniques, and processes. **Prerequisite(s):** MP2920

**MR1220 Customer Service**

This course focuses on the role of providing quality customer service. It is important to have a positive attitude and the necessary skill to effectively listen and interpret customer concerns about a product, resolve customer problems, and determine customer wants and needs. Students will be able to use the...
skills and knowledge gained in this course to effectively provide a consistently high level of service to the customer. Upon successful completion of this course, the student will be able to define customer service; explain why service is important; describe the relationship between “service” and “sales”; demonstrate an understanding of the importance of a positive attitude; demonstrate methods of resolving customer complaints.

**MR1230 Customer Service in the Foodservice Industry**
This course focuses on the role of quality customer service in the hospitality industry. It stresses the importance of a positive attitude; skills for effective listening and interpreting; skills for problem solving; and skills for determining customer wants, needs and concerns. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistent high level of service to customers in the foodservice industry.

**MR1270 Quality Customer Service in the Hospitality Industry**
This course focuses on the role of quality customer service in the hospitality industry. It stresses the importance of a positive attitude; skills for effective listening and interpreting; skills for problem solving; and skills for determining customer wants, needs and concerns. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistent high level of service to customers in the hospitality industry.

**MR1280 Customer Service**
This course focuses on the role of the employee in providing quality customer service. Students will develop the necessary skills and abilities to effectively listen and interpret customers’ concerns about a product, resolve customers’ problems, and determine customers’ wants and needs. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistently high level of service to the customer.

**MR1340 Marketing for Graphic Design**
Students will gain an understanding of the relationship between marketing and graphic design. Students will be introduced to the process of applying marketing principles when translating clients’ needs to specific target audiences.
**Prerequisite(s):** VA1230

**MR1500 Consumer Behaviour**
This course introduces the student to the concepts, theories and techniques of consumer behaviour. The student will explore the fundamentals of consumer behavior in order to gain an understanding of the motivation behind purchase decisions. By understanding the consumer’s behavior, students are able to make more market focused strategic decisions. Students will have the opportunity to apply their knowledge through the use of case analysis and assignments.
**Prerequisite(s):** MR2100

**MR1600 Professional Selling**
This is an introductory course in the fundamental principles and practices of professional selling. The course is designed to teach the student about competencies in prospecting, identifying client needs, and dealing with objectives while building client relationships. The student will take part in videotaped selling exercises to review and master their selling techniques. Students will have the opportunity to apply various techniques and practices through case analysis and the use of a sales simulation.
**Prerequisite(s):** CM1241, CM2200, MR2100

**MR2100 Marketing II**
This is an introductory course in the fundamental principles and practices of marketing. The student will explore product development and lifecycle, price distribution and supply chain management, retailing and wholesaling, promotion, advertising, and personal selling. Students will have the opportunity to apply various marketing techniques and practices using case studies and application assignments.
**Prerequisite(s):** MR1100

**MR2110 Marketing Methods & Promotional Media**
This course introduces the concepts and techniques of marketing. Students will learn the principles of modern marketing management and the resources required to successfully promote and market a product. A major aspect of the course is the development of a marketing plan related to the student’s program of studies.

**MR2200 Retailing**
This course is designed as an introduction to the concepts, theories, and techniques of retailing. The student will explore the concepts of buyer behavior, strategic retail management, retail design, presentation, and pricing. Students will have the opportunity to apply various retail techniques and practices using case studies and application assignments, and will develop communication skills through class discussions and group activities.
**Prerequisite(s):** MR2100

**MR2300 Business Research**
This course introduces students to the field of business research through the examination of the various techniques, principles, skills and activities required to create and present an effective survey project. It will familiarize students with the ways that marketing information can be obtained and/or produced and how it can be used to provide insight into markets, customers, products, and business strategies for business decision making purposes. Students will have the opportunity to apply various research techniques and practices using case studies and application assignments culminating in the preparation and presentation of a research report.
**Prerequisite(s):** MR2100
**Co-requisite(s):** MA1670

**MR2350 E-Business**
This course is designed to introduce the student to the managerial and technical aspects of electronic business and commerce. Students will gain knowledge of the competitive electronic business field and will be equipped to help businesses assess possible opportunities through this rapidly evolving technology. They will be exposed to the concepts of customer relationship management, marketing communications, supply chain management, web analytics, and taxation and ethical issues related to E-Business. Students will also have the opportunity to apply various E-Business techniques and practices using case studies and application based assignments, including web page development.
**Prerequisite(s):** MR2100 and MC1241

**MR2400 Marketing Communications**
This course will examine in some depth the current processes, issues, and practices involved in marketing communications. The student will explore communications as they relate to print, television, radio and other media, and will have the opportunity to apply their creativity in developing tools in these media for local uses wherever possible. The student will also examine how marketing communications affects the purchase and post-purchase behavior of the consumer. Students will have the opportunity to apply various marketing communication techniques and practices using case studies, application assignments and a major project.
**Prerequisite(s):** MR2100 and CM1241

**MR2450 Services Marketing**
This course is designed to enable students to apply the concepts and strategies of marketing relevant to the services sector. The student will explore in some depth various aspects of services marketing, including service productivity, service marketing distribution, service pricing concepts, positioning in service marketing, and service personnel management. Students will have the opportunity to apply their knowledge of these marketing concepts and strategies using a case project, application assignments and presentations.
**Prerequisite(s):** MR2100

**MR2600 Advanced Professional Selling**
This course will examine the impact of the key elements of the sales call and explore the practical realities of the professional sales career. The student will have a greater appreciation of the demands of a sales career and understand the concept of sales in the global market environment.
**Prerequisite(s):** MR1600

**MR2620 Sales Management**
This advanced course will provide the student with the opportunity to explore the practical components of the professional sales manager. The students will deepen their knowledge in the areas of sales management, planning, forecasting, and account relationships, as well as sales force organization, operations, staffing and training. Students will have the opportunity to demonstrate the application of concepts through field work assignments, case analysis, research and presentations.
**Prerequisite(s):** MR1600

**MR2700 International Marketing**
This course is designed to enable students to apply the concepts of marketing in an international context. The student will research and evaluate foreign markets and apply marketing concepts relevant to strategy development in foreign markets identified by exporting and trans-national organizations. The student will have the opportunity to acquire knowledge of international environmental influences, preparation for international markets, and the international marketing mix and apply various international marketing techniques and practices using case studies and application assignments.
**Prerequisite(s):** MR2100

**MR2800 Business-to-Business Marketing**
This course will enable students to apply the concepts of marketing in a business customer context, to research and evaluate business markets, and to apply marketing concepts relevant to strategy development in manufacturing, trade, institutional, and not-for-profit organizations. The student will use analysis of business buyer behavior, segmentation and targeting, business marketing strategy, marketing communications, and personal selling techniques to analyze case studies and complete application assignments.
**Prerequisite(s):** MR2100

**MR3100 Current Topics in Marketing**
This student-led seminar-based course will examine issues, topics and trends in the area of marketing.
that are of recent and current concern to marketing professionals today. Students will research, develop and present a seminar/paper on selected issues/topics/trends from among the following areas explored in this course: the field/practice of consumer behavior; professional selling; sales management; retailing; E-Business; marketing communications; services marketing; business to business marketing; and international marketing. In addition students will have the opportunity to research and critique a current journal article.

Prerequisite(s): MR1500, MR2300, MR2200, MR2350, MR2400, MR2450, MR2800
Co-requisite(s): MR2620, MR2700

MT1100 Introduction to Mining

This is a general introduction to mineral deposits, types of ore, mining machinery, units of operations in mining, and mine engineering analysis techniques used in these operations, from discovery, through development and to extraction underground and on surface.

MT1200 Equipment Reliability Concepts

The purpose of the course Equipment Reliability Concepts is to provide an in-depth understanding of the importance of equipment reliability to the efficiency of mining operations. Operators, maintenance and service providers all need to realize that they each play a necessary role and can make a significant contribution to the wellness of equipment and production processes. Reliable equipment enables mining operations to minimize spare parts inventories, plan and schedule services and major repairs, optimize resource usage, establish safe working procedures and deliver products dependably to customers.

MT2100 Surface Mining

The course is designed to train the learner to function efficiently in surface mining operations. The subject matter consists of: Evaluation of Surface Mine Prospects, Ore Reserve Calculations, Economic Evaluation, De-watering and Flood Control, Open Pit Planning and Layout, Selection of Mining-Stripping, Equipment and Methods, Fragmentation and Drilling Principles.

MT2400 Mineral Processing I

This course is designed to train the learner to function efficiently in an ore concentration facility. The subject matter consists of sampling methods and procedures, flow-sheeting, screens and screen analysis, pulp density, calculations, grinding-crushing equipment and size reduction calculations, classification, concentration and tailings disposal.

Prerequisite(s): MA1100

MT2410 Mineral Processing II

This course is a continuation of MT2400. It introduces students to theory in areas of flow sheeting, methods of analyzing and recovering ore while controlling environmental impacts.

Prerequisite(s): MT2400

MT2650 Hydrometallurgical Refining

This course will focus on the flow, feed preparation, and operation of the hydrometallurgical process as it applies to the Voisey Bay Nickel operation. Emphasis will be placed on the preparation and handling of the metal ore concentrate for the extraction of the desired minerals using the hydrometallurgical process.

Prerequisite(s): CH1121, MT2400

MT3400 Mineral Processing III

This course provides information and skills in flotation plant operation and pattering.

Prerequisite(s): MT2410

MU1100 Introduction to Music

This is an introductory course which explores basic theory and terminology of music. The intent is to provide students with the skills to read music and to write a simple composition while learning the vocabulary of the industry.

MU1110 Music and Culture

This course is designed to trace the history of music and to explore the reciprocal relationship between music and culture. The course traces the development of distinct musical genres and illustrates that these genres serve as mirrors of their respective societies.

Prerequisite(s): MU1100

MU1120 Musical Theatre

This course explores the role of music in theatre arts. The primary focus is upon the role of music, and the musical director, within theatre.

MU1200 Songwriting

This course provides an overview of effective songwriting principles. Students will review these principles and will listen critically to a wide range of selections from a variety of genres. By the end of the course, students will be composing their own pieces.

MU1410 Performance I

Spread across four semesters, with a final performance jury at the end of semester four, this course is designed to examine all areas of musical performance, in both public and controlled environments, while the student builds a strong portfolio and enhances his or her performance skills. Students will be graded through peer evaluation of classroom performances, instructor evaluation of both college and public performances, and portfolio evaluation, which will take place as part of the final jury. At the core of this course will be current performance trends in the music industry, professionalism, and performance career planning.

MU1411 Performance II

Spread across four semesters, with a final performance jury at the end of semester four, this course is designed to examine all areas of musical performance, in both public and controlled environments, while the student builds a strong portfolio and enhances his or her performance skills. Students will be graded through peer evaluation of classroom performances, instructor evaluation of both college and public performances, and portfolio evaluation, which will take place as part of the final jury. At the core of this course will be current performance trends in the music industry, professionalism, and performance career planning.

MU1510 Clinical Radiography Orientation

All clinical courses are designed to provide extensive clinical experience to students. Applied knowledge of anatomy and physiology, radiographic technique, pathology, radiation protection and patient care and safety will be reinforced. Emphasis will be placed on intensive demonstrations and application of clinical skills in professional practice. Throughout the entire clinical component of the Medical Radiography program (48 weeks total), students will maintain documentation which demonstrates both the quality and quantity of clinical experience acquired, thus ensuring on-going maintenance of competencies acquired.

Prerequisite(s): Successful completion of semester 5

MU2102 Radiographic Anatomy & Pathology

In order for a technologist to competently perform any diagnostic radiographic examination, a complete and thorough knowledge of human anatomy is required. It is also essential that he/she be able to identify anatomical structures on the radiograph; differentiate between the normal and abnormal radiographic images; used his/her knowledge of tissue densities, either normal or pathological, be able to accurately locate hidden structures by relating to surface landmarks. In addition, the pathologies relevant to the skeletal, circulatory and lymphatic systems and their radiological significance will be discussed.

Prerequisite(s): Successful completion of semester 3

MU2103 Radiographic Anatomy & Pathology

This course is a continuation of MX2102, where the student will continue to learn a complete and thorough knowledge of human anatomy. Anatomical structures will be located by relating to surface landmarks. Identification of anatomical structures on the radiographic image as well as the ability to differentiate between normal and abnormal anatomical appearance is required. The student will become
knowledgeable of the structure, function, location and radiographic appearance of structures in the skull, as well as the following anatomical systems: Digestive, Respiratory, Urinary, Reproductive, Nervous and Endocrine Systems. Associated pathologies, in particular those which may be demonstrated radiographically, are studied, as well as cross-sectional anatomy of the skull, chest, abdomen and spine as related to CT imaging.

**Prerequisite(s):** MX2102

**MX2110 Radiographic Technique**

This course is designed to introduce the student to the fundamental practices involved in the performance of radiographic imaging. Instructional areas include: terminology, IR identification, patient/technologist relationship, examination protocol, radiation protection and technical quality. Emphasis will be placed on basic, alternate, and specialized imaging of the appendicular and axial skeleton, angiography, and lymphangiography.

**Prerequisite(s):** BL2100

**Co-requisite(s):** MX2102, MX2210, MX2310, MX2200

**MX2120 Radiographic Technique**

This course will consist of instruction in the basic, alternate and special positioning required to radiographically demonstrate the skull and facial bones, as well as body organs and structures of the following systems: Respiratory, Digestive, Urinary, and Reproductive Systems. Discussion, demonstration and clinical application will include such areas as foreign body localization, mobile, operating room, trauma radiography, bone mineral densitometry, interventional radiograph and C.T. imaging.

**Prerequisite(s):** MX2110

**MX2200 Image Recording**

This course is designed to give the student a comprehensive knowledge of the process involved in the formation of a diagnostic x-ray image generated through the use of radiant energy. Students will learn photographic as well as digital methods of image capture and will become familiar with the many factors that affect the quality of the radiographic image. Image manipulation, display and archiving will be discussed, as well as methods of reducing image artifact, ensuring the production of optimum diagnostic images.

**Prerequisite(s):** Successful completion of semester 3

**Co-requisite(s):** MX2310, PH2200

**MX2201 Image Recording**

This course is a continuation of MX2200. It is designed to provide the student with a comprehensive knowledge of quality assurance processes associated with image quality management. Performance of specific quality control procedures necessary to maintain a high standard of image quality using both digital and analogue image processing systems will be studied. Quality control tests for general radiographic units as well those used in fluoroscopy, CT, mammography, and bone mineral densitometry will be studied. The importance of faithful adherence to quality control procedures and processes as part of a diagnostic imaging department’s overall risk management strategy will be discussed. Students will learn to perform inspection procedures and reject-image analysis as part of the overall quality assurance program.

**Prerequisite(s):** MX2200, MX2310

**Co-requisite(s):** MX2301

**MX2301 Apparatus and Accessories**

This course is developed to allow the student to gain a comprehensive knowledge of a wide variety of x-ray generating units. They will acquire the knowledge and skills necessary to operate basic and pres-

**MX23010 Apparatus and Accessories**

This course has been developed so that the student will have a comprehensive knowledge of the production of x-radiation that will be useful for medical purposes. The student will understand the use of the x-ray tube, its components, and characteristics that will allow the proper control of the x-ray beam. The student will have a basic knowledge of the electrical circuits that are essential for the production of the type of x-radiation that will result in high quality radiographic imaging. The student will learn about the effective use of grids and collimators to reduce patient dose and improve image quality. The student will have knowledge of methods employed to facilitate heat dissipation during the production of x-radiation, as well as practical skills employed to conserve tube life. The student will be able to identify signs of tube failure.

**Prerequisite(s):** Successful completion of semester 3

**Co-requisite(s):** MX2200, PH2200

**MX2410 Patient Care & Safety**

This course is designed to provide the student radiographer with the necessary knowledge to provide good patient care in a variety of situations which he/she might encounter in the hospital environment. This course emphasizes basic concepts in general patient care, body mechanics, basic nursing skills, use of common drugs, as well as caring for patients with special needs. During this semester students will also receive instruction in the fundamentals of first aid and basic life support

**Prerequisite(s):** Successful completion of semester 3

**Co-requisite(s):** MX2210, MX2102

**MX2500 Radiation Protection and Radiobiology**

Combined with their knowledge of radiobiology, students will learn how to utilize radiation to provide maximum diagnostic information with minimal biological damage to the patient. Students will become familiar with international, national and provincial standards. They will learn how to maintain these standards by the correct use of equipment, accessories and other relevant factors. They will learn how to provide maximum protection from ionizing radiation to the patient, general public, co-workers and themselves.

**Prerequisite(s):** BL2100, PH2200, MX2102, MX2310

**Co-requisite(s):** MX2103

**MX3250 Clinical Radiography**

All clinical courses are designed to provide extensive clinical experience to students. Applied knowledge of anatomy and physiology, radiographic technique, pathology, radiation protection and patient care and safety will be reinforced. Emphasis will be placed on intensive demonstrations and application of clinical skills in professional practice. Throughout the entire clinical component of the Medical Radiography program (48 weeks total), students will maintain documentation which demonstrates both the quality and quantity of clinical experience acquired, thus ensuring on-going maintenance of competencies acquired. This course will also provide the student with the opportunity to become familiar with related disciplines in order to review patient data such as images and reports from other studies through research and observation of other imaging and therapeutic modalities.

**Prerequisite(s):** Successful completion of Semester 5
ND1110 Liquid Penetrant Inspection
This course prepares students to recognize surface flaws in components that appear as a result of capillary action. Flaws become apparent when a colored or florescent dye bleeds out of the component to reveal a crack in its surface. This course provides learners with an introduction to the Liquid Penetrant Inspection in preparation for national Non-Destructive Technician Certification through Natural Resources Canada. This training will include both in class and practical training.
Prerequisite(s): 1S1520
Co-requisite(s): ND1130

ND1130 Materials and Process
This course provides students information on metals, metal forming, casting, welding, service conditions, and flaws. It also introduces the physical, electrical, mechanical, and magnetic properties of metals. This course provides learners training for Materials and Process in preparation for nation Non-Destructive Technician Certification through Natural Resources Canada. This training will include both in class and practical training.

ND1210 Magnetic Particle Inspection
This course is designed to train learners to use small magnetic particles (i.e. iron filings) to detect flaws in components. For this method to be used the component must be made of ferromagnetic material such as iron, nickel, cobalt, or some of their alloys. This course provides learners training for a Magnetic Particle Inspection in preparation for national Non-Destructive Technician Certification through Natural Resources Canada. This training will include both in class and practical training.
Prerequisite(s): 1S1520
Co-requisite(s): ND1130

ND1310 Industrial Ultrasonics I
This course trains learners to use high frequency sound energy to conduct examinations and make measurements in materials to determine surface or internal cracks or flaws in the materials. This course provides training for a Level I Industrial Ultrasonics NDT Technician Certification.
Prerequisite(s): ND1130, TS1520, MA1080

ND1410 Industrial Radiography I
This course provides training for Level I Industrial Radiography NDT Technician Certification. It also trains learners to send radioactive energy through a material enabling a negative (Photo) to be produced of that material illustrating internal flaws or cracks. This will include both in class and practical training.
Prerequisite(s): TS1520, MA1080, ND1500, ND1130

ND1411 Industrial Radiography II
This course provides training for Level II Industrial Radiography NDT Technician Certification. It also trains learners to send radioactive energy through a material enabling a negative (Photo) to be produced that material illustrating internal flaws or cracks. This will include both in class and practical training.
Prerequisite(s): ND1410

ND1500 Radiation Safety and CEDO
This course introduces learners to radiation safety techniques, ionizing radiation, quantity, and unit. It presents the procedure for monitoring radiation biological effects of radiation, maximum dosage and effective dosage, dose control, magic numbers, as well as the standard operating procedure for a radioactive site. This course will also provide learners an opportunity to become nationally certified in CEDO – Certified Exposure Device Operator this is a certification that is required for NDT technicians to handle and work with radioactive materials. This will include both in class and practical training.
Prerequisite(s): TS1520, MA1080

OF1100 Office Management I
This course will acquaint the student with the significant role of the office employee in business, the importance of effective communication and various communications methods, the use of reference resources, and the need to enhance desirable personality traits and attitudes.
Prerequisite(s): TS1520, MA1080

OF1101 Office Management II
This course examines filing systems and procedures used by office workers, manual and electronic methods of information storage and retrieval, types of microforms, and the need for records retention. Proper procedures for handling mail, planning and organizing business travel, good customer-service techniques, and researching information are also explored.
Prerequisite(s): TS1520, MA1080

OF2100 Office Management III
This course is designed to further prepare the student for the workplace. The focus is on topics such as personal development, planning meetings and conferences and job search skills to refine the skills needed to become a successful and professional employee. Students will plan meetings and events using standards of the International Association of Administrative Professionals (IAAP).
Prerequisite(s): OF1100, DM1210 and CM2110

OF2101 Office Management IV
In this course students will complete an office simulation that will require them to perform research, make decisions, and apply time management skills. Students will apply knowledge they have gained in all previous Office Administration courses.
Prerequisite(s): DM2200 and OF2100

OF2300 MCP Billing
This course is designed to emphasize the preparation of Medical Care Plan (MCP) claim forms relating to various medical procedures in accordance with the guidelines established by the Newfoundland Medical Care Plan.
Prerequisite(s): TM1100
Co-requisite(s): TM2100

OF2400 Medical Office Management I
This course is designed to acquaint the student with the role of the medical office administrative assistant in a hospital or in the office of a physician or other health care professional. It provides opportunities for the student to acquire knowledge on such topics as interpersonal relationships, reception and client management, health insurance, and general issues relating to prescriptions. There is a strong emphasis on the need for confidentiality in a medical environment throughout the course.
Prerequisite(s): OF1101

OF2401 Medical Office Management II
This course further develops the students’ ability to function efficiently in a medical environment. A time-limited medical office practice simulation program is utilized to acquaint the student with typical medical cases and to assist in the development of organizational, time management, and decision-making skills. Students are also given an opportunity to acquire job search skills in the preparation of letters of application and resumes and in simulated interviews.
Prerequisite(s): OF2400

OF2500 Legal Office Procedures I
This course focuses on the role of the legal administrative assistant in particular areas as sources of law, memoranda of law, diaries and client records, the Newfoundland and Labrador court system, civil litigation, legal terminology and incorporation procedures for Newfoundland and Labrador. In addition, emphasis is placed on personal development of the student in areas such as professionalism, confidentiality, personality development, human relations, and personal appearance.
Prerequisite(s): OF1101
Co-requisite(s): DM2210

OF2530 Legal Office Procedures II (Real Estate, Wills, Estates, and Family Law)
In this course, the student is informed of the legal procedures in Newfoundland and Labrador regarding the purchase and sale of real property, beginning with the Agreement of Purchase and Sale and ending with the Closing at the Registry of Deeds. Students are exposed to mortgages for purchasing and refinancing real property, and to procedures for the purchase and sale of condominiums. The student is also informed of the legal procedures regarding wills, the probate and administration of estates, and family law. Emphasis is also placed on office management skills and personal development in areas such as human relations, poise and current issues at work.
Prerequisite(s): OF2500
Co-requisite(s): DM2250

OF2700 Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.
Prerequisite(s): OF2100

OF2710 Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills available through Distributed Learning

Available through correspondence
necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.

**Prerequisite(s):** OF2500

### OF2720 Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.

**Prerequisite(s):** OF2400

### OF2730 Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.

**Prerequisite(s):** OF2100

### OJ1020 Work Exposure - Welding Engineering Technician
This one week unpaid optional workplace exposure program is designed to provide Welding Technician students with an opportunity to experience a real world employment setting before graduation. Students are placed with the many agencies that provide welding related services. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.

**Prerequisite(s):** Successful completion of all program-related courses prior to the one week work-place exposure.

### OJ1100 Work Exposure (Certificate)
The work exposure is a required portion of the program and provides a unique learning experience in a real workplace setting. Students will complete two weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in previous courses in the Business Administration Certificate program. They will become more employable as they enhance technical, team-building, problem-solving, and customer-service skills; increase accountability; and strengthen positive attitudes and work ethic.

**Prerequisite(s):** Successful completion of all courses in the Business Administration Certificate program with a minimum Grade Point Average of 2.00

### OJ1130 Work Exposure
This three-week unpaid workplace exposure program is designed to insure that a graduating student has an opportunity of functioning with a real world employment setting. Students are placed with a Fish and Wildlife related agency.

**Prerequisite(s):** Successful completion of all courses within the Forestry program (must be eligible to graduate).

### OJ1301 On-The-Job-Training
This six-week paid workplace exposure program is designed to provide Welding Technician students with an opportunity of functioning with a real world employment setting before graduation. Students are placed with the many agencies that provide welding related services. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.

**Prerequisite(s):** Successful completion of all program-related courses prior to the one week work-place exposure.

### OJ1300 On-The-Job Training
This three-week unpaid workplace exposure program is designed to ensure that a graduating student has an opportunity of functioning with a real world employment setting. Students are placed with a Fish and Wildlife related agency.

**Prerequisite(s):** Successful completion of all courses within the Fish and Wildlife program (must be eligible to graduate).

### OJ1400 Work Exposure
Learners will gain an appreciation of the real work environment through a three week work placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Electrical Engineering Technology program. Learners will further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Clear academic standing for graduation

### OJ1420 Work Exposure
Learners will gain an appreciation of the real work environment through a three week work placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Electrical Engineering Technology (Industrial Controls) program. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Clear academic standing for graduation

### OJ1450 Hospitality Tourism Management Field Work I
This field related course is designed to assist students in obtaining on-the-job experience. This course is a six week workplace experience for students pursuing a Hospitality Service Certificate or a Tourism Hospitality Management Diploma. The purpose is to provide students the opportunity to apply the knowledge and skills acquired in class to a position in the tourism industry. This course will be completed the scheduled intersession. Program instructors will assist students in securing a placement within the tourism industry. The instructors will supervise and evaluate the student’s progress in conjunction with the field supervisor. Arrangements and expenses for transportation, lodging, and meals are the sole responsibility of the student.

**Prerequisite(s):** Successful completion of all courses in semesters one and two.

### OJ1550 Work Exposure - HRM
The student will gain an appreciation of the real work environment in a business or industry directly related to the area of training. This six-week period will be required in addition to academic content covered. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behavior and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in all previous courses in the HRM Diploma programs. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in semesters one to five of the HRM Diploma program with a minimum GPA of 2.0

### OJ1560 Work Exposure - Marketing
The student will gain an appreciation of the real work environment in a business or industry directly related to the area of training. This six-week period will be required in addition to academic content covered. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behavior and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in all previous courses in the Marketing Diploma programs. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in semesters one to five of the Marketing Diploma program with a minimum GPA of 2.0

### OJ1580 Work Exposure - Accounting
The student will gain an appreciation of the real work environment in a business or industry directly related to the area of training. This six-week period will be required in addition to academic content covered. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behavior and performance expected in the work environment. Throughout the work exposure experience, the student will apply the skills and knowledge learned in all previous courses in the Accounting Diploma programs. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in semesters one to five of the Accounting Diploma program with a minimum GPA of 2.0

### OJ1590 Work Exposure - General
The student will gain an appreciation of the real work environment in a business or industry directly related to the area of training. This six-week period will be required in addition to academic content covered. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behavior and performance expected in the work environment. Throughout the work exposure experience, the student will apply the skills and knowledge learned in all previous courses in the General Diploma programs. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in semesters one to five of the General Diploma program with a minimum GPA of 2.0

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*Available through Distributed Learning*
Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in previous courses in the General Diploma program. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, accountability, and the ability to work independently.

Prerequisite(s): Successful completion of all courses in semesters 1-5 of the General Diploma program with a minimum GPA of 2.0

OJ1800 On the Job Training
This six-week unpaid workplace exposure program is designed to ensure that a graduating student has an opportunity of functioning with a real world employment setting. Students are placed with the program related agency.

Prerequisite(s): Successful completion of all courses within the academic program (must be eligible to graduate = 2.0 GPA)

OJ1860 Job Placement I
Learners will gain an appreciation of the real work environment through a six-week job placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Renovation Technician program. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, accountability, and further enhancing their personal growth. This job placement will require learners to practice basic skills learned in the first year of study.

Prerequisite(s): Completion of Semester 1 and 2

OJ1861 Job Placement II
Learners will gain an appreciation of the real work environment through a six (6) week work placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Renovation Technician programs. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, accountability, and further enhancing their personal growth. This job placement will require learners to practice skills learned in years one and two of the program.

Prerequisite(s): Completion of Semester 3 and 4 and OJ1860

OJ1900 Work Exposure – Office Administration (Executive)
The work exposure is a required portion of the program and provides an opportunity for work experience in a real workplace setting. Work exposure placements must be program relevant and, six weeks in duration. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in previous courses in the Office Administration (Legal) Diploma program.

Prerequisite(s): Successful completion of all courses in semesters 1-5 of the Office Administration (Legal) Diploma program with a minimum Grade Point Average of 2.0

OJ1910 Work Exposure – Office Administration (Legal)
The work exposure is a required portion of the program and provides a unique learning experience in a real workplace setting. Work exposure placements must be program relevant, and four weeks in duration. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in previous courses in the Office Administration (Legal) Diploma program.

Prerequisite(s): Successful completion of all courses in semesters 1-5 of the Office Administration (Legal) Diploma program with a minimum Grade Point Average of 2.0

OP1320 Classification
This course is designed to explore the importance of classification within a recordkeeping system. The topics covered will give the student the fundamentals of a classification scheme; the different types of classification schemes; the current standards and guidelines; and why it is important to maintain a classification scheme within a records system.

Prerequisite(s): OP1400

OP1400 Records and Information Management I
This course will provide the student with the fundamental concepts of records and information management. The topics covered include: the role of records management and its importance in today’s businesses and organizations, the information management code of ethics, the life cycle of records, records inventory procedures, records appraisal, records retention, document management systems. Additionally, the student will examine active records in terms of storage and retrieval, and indexing rules; and classification systems.

OP1401 Records and Information Management II
This course is designed to further explore the records and information management discipline and to teach students the fundamentals of information security. The topics covered will make the students aware of the legislation and litigation procedures involved with information security as well as further develop the students’ ability to manage all types of documents. Students will study records control, quality control and improvement, retention requirements, the need for security, the identification of vital records, disaster prevention and recovery as well as controls for inactive and archival records.

Prerequisite(s): OP1400

OP1600 Electronic Records Management
This course is designed to give students the knowledge necessary to understand what happens within the life cycle of records. The topics covered will give students an understanding of sources of records and appropriate capture mechanisms, concepts of classification, current metadata standards, search and retrieval approaches, retention and disposal schedules and related concepts such as migration, digital preservation and discovery and disclosure. Students will be given the opportunity to put these concepts into practice using the enterprise content management (ECM) software.

Prerequisite(s): OP1400

PA1110 Anatomy and Physiology
This course is designed to enable the student to acquire a comprehensive knowledge of gross anatomy and physiology of the major systems of the human body. The didactic content of the course will include instruction in the key medical terms and related structures of the following body systems: integumentary, skeletal, muscular, nervous, the senses, endocrine, cardiovascular, respiratory, digestive and genitourinary (including reproductive organs). Emphasis will be placed on the appropriate medical terms related to each of these systems and their organs and structures. The student will be instructed in the essentials of medical terminology including word roots, prefixes and suffixes of select medical terms pertinent to paramedics. In addition to the above information on anatomy and physiology, the student will be instructed on the general principles of pathophysiology to prepare in understanding the body’s reaction to trauma and illness.

Prerequisite(s): None
Co-requisite(s): None

PA1130 EMS Operations/Communications
The student will be instructed in the elements of Emergency Medical Services (EMS), how EMS services the public in North America, specifically across Canada, and particularly in Newfoundland and Labrador. This course will provide the student with the information needed to maintain physical and emotional health in this demanding and stressful occupation. The student will learn relevant medicolegal concepts pertaining to prehospital care.
PA1270 Management of Disease/Injury
The student will develop competency in systematic methods of patient assessment including history taking, techniques of physical examination, vital signs assessment, chest auscultation, the appropriate field use of pulse oximetry devices and blood glucose monitoring. The student will be introduced to non-invasive monitoring devices used in prehospital care. This course includes theory and skills labs to perform medical assessments on simulated subjects in simulated situations, in preparation for applying these methodologies to patients in the clinical and ambulance practicums scheduled later in the training program. The student will learn the components of clinical decision making. The student will develop competency in skills to provide appropriate interventions to minimize or reduce further injury or worsening of various patient conditions in the simulated setting. These skills will be interwoven with the relevant theory throughout the program. Skills included are: Simulated and clinical patient assessment, vital signs assessment, pulse oximetry, blood glucose monitoring, non-invasive airway management, chest auscultation and percussion, prehospital oxygen therapy, splinting and spinal immobilization, simple wound care, patient positioning, lifting and transferring, use of wheeled ambulance stretchers, Cardiopulmonary Resuscitation (CPR), and Automated External Defibrillation (AED). The student will be instructed in assessment and management strategies for the trauma patient. Laboratory sessions will provide hands-on teaching and practice of wound care, splinting and immobilization, utilization of rigid spinal immobilization and extrication devices, and management of patients in shock. The didactic content of the course will include instruction in the key concepts of trauma injury to various body organs, and body systems including musculoskeletal, head, neck, spine and nervous system, and soft tissue injuries.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

PA1310 Introductory Pharmacology
This course introduces the student to the fundamentals of pharmacology as an introduction to drug administration. This course will provide the student with the foundation of drug terminology and actions for future course work in the second and subsequent semesters. The student will learn the pharmacological actions and side effects of frequently administered medications. The student will learn how to interpret and give medications through various routes of administration including oral, sublingual, transdermal, parenteral, and inhalation. The student will learn the basics of the pharmacokinetics, pharmacodynamics, and pharmacotherapy of drugs. The student will also learn how to use the World Health Organization’s Anatomical Therapeutic Chemical Classification System (ATC). The student will gain a working knowledge of the therapeutic actions and side effects of frequently used medications in the prehospital setting. The student will also learn the ethical and legal issues related to drug administration, as well as the correct use of medical abbreviations and symbols.

Co-requisite(s): PA1110, PA1130, PA1260, PA1310, PA1600

PA1330 Cardiology
This course will review the electrical conduction system of the heart covered in PA1110 and PA1150. The student will learn the basic pathophysiology of cardiac conduction disturbances that contribute to dysrhythmias. This course will enable the student to interpret cardiac rhythms via Lead II EKG tracings, using a systematic five step methodology. The student will learn how an EKG tracing reflects the electrical function of the heart, and will learn what the waveforms on the EKG represent in relation to the cardiac electrical conduction system. The student will learn to differentiate between non-life threatening, potentially life threatening, and life threatening cardiac rhythms and integrate the EKG interpretation as a tool for patient assessment. Although the didactic exercises in this course will focus on simulated situations, the student will be expected to apply the skills of Lead II EKG interpretation in the clinical and field practicum during the second semester.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

PA1350 Special Considerations
The student will learn special considerations that are required for assessment and treatment of patients who have suffered an environmental emergency, or an emergency related to water, diving, or high altitude. This course will also provide students the opportunity to enhance their skills in trauma management. The student will learn theory and simulated practice in advanced airway management, according to International Trauma Life Support – Advanced standards.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

PA1410 Interagency Relations
This course focuses on interagency relations in field operations. In this regard, the student will develop an understanding of the responsibility of the paramedic in interacting with police, fire, air transport teams, rescue specialists, and experts in managing dangerous goods incidents. The student will learn the special considerations to be given when paramedics are involved with patients being transferred to or from air medical transport, including the practical skills of packaging a patient in preparation for transfer to air transport. The student will participate in a practical workshop to learn about the safety issues related to providing patient care while extrication tools are being used. The students will learn the responsibilities of the paramedic at crime scenes and accident scenes, and their role in collaborating with law enforcement agents.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

PA1450 Advanced Therapeutics
This course is designed to enable the student to acquire the knowledge of theory, application of psychomotor skills, utilization of critical thinking and decision-making skills when presented with various patient types. The student will learn advanced assessments and interventions for medical and trauma patients across all age groups. Treatments emphasized in this course include fluid resuscitation through peripheral intravenous access and intravenous therapy, pharmacology, specific pharmacological interventions and various methods of medication administration. The student will demonstrate, through a variety of assessment tools, their readiness for safely and appropriately applying the knowledge and skills in the clinical and field settings. In this course, the student will be provided the opportunity, in simulated scenario settings, to assess and care for the patient utilizing skills at both the BLS and advanced level utilizing procedures common to pre-hospital providers including but not limited to: stethoscope, Sphygmomanometer, Cardiac Monitor, Blood Glucose Monitor, Pulse Oximetry, AED, CPR, Intravenous fluid resuscitation, Symptom Relief Drug Administration, pharmacology, immobilization, patient positioning, and appropriate transport decisions. The student will also be tested on the simulated setting as part of the final testing process prior to entering the second and third semester clinical and field practicums.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

Prerequisite(s):
Co-requisite(s): PA1350, PA1510, PA1330, PA1500, PA1410

**PA1500 Mental Health Interventions**

The student will learn to: provide care to a patient experiencing a psychiatric crisis; identify potential causes for behavioral and psychiatric illnesses; describe effective techniques for interviewing a patient during a behavioral emergency; distinguish between management techniques for selected behavioral or psychiatric disorders; and in role playing situations, will demonstrate measures that may be used to safely diffuse a potentially violent patient situation. The student will be introduced to the concept of normalcy related to the psychological aspect of patient assessment in the general population. The student will develop an understanding of various emotional and mental illnesses using case study examples of the entire spectrum of mental illness. The student will learn to differentiate between the patient displaying neuroses and psychoses.

**PA1510 Special Populations**

The student will study special considerations that are required for assessment and treatment of: patients of specific age groups; patients with physical and/ or emotional disabilities; patients with chronic diseases; patients with genetic anomalies; oncology patients; and patients with terminal illness or in palliative care. In this course, the student will gain an understanding of special circumstances, or existing patient conditions which may influence how the paramedic is required to alter patient care. The student will learn the pathophysiology of these conditions, age groups, mental illnesses, hereditary conditions, or chronic diseases and disabilities to better understand the limitations of these patients, and how the paramedic may be required to adjust his or her expectations of the patient’s ability to communicate, or perform activities. The student will also learn signs and symptoms indicative of particular conditions which may affect the patient’s ability. The student will also be able to counsel the patient and family members appropriately.

The student will complete selected chapters of the Canadian version of the Neonatal Resuscitation Program (NRP) which will be taught by certified NRP instructors.

**Prerequisite(s):** PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

**Co-requisite(s):** PA1350, PA1450, PA1330, PA1500, PA1410

**PA1600 Clinical and Field Practicum I**

The Clinical and Field practicum for the Primary Care Paramedic program is integrated into the first semester practicum is to provide the student the opportunity to become acquainted with the milieu of the hospital and ambulance, and to introduce the student to the EMS environment. The student will develop communication skills while interacting with patients and staff, take vital signs, assist with patient assessment, and provide basic care to patients at the Basic Life Support level. In the first semester, students will be placed with preceptors in the pediatric setting such as the Pediatric ER unit, for a minimum 36 hours, adult ER for 96 hours, and on ambulance for 96 hours. In addition, students will be allotted sufficient time (24 hours) for two natural childbirths in the Case Room. In all three practicums, preceptors will assist the student to apply theory and didactic content to the real world of EMS. Students will be provided with a competency checklist for their Clinical (hospital) and field (ambulance) through CompTracker, by the use of electronic tracking devices. Students will be trained in the use of the electronic tracking system during the training program. It is the responsibility of the student to ensure all competencies are met by the end of the respective semesters. The Clinical Coordinator/Instructor or designate will review competency checklists on a frequent basis to ensure the student is progressing and meeting required competencies. Students may not enter first semester placements until all prerequisite courses (noted below) are successfully completed.

**Prerequisite(s):** PA1110, PA1130, PA1260, PA1270, PA1310, PA1600, PA1330, PA1510, PA1500, PA1410, PA1450

**PC1100 Political Science**

Introduction to Canadian Politics and Government is an introductory course in political science. Students are introduced to the discipline of political science and to the structure and role of federal, provincial, and municipal government institutions in Canada.
They also study some of the major contemporary political issues in the country.

**PD2100 Portfolio Development**
In this course students will create a portfolio of their work. Topics include studio photography, portfolio types, and portfolio development and maintenance. 
**Prerequisite(s):** MC1170

**PD2110 Special Project I**
In this course students will identify the elements and components necessary to launch an event such as an exhibition and/or fashion show. Students will learn to develop and implement a project plan complete with checkpoints and documentation. 
**Prerequisite(s):** Successful completion of semesters one through four.

**PD2120 Special Project II**
In this course students will implement an event plan and corresponding timeline while conducting regular checkpoints. Students will also learn how to critically evaluate the event, make recommendations, and develop corresponding documentation. 
**Prerequisite(s):** PD2110

**PE1100 Basic Electronics (M, E)**
This M and E introductory course in electrical theory covers the basic concepts of electricity, circuit analysis and magnetism. The laboratory work is designed to develop skills in the construction of electrical circuits, use of electrical measuring instruments, and reinforce theoretical concepts.

**PE1140 Basic AC Electronics (M, E)**
This M and E course covers basics of A.C. theory and application. Analyzing A.C. circuits using impedance, admittance and phase to obtain any required circuit quantities as current, voltage, power, and frequency. This course examines resonance frequency and phase relations to sinusoidal waveform on capacitors, inductors, and resistors. Electrical measuring equipment such as oscilloscope, frequency generators, frequency counters, VOM, and other electronic measuring devices will be used to enforce theoretical concepts. 
**Prerequisite(s):** PE1100

**PE1200 Basic Aircraft Electrical Systems (M, E)**
The purpose of this M and E course is to give the student an overview of aircraft electrical systems. Batteries, generators, alternators and ground power sources will be explained. Basic wiring practices as well as an introduction to wiring schematics and ignition systems will be completed. The practical portion of this course will include all aspects of wire routing, securing, tying, splicing and attaching.

**PE1300 Battery Maintenance (M, E)**
This M and E course is designed to have the student identify the deep cycle an Aircraft Ni-CAD battery and charge an aircraft Lead acid battery. 
**Prerequisite(s):** PE1200
**Co-requisite(s):** PE1350

**PE1350 Electrical Power Systems (M)**
This M course only is designed to upgrade the basic knowledge and skill learned to date. An in depth study of AC/DC power generation will take place. External Power systems and Electrical load Distribution will also be addressed in greater detail. 
**Prerequisite(s):** PE1200
**Co-requisite(s):** PE1300

**PE1510 Electrical Rotating Machines**
This course introduces the learner to electrical rotating machines. It covers theory, typical configurations and operating parameters. The learners gain an appreciation of the machine types, circuit arrangements, and operating characteristics through lab exercises. 
**Prerequisite(s):** ET1200

**PE1511 Electrical Stationary Machines**
This course introduces the learner to stationary electrical machines, transformers and critical service power supplies. It covers theory, typical configurations and operating parameters as well as harmonic distortion and mitigation techniques. The learners gain an appreciation of machine types, system configurations, and operating characteristics through lab exercises.

**Prerequisite(s):** PE1510
**Co-requisite(s):** MA2101

**PE2100 Analog Electronics (M, E)**
This M and E course is an introduction to analog application. The student will cover all basic theory in power supply, amplifiers, radio receivers and transmitters. In labs the student will identify symptoms in malfunctioning equipment and perform preliminary checks and eliminate obvious problems. This course will direct the student through a balanced approach of theory and practical experience in constructing circuits from diagrams, component identification and the use of electronic test equipment.

**Prerequisite(s):** PE1140

**PE2130 Electrical Practices**
This course introduces the learner to the plant electrical distribution system. It provides a foundation in the principles applied to the distribution, protection and control of plant power. It also provides an understanding of arc flash hazard analysis and labeling. 
**Prerequisite(s):** PE1511

**PE2140 Digital Electronics (M, E)**
This M and E course provides an effective way to teach student the basics of digital methods and techniques. The microprocessor architecture covers the operation, memories, how personal computers work. All labs experiments and troubleshooting techniques will enhance the student concepts of digital electronics in this course.

**PE2240 Hazardous Areas**
This course gives the learner an understanding of hazardous area classifications. It includes system design to confine an explosion inside an enclosure, isolate the ignition source and limit the energy flow into the hazardous area. The learner receives hands on training to install and maintain hazardous area equipment.

**Prerequisite(s):** XD1810

**PE2430 Plant Electrical Systems**
This course introduces the student to the plant electrical systems needed to support a modern production process, one that focuses on distributing, converting and controlling electrical energy in an effort to improve product quality and reduce operating costs. Topics include energy sources, power distribution in an industrial plant, energy conversion using motors, motor protection and control requirements, and digital controllers used for energy management (demand controller) and motor control (PLC). 
**Prerequisite(s):** ET1101

**PE2500 Electrical Practices**
This course covers the care and use of hand tools, safety, types of electrical protection, installation of motor starters and relays, drawing electrical schematics, troubleshooting motor control circuits, installation of circuits using sections of the CSA electrical code.

**Prerequisite(s):** ET1310, ET1101

**PE2501 Electrical Practices**
This is an intermediate level course that covers the testing and dismantling of DC and AC motors, as well as an introduction to electrical installations in hazardous locations. 
**Prerequisite(s):** PE2500, MP2910

**PE2730 Industrial Instrumentation Practices**
This course is designed to provide the instrumentation and Controls Engineering Technologist with the knowledge and skills necessary to implement safe systems in an industrial environment. Emphasis will be on OHS, WHMIS, safe working practices, instrument wiring and grounding considerations, fasteners and adhesives, conduit and tube and fitting installations.

**Prerequisite(s):** ET1310

**PE2800 Industrial Mechanical Systems**
The purpose of this course is to introduce the students to industrial mechanical systems. The students are expected to use this knowledge to assist with improving the efficiency of common mechanical processes, in an effort to improve product quality. Topics covered include the operation, application and maintenance of pumps, power transmission equipment, conveyors, seals and bearings; condition monitoring and preventive measures, including alignment issues, vibration analysis, and fluid sampling, and preventive and predictive maintenance techniques.

**Prerequisite(s):** PH1101, FM2230

**PE3100 Electrical Practices**
This course covers the installation of heating and lighting controls, electrical drawings and commercial and industrial demand load calculations. 
**Prerequisite(s):** PE2501

**PE3101 Electrical Practices (Facility Design)**
This is an advanced course intended to introduce students to the broad field of electrical facility design. Major topics include electrical distribution design, exterior lighting and controls, lamp technology, interior lighting and controls, electrical heating and controls and electrical distribution design. This course is followed by a project course (PE4100) to reinforce theoretical concepts and enable students to apply those concepts in the design process.

**Prerequisite(s):** PE3100

**PE4110 Electrical Practices (Facility Design)**
This course is project oriented and is a continuation of subject materials covered in all prior Electrical Practices courses. It involves compilation of a complete electrical facility design inclusive of design calculations, preparation of detailed specifications, as well as a complete set of electrical drawings. The final product shall be sufficiently detailed to enable a hypothetical electrical contractor to prepare a complete tender package in order to implement the work.

**Prerequisite(s):** PE3101

**PH1050 Introductory Physics I**
Introductory Physics I is a Comprehensive Arts and Science (CAS) College Transition course. The course focuses on the fundamentals of Physics. It is the first of two Physics courses offered in CAS College Transition. These courses are designed to assist students with further study in Physics at the post-secondary level and entry in College programs.

**PH1051 Introductory Physics II**
Introductory Physics II is a Comprehensive Arts and Science (CAS) College Transition course. It is the second of two physics courses designed to prepare students for entry into a number of programs at the College level as well as CAS Transfer: College-University. Following Introductory Physics I, this course continues the exploration of some of the fundamental topics common to all Physics courses.

Prerequisite(s): PH1050

PH1060 Physics for Aboriginal Students

The purpose of this course is to provide Aboriginal students with an introduction to the discipline of physics. Topics will be explored from a First Nations’ perspective using a scientific framework. These topics will include: motion, machines/force, and electricity.

PH1100 Physics

This is an introductory physics course designed to extend students’ knowledge and understanding of basic physics principles, concepts and applications related to mechanics. This course also extends abilities in data handling, problem solving and experimentation.

PH1101 Physics

This is a second semester course designed to extend the student’s knowledge and understanding of basic Physics principles, concepts and applications related to kinetic theory, heat, vibrations, sound and light. It also extends abilities in data handling, problem solving and experimentation.

PH1120 Introductory Physics I

Transferable to MUN Physics 1020. This is an introductory course designed to extend students’ knowledge and understanding of the basic concepts, principles and applications of mechanics. Physics I is a college credit course which may be used as a transfer credit in Physics in a Memorial University degree program. Topics covered include kinematics in one and two dimensions, vectors, dynamics, equilibrium, work and energy, and linear momentum.

Prerequisite(s): High School Level III Academic Mathematics with a minimum mark of 70%, or a pass in Advanced Mathematics; or College MAT104 (or MUN Mathematics 1090). MA1104 (MUN Mathematics 1090) may be taken concurrently.

Co-requisite(s): First semester pre-calculus Mathematics.

PH121 Introductory Physics II

Transferable to MUN Physics 1021

Physics II is an introductory level physics course which may be used as a transfer credit course in physics in a Memorial University academic degree program. Topics covered are fluids, vibrations and waves, sound, electric charge and electric field, electric potential and potential energy, electric current, D. C. circuits and instruments, magnetism and geometrical optics.

Prerequisite(s): PH1120 or MUN Physics 1020 and College MAT130 or (MUN Mathematics 1080). MA1130 (MUN Mathematics 1080) may be taken concurrently.

Co-requisite(s): Second semester calculus stream mathematics.

PH130 Physics I

Transferable to MUN Physics 1050. This course is a calculus-based introduction to mechanics. The course emphasizes problem solving. One goal is to extend students’ knowledge and understanding of the basic concepts, principles and applications of mechanics, which underlies so much of science. An equally important goal, however, is to develop methods of learning and problem solving which will be of value in whatever endeavors they ultimately choose to pursue. Physics I is a college course which may be used as a transfer credit course in Physics in a Memorial University degree program. Topics covered include Measurement, Kinematics in one and two Dimensions, Vectors, Laws of Motion, Application of Newton’s Laws, Work and Energy, Momentum, and Static Equilibrium.

Prerequisite(s): Completion of Physics 2204 and Physics 2204 in high school and enrollment in Mathematics 1130 (MUN Mathematics 1001) concurrently.

Co-requisite(s): Mathematics 1130 (MUN Mathematics 1001), which may be taken concurrently.

PH131 Physics I

Transfer to MUN Physics 1051

General Physics I is a Calculus-based Physics course. This course is integrated with the use of computers in a workshop environment. Computers will be used to collect and analyze data on simple physical systems. Physics I (Physics I) introduces mechanics. This course focuses on oscillation, wave motion, optical optics, electricity, and magnetism. This course further develops the processes of logical reasoning and critical thinking as applied to Physics in particular, and Science, in general. General Physics II is a college credit course which may be used as a transfer credit course in Physics in a Memorial University degree program.

Prerequisite(s): PH1130 (MUN Physics 1050) or PH1120 (MUN Physics 1020) with a minimum grade of 65%, and MA1131 (MUN Mathematics 1001). MA1131 (MUN Mathematics 1001) may be taken concurrently.

Co-requisite(s): MA1131 (MUN Mathematics 1001), which may be taken concurrently.

PH200 Physics

This is a second-semester course designed to extend students’ knowledge and understanding of basic physics principles, concepts and applications relating to waves, sound, light, heat and electricity.

Prerequisite(s): PH1100 or PH1120

PH201 Physics

This is an intersession course designed to extend students’ knowledge and understanding of physics principles, concepts and applications relating to electricity and magnetism.

Prerequisite(s): PH200

PH2100 Physics for Aircraft Maintenance

This is an introductory physics course designed to extend the students’ knowledge and understanding of basic physics principles as they apply to an aircraft maintenance environment, and applications related to mechanics. The course also extends abilities in data handling, problem solving and experimentation.

PH2200 Radiation Physics

This is a radiation course designed for medical radiography students; it will give them an understanding of: X-ray physics; the nature of x-rays, the production of x-rays with matter. Radiation dosimetry; radiation exposure, absorbed dose, dose equivalent, effective dose equivalent, detection of radiation and dosimeters.

Prerequisite(s): PH2101

PH3100 Geophysics

Geophysics involves the study of the earth through the application of physics. Geophysics is a broad discipline with applications in mineral exploration, oil and gas exploration, industry and academic research. This course is a basic introduction to geophysical exploration in the oil and gas industry. Topics will center around the major exploration tools – Seismic, magnetics and gravity.

Prerequisite(s): GE2500

PM2120 Drilling Technology I

This is the first of three courses in drilling technology. This course covers all aspects of rig construction and operation and fundamental operations associated with drilling a well for petroleum exploration and production in both onshore and offshore environments.

Prerequisite(s): CF2540, FM2100, GE1501

PM2121 Drilling Technology II

This is the second of three courses in drilling technology. Students apply and build on the skills and knowledge developed in “Introduction to Drilling Technology” to carry out drilling engineering analysis and optimization and well planning.

Prerequisite(s): PM2120

PM2220 Petroleum Production I

An introductory course in Petroleum Production operations introducing the major processes and equipment involved in initiating and maintaining production from a wellbore. The course stresses an interdisciplinary approach to well completion and work over planning by introducing concepts of total quality management. Topics include well completion design for both conventional and horizontal wells, tubular selection including interactions with packers, subsurface control equipment, formation damage, completion and work over fluids, perforating oil and gas wells, scale deposition, prevention and removal treatments, surfactants, acidizing, hydraulic fracturing and work over and completion systems.

Prerequisite(s): PM2500, PM2120

PM2221 Petroleum Production II

A second course in Petroleum Production focusing on the engineering aspects of well production design and operation. This course stresses an interdisciplinary approach to solving production problems by introducing concepts of total quality management.

Prerequisite(s): MA1167, PM2220

PM2320 Reservoir I

A first of two courses designed to provide an introduction to the principles of petroleum reservoir engineering. The first course serves as an introduction allowing the student to master the concepts of basic reservoir engineering theory and application, providing him/her with the knowledge and skills to effectively study more complex problem solving techniques covered in the second course.

Prerequisite(s): MA2210, TD2110

PM2321 Reservoir II

The second course in this subject area builds upon the basic presented in the first offering. The mechanics of fluid flow in a porous media are covered in detail enabling the student to analyze flow problems for a variety of reservoir boundary conditions. The course also deals in significant detail with the analysis of oil and gas well test data, utilizing the methods of pressure build-up testing and type curve matching. The course concludes with the presentation of the unsteady state water influx theories to enable prediction of the amount of water influx into a reservoir.

Prerequisite(s): MA1167, PM2320

PM2400 Logging & Formation Evaluation

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This course explains the requirements and purposes of production logging and relates this activity to overall successful development. The student will develop an understanding of the purpose and operation of the various production logging tools, including specific tools used for measuring flow rate, fluid density and temperature. The presentation aims at developing a full understanding of the operation of the many logging tools, and the ability to read, understand and interpret the production logging data gathered by the various tools.

**Prerequisite(s):** CH2330, GE2500, PH3100

**PM2401 Production Logging & Applications**

This course is in interpretation. It will cover production logging tools and the interpretation of the data obtained from these tools.

**Prerequisite(s):** PM2400

**PM2500 Facilities Engineering**

This course presents the basic concepts and techniques necessary to design, specify and manage oil field processing equipment to separate the produced gas and water from the oil at or near the wellsite.

**Prerequisite(s):** CF2540, PM2100, MA2100

**PM2501 Facilities Engineering**

A course which presents the basic concepts and techniques necessary to design, specify and manage gas processing equipment. Major topics include: heat transfer theory, heat exchangers, hydrates, LTX and indirect fired heaters, condensate stabilization, acid gas treating, gas dehydration, gas processing, compressors, mechanical design of pressure vessels, pressure relief, safety systems and electrical systems overview.

**Prerequisite(s):** PM2500, TD2100

**PM3120 Drilling Technology III**

This is an advanced course in drilling engineering which uses simulation software to perform engineering analysis and optimization, well planning and data management. Students build on and apply the skills and knowledge developed in two previous drilling engineering courses by using simulation software to carry out well planning and drilling engineering analysis and optimization. As a complement to the course labs, students are required to prepare a detailed drilling program and Application for Expenditure (AFE).

**Prerequisite(s):** PM2121

**PM3210 Petroleum Production III**

A third course in Petroleum Production concentrating on artificial lift methods to enable depleting reservoirs to sustain viable production rates.

**Prerequisite(s):** PM2121

**PO1200 Introduction to Industrial Processes**

This course introduces students to the role of chemical processing in industry. The student will obtain an overview of the chemical processes that take place in a variety of industries. They will also examine some of the processes present in the college campus. They will learn to use block, process flow diagrams (PFD) and pipe and instrument diagrams (PID) for college processes.

**Prerequisite(s):** EG1430

**PO2300 Introduction to Separation Processes**

Students will be introduced to the variety of separation processes used in industrial processes. Students will examine in depth separation of two and three-phase fluid systems in both the classroom and the laboratory. Solid-liquid separation, adsorption and ion-exchange processes are investigated in the classroom and laboratory. The application of these processes in industry will be examined. Simulation and laboratory work will be used to teach students the fundamentals of start-up, shut-down and control and troubleshooting of liquid-liquid extractors, ion-exchange units.

**Prerequisite(s):** CL1500

**Co-requisite(s):** CH2450, MH2820

**PO3100 Oil and Gas Processing I**

This course introduces students to the various processes and plants present in an oil refinery. It focuses in depth on distillation as a separation process. Simulations and training units are used to teach principles associated with distillation operations.

**Prerequisite(s):** PO2300, MH2820

**Co-requisite(s):** CH3450

**PO3101 Oil and Gas Processing II**

This course continues the study of processes that are used in the oil and gas industry. The various methods to convert unusable products into commercial products are studied. These include thermal cracking, catalytic cracking, hydrocracking. The processes to remove water and sour gases are studied. Simulation and laboratory work will be used to teach students the fundamentals of safe and correct start-up, shut-down and control and troubleshooting of processes.

**Prerequisite(s):** PO3100

**PR1100 Website Project I**

The Website Project I course provides students with an opportunity to utilize and demonstrate the tools, knowledge, and skills developed during the first year of the program. Students will design and create a multimedia-rich Web site based on a given set of criteria. Emphasis is placed on creativity of design and effective use of technology.

**Prerequisite(s):** CM1401, CP1120, CP3160, CR1510

**PR1101 Website Project II**

The Website Project II course provides students with an opportunity to utilize and demonstrate the tools, knowledge, and skills developed during the second year of the Web Development program. Students will analyze the requirements of a substantial Web development project, and design and create a dynamic Web site which incorporates security, database inter-activity and server-side Web technologies. Emphasis is placed on developing a creatively designed, standards-compliant Web site which meets the business goals of the project requirements.

**Prerequisite(s):** Successful completion of all courses in Semesters 1-5 of the Web Development program

**PR2170 Project Management**

The purpose of this course is to learn various techniques used to ensure that a project is completed on time, within budget, and with high quality. The student will explore various aspects of project management, such as scope, time, cost, quality and communications and will use project management software to manage a project.

**PR2200 Technological Thesis**

The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

This will be STAGE 1 of the technical project which will include: Problem Solving and the Engineering Design Process; Project Identification; Project Analysis; Project Research; Report Preparation; Report Presentation.

**Prerequisite(s):** All courses required prior to Semester 7.

**PR2211 Technological Thesis**

The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

This will be STAGE 2 of the technical project which will include: Problem Solving and the Engineering Design Process; Project Identification; Project Analysis; Project Research; Report Preparation; Report Presentation.

**Prerequisite(s):** All required courses prior to Semester 7.

**PR2221 Major Technical Presentation**

This course is intended to prepare the student for a final presentation of the Major Technical Project begun in the second Technical Intersession. The presentation will consist of both an oral/multi-media component as well as submission of a graphic and written portfolio. The purpose of the course is to enable the student to develop the necessary skills required to prepare a professional product of their work. This course enables the student in their final semester to synthesize the components of the Major Technical Project begun in the second Technical Intersession. Students will be required to define the scope of their presentation/portfolio and to develop a time line ending in a final oral/multi-media presentation of their project. Students will also be required to pursue an area of individual interest that will be highlighted in their final presentation.

**Prerequisite(s):** Successful completion of all courses prior to the commencement of Semester 8.

**PR2250 Capstone Project I (Seminar)**

The capstone project enables the learner completing a Diploma in the Civil Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared independent of study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings.

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

**Prerequisite(s):** All courses in previous academic semesters and minimum cumulative GPA of 2.0

**PR2251 Capstone Project II**

The capstone project enables the learner completing a Diploma in the Civil Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal

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225
The comprehensive project course enables students by a technical instructor and a communications instructor. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

**Prerequisite(s):** PR2270 and all courses in previous academic semesters

**PR2270 Technical Thesis I**
The technical thesis enables the student completing a Diploma in the Geomatics Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the student will have completed a proposal of their technical thesis that will be completed in the following academic semester of their program. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor and a communications instructor.

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0

**PR2271 Technical Thesis II**
The technical thesis enables the student completing a Diploma in the Geomatics Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the student will have completed a proposal of their technical thesis that will be completed in the following academic semester of their program. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the students by a technical instructor and a communications instructor.

**Prerequisite(s):** PR2270

**PR2460 Comprehensive Project**
The comprehensive project course enables students to demonstrate the application of knowledge and skills developed throughout their program of studies. Students taking this course will work in teams on a project, under the supervision of a faculty supervisor, and will perform the following: 1) an in-depth analysis of a problem, 2) a design and implementation of the problem solution; and 3) full documentation and presentation of their solution.

**Prerequisite(s):** CM1950 one of CP4411, CP4260, one of CM2300, CM1401, one of CP2560, CP2130, CP1890

**PR2550 Technical Thesis I**
This course is designed to instruct students in the proper methods of research techniques and report writing. Data collection strategies will be explored; and the planning, organizing, and presenting of information will be emphasized. Students will be required to submit a research proposal that, upon approval, will lead to the development of a technical report.

**Prerequisite(s):** CM1400, CM1401

**PR2551 Technical Thesis II**
This technical thesis project enables the student to demonstrate the application of knowledge and skills developed through the program. Students will learn to plan and execute a series of experiments or investigations in one of the three subject areas of biology, chemical, or environmental engineering. The student will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. Emphasis is on long-term planning, organization of information and equipment, record keeping, and presentation of findings. The communication of results, formally and informally, in writing and orally, is stressed throughout. Students taking this course will work independently on a project under the supervision of a faculty advisor.

**Prerequisite(s):** PR2550

**PR2560 Technical Thesis I**
The technical thesis enables the student completing a Diploma in Electrical Engineering Technology (Power & Controls) Co-op program to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the student will have completed a proposal of their technical thesis that will be completed in the following academic semester of their program. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will be delivered to the students by a technical instructor and a communications instructor.

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0

**PR2561 Technical Thesis II**
The technical thesis enables the student completing a Diploma in Electrical Engineering Technology (Power & Controls) Co-op program to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings.

**Prerequisite(s):** Successful completion of semester 6 & GPA = 2.00

**PR2600 Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

**Prerequisite(s):** PR2560

**PR2610 Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

**Prerequisite(s):** PR2600

**PR2611 Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

**Prerequisite(s):** PR2610

**PR2620 Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

**Prerequisite(s):** Successful completion of semester 6 & GPA = 2.00

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226
PR2630 Technical Thesis
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.
Prerequisite(s): Successful completion of semester S & GPA = 2.00.

PR2631 Technical Thesis
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.
Prerequisite(s): PR2630

PR2632 Technical Thesis
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological applications, and fully document and present their findings.
Prerequisite(s): PR2632

PR2640 Technical Thesis I
The technological thesis enables the student completing a Diploma Program in Engineering Technology to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. At the end of this course, the student will have completed a proposal of their technical thesis that will be completed in the following academic semester of their program. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will be co-delivered to the students by a technical instructor and a communications instructor.
Prerequisite(s): All courses in previous academic semesters and a minimum cumulative GPA of 2.0
Co-requisite(s): PR3150

PR2641 Technical Thesis II
The technological thesis enables the student completing a Diploma Program in Engineering Technology to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in terms of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will work independently on a project, under the supervision of a faculty supervisor. Students will select project topics, in consultation with instructors and industry contacts. Students will carry out an in-depth study of a problem, design, or technological application, and fully document and present their findings. The technical thesis development process includes Problem Solving and the Engineering Design Process, Project Identification, Project Analysis, Project Research, Report Preparation and Report Presentation.
Prerequisite(s): Successful completion of all courses scheduled before the last term

PR2650 Technological Thesis
The technological thesis enables the student completing a Diploma in the Electrical Engineering Technology (General) program to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.
Prerequisite(s): All courses in previous academic semesters

PR2651 Technological Thesis
The technological thesis enables the student completing a Diploma in the Electrical Engineering Technology (General) program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.
Prerequisite(s): PR2650 and all courses in previous academic semesters

PR2660 Technical Project and Presentation
This technical thesis project enables the student to demonstrate the application of knowledge and skills developed throughout the program. Students will learn to plan and execute a series of experiments or investigations in a subject area related to the field of study. The student will carry out an in-depth study of a problem, design, or technological application, and fully document and present his/her findings. Emphasis is on long-term planning, organization of information and equipment, record keeping, and presentation of findings. The communication of results, formally and informally, in writing and orally, is stressed throughout. Students taking this course will work independently on a project under the supervision of a faculty supervisor.
Prerequisite(s): CM1401

PR26680 Technological Thesis
The technological thesis enables the student completing a Diploma Program in Engineering Technology to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. Students will select project topics, in consultation with instructors and industry contacts. Students will carry out an in-depth study of a problem, design, or technological application, and fully document and present their findings. The technical thesis development process includes Problem Solving and the Engineering Design Process, Project Identification, Project Analysis, Project Research, Report Preparation and Report Presentation.
Prerequisite(s): PR2690 and all courses in previous academic semesters

PR2641 Capstone Project II
The capstone project enables the learner completing a Diploma in the Telecommunications Engineering Technology (co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.
Prerequisite(s): All courses in previous academic semesters and a minimum cumulative GPA of 2.0

PR2691 Capstone Project II (Seminar)
The capstone project enables the learner completing a Diploma in the Telecommunications Engineering Technology (co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.
Prerequisite(s): All courses in previous academic semesters and a minimum cumulative GPA of 2.0

PR2700 Project Management
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This course is designed to give the students a general understanding of project management and the various stages of a project. The main topics will be discussed at an informational level. Topics discussed include, but are not limited to: defining a project, project scope, time management, cost management, quality management, human resource management, communications management and risk management.  

**PR2721 Technological Thesis**  
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program.  

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. 

This course will be co-delivered to the learner by a technical instructor and a communications instructor.  

**Prerequisite(s):** All courses in the previous academic semesters and a minimum cumulative GPA of 2.0

**PR2730 Capstone Project I**  
The capstone project enables the learner completing a Diploma in the Electrical Engineering Technology (Industrial Controls) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. 

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings.  

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.  

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0  

**PR2731 Capstone Project II**  
The capstone project enables the learner completing a Diploma in the Architectural Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. 

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings.  

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.  

**Prerequisite(s):** PR2740 and all courses in previous academic semesters

**PR2740 Capstone Project I (Seminar)**  
The capstone project enables the learner completing a Diploma in the Instrumentation Controls Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. 

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. 

This course will be co-delivered to the students by a technical instructor and a communications instructor.  

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0

**PR2751 Capstone Project II**  
The capstone project enables the learner completing a Diploma in the Architectural Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application and fully document and present their findings. 

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. 

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.  

**Prerequisite(s):** PR2750 and all courses in previous academic semesters

**PR2760 Capstone Project I (Seminar)**  
The capstone project enables the learner completing a Diploma in the Computing Systems Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. 

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. 

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.  

**Prerequisite(s):** All courses in previous academic semesters and minimum cumulative GPA of 2.0

**PR2761 Capstone Project II**  
The capstone project enables the learner completing a Diploma in the Computing Systems Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. 

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a fac-
ulty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings.

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): PR2760 and all courses in previous academic semesters

PR3150 Project Management and Financial Analysis

This course introduces learners to the topics of project management and financial analysis, by the introduction of the concepts, tools and techniques of formal project management and financial analysis. Topics include: project management, risk management, project scheduling, concepts of financial management, economic decision making analysis of alternatives, and/or prioritization. Learners are introduced to the use of project management software.

Prerequisite(s): MA1101

PR3600 Technical Thesis (Seminar)

The technological thesis enables the student completing a diploma in the Industrial Engineering Technology (Co-op) program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and then orally present their findings. Projects must address the social, economic, financial, environmental, legal and ethical considerations where relevant.

Prerequisite(s): Semester 7 complete and GPA of 2.0

PR3630 Technical Thesis (Seminar)

The technological thesis enables the student completing a diploma in the Mechanical Engineering Technology (Manufacturing) Co-op program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and then orally present their findings. Projects must address the social, economic, financial, environmental, legal and ethical considerations where relevant.

Prerequisite(s): Semester 7 complete and GPA of 2.0

PR3722 Technical Thesis

The technical thesis enables the student completing a Diploma in the Mechanical Engineering Technology (Co-op) program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and then orally present their findings. Projects must address the social, economic, financial, environmental, legal and ethical considerations where relevant.

Prerequisite(s): CM1401

PR3724 Technical Thesis

The technical thesis enables the student completing a Diploma in the Mechanical Engineering Technology (Manufacturing) Co-op program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and then orally present their findings. Projects must address the social, economic, financial, environmental, legal and ethical considerations where relevant.

Prerequisite(s): CM1401

PR3725 Technical Thesis

The technical thesis enables the student completing a Diploma in the Industrial Engineering Technology (Co-op) program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and then orally present their findings. Projects must address the social, economic, financial, environmental, legal and ethical considerations where relevant.

Prerequisite(s): CM1401

PS1100 Psychology I

This is an introductory psychology course. Current experimentation and the various methods of psychological research are emphasized throughout the course. The topics to be covered include: (1) psychol¬ogy as a science, (2) learning, (3) perception, (4) sensation, (5) personality, and (6) human development.

Prerequisite(s): PS3600

PS1110 Psychology II

This is an introductory psychology course. Current experimentation and the various methods of psychological research are emphasized throughout the course. The topics to be covered include: (i) stress and adjust¬ment, (ii) language and thought, (iii) intelligence and psycholog¬ical testing, (iv) motivation and emotion, (v) social psychology, (vi) and psychopathology.

PS1110 Psychology II

This is an introductory psychology course. Current experimentation and the various methods of psychological research are emphasized throughout the course. The topics to be covered include: (1) psychology as a science, (2) learning, (3) perception, (4) sensation, (5) personality, and (6) human development.

PS11120 Psychology I

This is an introductory psychology course. Current experimentation in the field and various methods of psychological research are emphasized throughout the course. This course introduces the student to topics such as psychology as a science, brain and behavior, human development, sensation and perception of stimuli, states of consciousness, learning and memory.

PS11121 Psychology II

This is the second part, and hence a continuation of the introductory psychology course. The course introduces students to psychological theory and research in the areas of cognition, intelligence and creativity, human emotion, motivation, stress and its impact on health, personality, psychological disorders and their treatments, and social psychology.

Prerequisite(s): PS1120

PS11150 Introduction to Psychology I

This course introduces students to psychological theory and research in the areas of neuroscience, human development, learning and memory, sensation and perception of stimuli, and different states of consciousness.

PS1151 Introduction to Psychology II

Transferable to MUN Psychology 1001. This course introduces the student to psychological theory and research in the areas of human cognition and emotion, motivation, personality, psychological disorders and treatment, social psychology, health and stress, and sexuality.

Prerequisite(s): PS1150 or MUN Psychology 1000.

PS1200 Drugs & Behaviour

This course examines the relationship between drugs, especially psychoactive substances, and their influence on behaviour. Basic concepts and terminology pertaining to substance abuse will be defined. Emphasis will be placed on theories of dependency, pharmacological concepts, major drug classifications, prevention, and treatment paradigms.

Prerequisite(s): PS1121

PS1240 Understanding Addictions

This course takes a detailed look at how alcohol and/or drug addiction affects an individual. First, it examines the nature of dependency on a physical, psychological, and emotional level. This information will then be utilized to teach students basic assessment, intervention, and counseling techniques. Students will also receive a detailed understanding of the process of change, relapse prevention, and stages of recovery in addiction. They will also learn how addiction impacts upon a family. Students will also acquire more knowledge on how addiction affects specific populations, (youth, women, seniors, Aboriginal persons, and adult children of alcohol/drug users).

Prerequisite(s): PS1121, PS1200

PS1330 Organizational Behaviour

This course is designed to provide an understanding of the basic principles underlying workplace behaviour with particular emphasis on the applications for effective supervision in the contemporary workplace.

PS1360 Behaviour Management

This course covers the principles and practice of behaviour modification. These principles are viewed as tools to facilitate the understanding, analysis, and modification of targeted behavior(s) of any individual, including individuals with development disabilities.

Prerequisite(s): PS1121

PS1400 Health Care Organization and Structure

This course is an introduction to the study of organizational behaviour and structure within the health care system. Students will familiarize themselves with their health care system, specifically the roles that directly impact structure and function. Students will examine individual and inter-disciplinary relationships and roles of health professions within the hospital organizational structure.

PS1420 Health Care Organization and Structure

This course is an introduction to the study of organizational behaviour and structure within the health care system. Students will familiarize themselves with their health care system, specifically the roles that directly impact structure and function. Students will examine individual and inter-disciplinary relationships and roles of health professions within the hospital organizational structure.

PS2200 Developmental Psychology

Available through Distributed Learning

Available through correspondence
This course familiarizes students with basic concepts, principles, and theories of human development and examines each stage of development from conception to adolescence.

Prerequisite(s): PS1121

PS2220 Developmental Psychology §
This course will explore human development at different periods of the lifespan, including both physical and psychological growth. It will provide a perspective on the many changes that occur during a person’s life, and examine reasons for developmental change or disturbance.

PS2340 Organizational Behaviour §
This course is an introduction to the study and practical application of organizational behaviour. It concerns itself with the behaviour of people within organizations to achieve both personal and organizational goals.

PT1110 Reciprocating Engine Fundamentals (M)
This M course will provide learners with the basic knowledge of the operation of aircraft reciprocating engines and engine components. Learners will perform engine ground-runs and basic aircraft servicing.

Prerequisite(s): GM1120, GM1130
Co-requisite(s): PT1115

PT1115 Reciprocating Engine Fundamentals (M, E)
This M and E course will provide learners with the basic knowledge of the design, construction and theory of operations of aircraft reciprocating engines.

Prerequisite(s): GM1120, GM1130
Co-requisite(s): PT1110

PT2120 Reciprocating Engine Systems (M)
This M course will provide the learner with the knowledge of reciprocating engine internal systems, their design, construction, operation, and maintenance.

Prerequisite(s): PT1115, AS2520

PT2121 Reciprocating Engine Overhaul (M)
This M course will provide the learner with the knowledge of reciprocating engine inspection removal, installation, overhaul and maintenance procedures, so that h/she can develop sound maintenance practices.

Prerequisite(s): PT1210

PT2210 Turbine Engine Maintenance (M, E)
This M and E course is designed to provide the learner with a comprehensive knowledge of turbine engine design and operation. Learners will be dismantling a turbine engine and required to identify each component.

Prerequisite(s): GM1120, GM1130

PT2240 Turbine Engine Systems (M)
This M course will provide the learner with a detailed description of turbine engine systems and their installations. Particular attention is paid to the lubrication and fuel control systems of the Pratt and Whitney PT6 and Allison 250 engines. Helicopter application of turbine engines is also discussed in detail.

Prerequisite(s): PT2210

PW1100 Power Engineering Mathematics
This course will provide the learner with information enabling them to describe the overall industrial background and certification system for Power Engineering. The course will introduce basic math, general mathematical concepts, and the process to enable trades persons to function in the institutional setting by developing numeracy skills required for technical courses. The course also provides foundation for experimental learning through knowledge of math relating to on-the-job skills and practices.

PW1110 Power Engineering Science
This course will provide the learner with an introduction to basic science is sequentially designed to provide a strong base from which to build upon in the power engineer field. This course covers principles in mechanics, physics, math, and problem solving to ensure the learner can see relevance in the applied principles of Power Engineering. This course is a critical building block for enable learners to interpret findings and evaluate specific conditions in the power engineering field.

PW1120 Introduction to Industrial Drawings
This course will introduce the learner the concept of sketching centre lines and dimensioning standard object views, sketching techniques and sectioning. This course also provides a practical exercise that enables the learner to employ the learned concepts by completing applied drawings.

PW1130 Introduction to Communication Skills
This course will give the learners an opportunity to improve sentence structure for clarity, concrete language, conciseness, correctness, punctuation, paragraph structure, unity, coherence and development. It will also introduce memo writing, content, format and planning. This course will enable learner to increase their skills in effective communication and apply those skills to different power engineering legislations.

PW1140 Work Safety and the Environment
This course will introduce power engineering learners to the aspects of health and safety factors that are required for students to work in the industrial environments as a Power Engineer. This course will expose learners to WHMIS (Workplace Hazardous Material Information System), PPE (Personal Protective Equipment), Confined space entry, First Aid, Basic fire extinguishing, proper handling/handling of dangerous gases and fluids. This course will also allow the learner to become aware of environmental protection techniques.

PW1200 Power Engineering Maintenance I
This course is designed to provide learners with the understanding of the concepts and requirements for identification for various mechanical, ferrous, and non-ferrous engineering materials. It also provides learners an introduction to basic welding methodology, terms and flaws. This course will also expose learners to standard piping, fittings, and valves relating steam plant operations.

PW1210 Power Engineering Operations
This course is intended to introduce the concepts relating to high pressure and low pressure boiler systems relating to their design, operation, and safety using the ASME (American Society Mechanical Engineers) requirements. This course will also describe the processes in boiler start up and shut down. This course provides the learner diagnostic information pertaining to closed and open loop water contamination courses and repairs.

PW1220 Power Engineering Operation Equipment
This course will give learners information for the critical elements of equipment relating to power plant operations. Specifically it serves to provide the learner with information relating to various types of steam or gasoline engines and turbines. It presents the various types of power plant pumps, their maintenance. It introduces the concepts of air compression, lubrication principles, and bearing lubrication.

PW1300 Electrical Principles
This course introduces the concepts of electricity and magnetism. Learners will engage in practical exercises using metering devices that apply these basic electrical concepts as it relates to power plant operations. This course will also serve to introduce motors, generators, transformers, and circuits along with their descriptions and operation.

PW1310 Power Engineering Controls and Instrumentation
This course provides learners with an understanding of the control loops along with the details and reasoning why the components are in that loop. It introduces the concepts relating to boiler protection devices, programming, troubleshooting, and computer controlled boiler systems.

PW1320 Power Engineering Heating Boilers and Systems
This course is designed to introduce learners to the identification various boiler systems, their construction, application, and diagnostics. This course also discusses reasoning for specific boiler fitting design, steam heating, hot water, warm air, infrared, and steam boiler operations. It introduces the learner to various designs in boiler feed water, pneumatic, electrical, electronic controls. It also introduces the reasoning for ventilation and various air filtration systems.

PW1400 Auxiliary Systems
This course is intended to enable learners to become aware of auxiliary systems that may be affected by any closed or open boiler system. It discusses the design, methods, and requirements that may have an effect on the interrelationship of the lighting, water supply and sanitary drainage systems.

PW1410 Power Engineering & Refrigeration Systems
This course is intended to provide learners with information regarding various types of refrigeration systems as it pertains to thermodynamics, types of refrigerant, compressions systems, compressors and heat exchangers. It also provides clear definition of meter systems, controls, and accessories. It discusses the start up procedures, and operations of compressions systems. It also discusses absorption systems and operation as it relates to refrigeration.

PW1420 Power Engineering & Air Conditioning Systems
This course is intended to provide learners with detailed descriptions of the application of air conditioning systems, control, and recovery related to power plant operation. It provides a comprehensive description of air, its distribution, and ducts systems. It also introduces the learner to coil types and operation, along with heat gain and loss.

PW1430 Power Engineering Maintenance II
This course introduces learners to the purpose of lubrication, along with its classes and properties. This course is intended to enable learners to become aware of the procedures for plant maintenance as it pertains to bearing lubrication, general shop procedures, tools and equipment. This course also describes the general boiler maintenance and cleaning procedures.

PW1440 Power Engineering and Industrial Applications
This course is designed to give learners the description, layout and operation of hot oil systems and
the role it plays in industrial steam plant operation. It also provides learners with the exposure to the processes that occur in pulp mills, gas plants, food processing, and sawmills. These processes are discovered through a combination of in class theory and planned site visits.

PY1100 Introduction to Photography I
This course introduces students to basic photographic techniques, teaching the use of the 35 mm camera as a tool for expression. It also teaches the fundamentals of black and white film processing and printmaking. In this course students will learn to expose a composed, focused image on film and print the image on paper with the tonal qualities of the existing scene. Students will also be exposed to digital photography and will learn to convert black and white negatives to digital format for storage and printing.

PY1100 Introduction to Photography II
In this course students continue to improve and refine the skills and concepts acquired in Introduction to Photography I. Emphasis is on print quality, photo composition and using the camera for effective personal expression. Use of the digital camera and other means of inputting images into a computer for digital image manipulation as a means of effective personal expression are also explored.

PY1200 Photography I
Students will be introduced to the basic principles and mechanics of digital photography as applied to the graphics industry.

PY1200 Photography II
Students will be introduced to various photographic techniques as applied to the graphics industry. 

PY1320 Photojournalism I
In this course, students will learn basic photographic principles and techniques. They will learn how to use digital cameras and how to perform basic image editing functions using industry-standard digital image editing software.

PY1321 Photojournalism II
Building upon the technical foundation acquired in Photojournalism I, students will learn the principles of news and feature photography.

PY2200 Photography III
Students will learn the importance of the well crafted photographic image as it is used in the graphics industry. Consideration of the photographic image as a key element of an overall design, and specifically as a design anchor point, will be especially emphasized.

PY2201 Photography IV
Students will have an opportunity to complete an independent learning project. Working in consultation with their instructor, students will identify a project concept, develop a project plan, complete design research, develop a project design incorporating advanced photographic techniques, and implement the project.

RM1100 Introduction to Natural Resources Management
This course is designed to introduce the student to a number of important ideas and issues in natural resources conservation and management. It includes information on the philosophy and principles of natural resources management, the consumptive and non-consumptive use of natural resources, international management models, sustainable development and socio-economic issues.

RM1200 Natural Resources Management Methods I
This course requires the use of field and laboratory equipment, and a suitable environment. It involves the collection, handling, identification and preservation of specimens, recording and analysis of data. It includes information on inventory and monitoring methods and the identification of flora and fauna.

Prerequisite(s): RM1300

RM1201 Natural Resource Management Methods II
This course requires the use of field and laboratory equipment, and a suitable environment. It involves the collection, handling, identification and preservation of specimens, recording and analysis of data. It includes information on inventory and monitoring methods and the identification of flora and fauna.

Prerequisite(s): RM1300, GE1120

RM1300 Fish and Wildlife Management Methods I
This course requires the use of field and laboratory equipment, and a suitable environment. It involves determining the age, sex, size and maturity of fish and wildlife, the collection and preservation of biological samples. It includes information on animal care, anatomy, physiology, aging techniques, sexing techniques, age scales/indices, preservatives, collecting methods, species identification and safety precautions.

Prerequisite(s): BL1120

RM1301 Fish and Wildlife Management Methods II
This course requires the use of traps, firearms, immobilizing and laboratory equipment, and a suitable environment. It involves controlling nuisance wildlife, immobilizing, capturing and monitoring fish and wildlife, and collecting biological data. It includes information on types of wildlife damage, animal diseases and parasites, tranquilizer drugs and animal care techniques.

Prerequisite(s): BL1400, BL1200

RM1400 Wildlife Techniques I
This course will expose students to the various techniques used in wildlife research and management. This course provides theoretical and practical training of mammal and bird capture techniques, handling and tagging, chemical immobilization and radio / biotelemetry techniques.

Prerequisite(s): BL1400

RM1401 Wildlife Techniques II
This course investigates methods to determine sex, age, size and maturity of mammals and birds. Current techniques used to inventory and monitor mammal and bird populations will be studied.

Prerequisite(s): BL1400

RM1500 Fisheries Techniques I
This course will expose students to the various techniques used in fisheries research and management. This course provides theoretical and practical training of fish capture techniques, handling and tagging, chemical immobilization and radio / biotelemetry techniques.

Prerequisite(s): BL1400

RM1501 Fisheries Techniques II
This course investigates methods to determine sex, age, size and maturity of fish. Current techniques used to inventory and monitor fish populations will be studied.

Prerequisite(s): BL1400

RM2200 Habitat Assessment
Identify and classify fish and wildlife habitats.

Prerequisite(s): FR1330

RM2300 Fish and Wildlife Management Methods III
This course requires the use of field and laboratory equipment, and a suitable environment. It involves determining the cause of death of fish and wildlife, the collection and preservation of biological samples, analysis of diet and the identification of parasites and weeds.
diseases. It includes information on anatomy, necropsy techniques, parasites, diseases, preservatives, collecting methods, species identification and safety precautions.

**Prerequisite(s):** BL1400

**RM2400 Habitat Management**

This course requires the use of field and laboratory equipment, monitoring equipment and a suitable environment. It involves assessing habitat quality, habitat enhancement and reclamation and habitat protection techniques. It includes information on inventory and monitoring methods, identification of flora and fauna, identification of landforms, water quality, hydrology, ecological relationships, environmental protection standards, protected areas, preventative procedures, pollution and habitat destruction.

**Prerequisite(s):** RM1200

**Co-requisite(s):** RM1201

**RM2410 Wildlife Techniques III**

This course is designed to train individuals in field and laboratory techniques used in wildlife research and management. It involves determining the cause of death of mammals and birds, the collection and preservation of biological samples, analysis of diet and the identification of parasites and diseases. It includes information on anatomy, necropsy techniques, parasites, diseases, preservatives, collecting methods, species identification and safety precautions.

**Prerequisite(s):** BL1400

**RM2420 Habitat Management**

This course involves management including habitat enhancement, reclamation, and protection techniques.

**Prerequisite(s):** RM2200

**RM2500 Fisheries Techniques III**

This course is designed to train individuals in field and laboratory techniques used in fisheries research and management. It involves determining the cause of death of fish, the collection and preservation of biological samples, analysis of diet and the identification of parasites and diseases. It includes information on anatomy, necropsy techniques, parasites, diseases, preservatives, collecting methods, species identification and safety precautions.

**Prerequisite(s):** BL1400

**RP1100 Introduction to Records Management**

This course is designed to introduce students to the records and information management discipline. The topics covered will make students aware of the history and role of records management, career opportunities, and professional associations. Students will study the life cycle of records, records inventory procedures, records appraisal, records retention principles, the use/function of records manuals, and current trends in the discipline.

**RP1101 Management and Control of Records**

This course is designed to further explore the records and information management discipline. The topics covered will further develop the student’s ability to manage all types of documents. Students will also be introduced to records control, quality control and improvement.

**RP1200 Archives Principles**

This course introduces students to the study of archival storage. Archives will be examined from their evolution to their current role/function. Students will examine archival principles, procedures and career opportunities in the discipline.

**RP1300 Active, Semi-active and Inactive Records**

This course involves a detailed examination of active, semi-active and inactive records. Students examine each group of records in terms of storage, maintenance, and retrieval procedures; supplies and equipment are examined in terms of suitability and cost. Records destruction policies and procedures are examined.

**RP1400 Information Security and Procedures**

This course is designed to teach students the fundamentals of information security and procedures. The topics covered will make students aware of the legislation and litigation procedures involved with information security. Students will study retention requirements, the need for security, and the classification of vital records, as well as disaster prevention and recovery and the use/function of manuals.

**RP2200 Classification Systems**

This course is designed to teach students the fundamentals of classification systems using a simulation approach. The topics covered will make students aware of the different types of classification systems and show them how to select one that is appropriate for a particular group of records; they will be given an opportunity to work on projects involving these various systems.

**RS1100 Introduction to Community Recreation Leadership**

This course introduces students to the community recreation delivery system. The importance of dynamic leadership in the recreational delivery process will be emphasized. Students will analyze a variety of settings and populations for which recreation programming and services are offered.

**RS1230 Creative Activities**

This course introduces students to basic materials, supplies, and methods necessary to conduct creative activity programs. These activities may be used in a variety of recreation programs such as boys' and girls' clubs, long term care facilities, rehabilitation centres, hospitals, guiding/scouting groups, and community recreation centres.

**RS1240 Recreation Activities III**

This course is designed to expose the students to a variety of recreational related activities to create a better understanding of the student’s role in recreation service programming and the importance of recreation as a regular component of active living. Students will participate, plan, lead and evaluate recreation activities such as walking, hiking, gardening and board/card games. Students will establish baseline step count for daily activity with the use of a pedometer. The opportunity for students to attain certification in the 3M National Coaching Certification Program will be provided.

**RS1250 Recreation Activities I**

This course is designed to provide exposure as well as develop leadership skills in a variety of recreation activities. Students will review various topics including the place of sport in society, the role of all levels of government in administering sport, safety in recreation activities, and the history of indoor/outdoor recreation activities. Students will be introduced to the methods of scheduling teams and individual sports competitions. A variety of outdoor recreational activities will be introduced including cross-country skiing, snowshoeing, and winter camping.

**RS1280 Program Planning**

This course is an introduction to the programming process required to produce quality recreation programs. Students will be provided with an overview of program planning and the human life stages to aid in understanding the resources required to provide programming. Students will learn about the six steps of the program planning process including needs assessment, and program objectives, solutions, design, implementation, and evaluation.

**RS1320 Recreation Administration**

This course is a study of the administrative and organizational procedures used in the management systems of community and volunteer recreation agencies. Students will study the history of recreation and recreation management; recreation organization and management; recreation delivery system; fundraising; grants and proposal writing; and financial management.

**RS1360 Outdoor Winter Recreation**

A variety of outdoor recreational activities will be introduced including cross-country skiing and snowshoeing as well as an introduction to Canada’s Physical Fitness Guide to Healthy Living. Safety and injury prevention will be discussed through developing an awareness of preventative techniques and preparation to avoid injuries. Students will acquire theoretical knowledge and personal skills in classic techniques, snowshoeing, and hill maneuvers. Equipment requirements and selection, sizing, care and waxing will also be discussed.

**RS1370 Recreation Activities II**

This course is a study of the principles of effective outdoor leadership and the application of those principles to selected outdoor experiences. The potential of tourism, adventure tourism, and ecotourism in Newfoundland and Labrador will be examined with a focus on leadership skills and group dynamics. Students will gain exposure to a variety of outdoor recreation activities and will be provided with the knowledge and skills to assist them in developing programs for children, youth, adults, and older adults.

**RS1380 Program Planning**

This course introduces students to the theory and practice of the planning, design, operation, and management of recreational facilities. As well, the student will become aware of the general trends in recreation which influence the design and management of selected facilities.

**RS1400 Community Agencies**

This is a seminar based course in which students study of local organizations involved in providing community and recreation services in Newfoundland and Labrador. Students will conduct research on organizations and present this research through formal presentations and papers.

**RS1440 Recreation Facilities**

This course introduces the student to the theory and practice of the planning, design, operation, and management of recreational facilities. As well, the student will become aware of the general trends in recreation which influence the design and management of selected facilities.

**RS1450 Introduction to Therapeutic Recreation**

This course introduces the student to the field of therapeutic recreation. The course addresses the provision of recreational services to individuals who face specific challenges.

**RS1460 Recreation Programming for the Older Adult**

This course examines the physical, cognitive and emotional changes that occur as an individual ages. Characteristics of aging and disorders associated with aging will be examined. Students are provided with
Successful completion of semester 4
ventilators, preoperative procedures, monitoring the machines, vaporizers, breathing circuits, anesthetic therapist. Major course topics include anesthesia
RT2310 Anesthesia
Successful completion of semester 3
RT2451 Neonatal/Pediatric Respiratory Care I
This course introduces the student to the anatomical and physiological differences of the neonate and the clinical management of these patients. Major areas of study are gestational lung development; fetal-neonatal transition; newborn assessment; thermoregulation; neonatal cardipulmonary pathophysiology, neonatal ventilation.
Prerequisite(s): Successful completion of semester 3
RT2452 Neonatal/Pediatric Respiratory Care II
This course introduces the student the clinical management of the pediatric patient. Major areas of study are neonatal resuscitation (NRP), pediatric advanced life support (PALS), pediatric cardiopulmonary pathophysiology, pediatric mechanical ventilation, high frequency ventilation. Formal certification for NRP and PALS is not granted at the end of this course.
Prerequisite(s): Successful completion of semester 4
Co-requisite(s): RT2220
RT2500 Cardiopulmonary Diagnostics
This is a detailed course in the principles of pulmonary function testing and the significance of the various test data to the respiratory therapist. Basic electrocardiography with respect to recognition of standard arrhythmias from 3 and 12 lead ECG strips, clinical significance, and basic treatment of arrhythmias is also studied.
Prerequisite(s): Successful completion of semester 5
RT3401 Comprehensive Respiratory Care
This course is designed to assist the student with the integration of knowledge obtained in the previous semester’s necessary for respiratory therapy. Through problem-based learning and critical thinking skills the student will focus on the therapeutic management of various categories of patients, including the principles of trauma life support and venipuncture.
Prerequisite(s): Successful completion of semester 5
RT3450 Clinical Skills II
This course is a continuation of Clinical Skills I and Clinical Skills II. As with the previous clinical courses, students will have the opportunity to demonstrate respiratory therapy procedures under direct supervision. Students will be expected to expand their knowledge and comprehension of respiratory therapy procedures in keeping with didactic theory and laboratory skills previous taught. Along with new clinical performance skills, students will be expected to demonstrate and refine clinical performance skills evaluated in Clinical Skills I and Clinical Skills II.
Students may be given the opportunity to observe and/or participate in higher order skills as available in the clinical setting. Students will rotate through adult and pediatric clinical placements.
Prerequisite(s): Successful completion of 5th semester
Co-requisite(s): All 6th semester courses
RT3510 Clinical Practicum I
This clinical practicum is designed to provide the third year respiratory student the opportunity to rotate through various health care sites further acquiring and refining clinical skills in many different areas of adult, pediatric, and neonatal respiratory care. Because this course is the second clinical course for the third year respiratory therapy student, students are expected to refine the competencies and increase the proficiencies developed in the various clinical areas introduced in RT3510.
Prerequisite(s): RT3510
RT3530 Clinical Practicum Elective
After successful completion of Clinical Practicums I and II, students will have an additional 7 weeks of training to gain clinical experience in respiratory care. Students will have the opportunity to return to a specific clinical area for further review or be assigned to a clinical area by clinical faculty. Students will be afforded the opportunity to complete a home care/community component as well as have the option of carrying out a portion of this clinical placement at a rural hospital site. Overall, this elective will give students additional clinical/didactic review prior to writing the national certification exam.
Prerequisite(s): RT1610, RT3510, RT3520

Available through Distributed Learning

Available through correspondence
work will concentrate on more complex structural integrations, particularly as applied to roof frames. Learners will be introduced to the concepts of challenges associated with unique building structure designs.

Prerequisite(s): RV1160

RV1170 Basement Renovation

This course will focus on basement renovation techniques and unique situations and solutions when renovating basements. Learners will obtain an understanding through practical application of the presented topics by performing a simulated or complete basement renovation.

Prerequisite(s): AJ1111, AJ1160

RV1200 Green Renovating

This course will enable the learner to apply good practices of energy conversation, waste management, environmental impact, and indoor air quality management to projects. The learner will gain practical experience through performing a green building practical lab on residential or commercial structure.

Prerequisite(s): AJ1111, RV1160

RV1230 Project Manager I

The learner will become familiar with the concepts of project organization, time management, materials takeoff and estimating for construction projects. Learners will perform practical projects that apply the concepts of management of a project.

Prerequisite(s): AJ1111, RV1160

RV1231 Project Manager II

The learner will apply skills acquired in RV1230 - Project Manager I to produce a complete project plan, required specifications, match the working drawings, create the materials take-off and labor estimate for a project.

Prerequisite(s): RV1230

RV1250 Renovator’s Basic Plumbing

This course will introduce the learners to the basics of residential plumbing systems and how to organize them with the renovation project. Learners will perform practical exercise to complete associated renovation plumbing tasks.

Prerequisite(s): AJ1111, RV1160

RV1260 Renovator’s Basic Electrical

This course will introduce the learners to the basics of electrical AC and DC theory as it relates to residential wiring systems, how to enable to identify the materials and tools so they can identify how they can interact with the certified electrical professional is required during a renovation project.

Prerequisite(s): AJ1111

RV1270 Renovator’s Basic HVAC

The learner will be introduced to principles and concepts of equipment, design and operation of Heating, Ventilating and Air Conditioning (HVAC) systems and components as they relate to residential and light commercial building applications. Practical exercises in heat load calculations, HVAC controls, use of testing instruments, and air balancing will utilized to enhance the student’s ability to apply the concepts.

Prerequisite(s): AJ1111

RV1300 Residential Estimating II

In this course, the learner will apply knowledge gained from completing AJ1170 - Residential Estimating to construction drawings and situations. All calculations and layouts are to be quality checked using the Canadian Building Code.

Prerequisite(s): AJ1170

RV1320 Foundation Systems

The learners will develop an understanding of the numerous components and associated installation practices that combine to produce typical residential and light commercial concrete foundations and structures. Several residential forming systems, as well as ICF, will be studied in detail. Practical assignments and activities will support the delivery of this subject matter.

Prerequisite(s): AJ1111, AJ1160

RV1340 Cabinet Layout and Design

This course will enable the learner to summarize requirements for cabinetry design, site preparation, and installation techniques. Learners will be introduced to both new home and renovation cabinet installation procedures. Learners will receive in class instruction and also have the opportunity to practice and apply the lessons through practical activities.

Prerequisite(s): AJ1111, RV1160

RV1350 Flooring

Learners will gain an understanding of different types of flooring installation and removal procedures. Topics to be covered include underlayment, resilient tile, wood floors, laminate floors, engineered plywood floors, ceramic, porcelain tile, stone, resilient, and cement floors installation and removal procedures. Additional topics include site preparation, demolition, moisture monitoring, and estimation. Learners will complete practicals in the installation and removal of floors and floor finishes.

Prerequisite(s): AJ1111, AJ1170

RV1360 Special Trims

Learners will gain an understanding of numerous types of interior trims and finishes. Topics to be covered include interior plastering and wall finishes/drywall, moldings, and painting/wood finishing. Learners will complete practicals in the installation and removal of trims, plastering, priming and painting.

Prerequisite(s): AJ1111, AJ1170

RV1400 Demolition and Waste Management

This course will provide the learner with a basic understanding of demolition and disposal practices. Recognizing hazardous materials will be emphasized in this course. Safe work practices will be emphasized to reduce the risk of accidents and injuries during demolition work. The need for proper waste diversion strategies will also be tabled during the course.

Prerequisite(s): AJ1111

RW3140 Rotary Wing Aircraft (M)

This M course is to introduce the learner to the helicopter and the helicopter industry. Its aim is to provide learners with knowledge of helicopter fundamentals, theory of flight and the different main rotor systems. This is to enable learners to perform maintenance functions on a helicopter main rotor and associated systems.

Prerequisite(s): GM1120, GM1130

RW3141 Rotary Wing Aircraft Systems (M)

This M course is to provide the learners with knowledge of the basic systems found on a helicopter. This will enable the learner to perform maintenance inspections and repairs on the complete aircraft.

Prerequisite(s): RW3140

SC1120 Introduction to Sociology

This is the first of two introductory courses in sociology. Students are introduced to the various methods and perspectives common in sociology. They then apply these methods and perspectives to the study of several issues related to contemporary Canadian society.

SC1121 NL Society and Culture

This is the second of two introductory courses in sociology. Students use sociological methods and perspectives to examine aspects of Newfoundland and Labrador society and culture.

SC1150 Principles of Sociology

Transferable to MUN Sociology 1000. Sociology 1150 is an introduction to the concepts, principles and topics of sociology. The theoretical foundations of modern sociology are examined through the works of such social theorists as Karl Marx, Emile Durkheim and Max Weber, in addition to the contemporary theoretical perspectives of functionalism, feminism, conflict theory and symbolic interactionism. The course also examines a range of sociological topics and concepts including research methods, culture, socialization, social stratification, deviance and crime, race and ethnicity, sex and gender, health and healthcare, work and the economy, and populations.

SC1160 Sociology of Families

Transferable to MUN Sociology 2270. This course includes the topics: defining the family, sociological perspectives on the family, family diversity, dynamics of intimate relationships, marriage, children and parenting, lone parent families, separation, divorce and remarriage, the family and work, the family and poverty, middle and beyond, social problems in the family, and trends in Canadian family life.

SC1240 Healthy Aging

This is an introductory course in the area of aging. Using a multidisciplinary approach, students will gain knowledge and understanding of the aging process and older adults which is the foundation of further study of the aging field.

SC1300 Introduction to Women’s Studies

The course provides a chronology of the women’s movement by examining its historical development. Students will learn about the Canadian and Newfoundland women’s movement through an investigation of the contributions and achievements made by women, while also analyzing many of the persistent barriers to full equality for women.

SC1350 Contemporary Issues for Women

This course examines and analyzes issues and concerns facing women in contemporary society from a feminist framework. Topics are examination and analysis include feminism, women and the economy, women and violence, women and the media, women and addiction, and women’s health issues.

SC1400 Sociology - Labrador Society and Culture

This course will provide students with an opportunity to take a critical look at Labrador society and culture. By developing a sociological perspective, students gain a better understanding of their own society and culture.

SC1430 Labrador Society and Culture

This course examines Labrador Society and Culture from its pre-Contact origins through to the present day. Through coursework, guest speakers and docu-
mentaries attention will center on specific cultural groups/trait within Labrador, as well as their inter-relationships, which constitute Labrador society.

SD1020 Orientation to CAS Trades
This course will introduce learners to the Comprehensive Arts and Science (CAS) Trades program, the world of trades and the College/campus learning environment. It provides an opportunity to explore the trades shop, as well as classroom facilities and Learner Services. Learners will discuss goals, career and learning styles. Learners will learn about safety practices, College values, and best practices.

SD1050 Personal Skills Development I
This course is meant to examine and promote living skills necessary for aboriginal student success in post-secondary environments. This particular course will focus upon the creation of a healthy self-concept, sound financial sense, and an awareness of good nutrition and healthy eating habits. It shall also explore ways to manage emotions and the connection between emotional balance and general well-being.

SD1061 Personal Skills Development II
The purpose of this course is to examine and promote the living skills necessary for aboriginal student success in post-secondary environments. This particular course will explore effective communication and decision-making skills, healthy interpersonal relationships, and issues related to parenting and child development.

Prerequisite(s): SD1050

SD1170 Technology Awareness I
This course (with Technology Awareness II) is designed to raise career awareness levels for engineering technology students by providing information regarding the engineering technology profession. The course will prepare students for the workplace by illustrating how the skills and practices of successful students parallel the skills and practices of successful professionals.

SD1171 Technology Awareness II
This course (with Technology Awareness I) is designed to raise career awareness levels for engineering technology students by providing information regarding the engineering technology profession. The course will prepare students for the workplace by illustrating how the skills and practices of successful students parallel the skills and practices of successful professionals.

Prerequisite(s): SD1170

SD1180 Field Placement Preparation I
Students will prepare for their first field placement experience and will gain the necessary information to help them benefit from the field placement experience.

Prerequisite(s): Successful completion of all Semester 1 and 2 courses

SD1181 Field Placement Preparation II
This course is designed to prepare students for their second field placement experience. The course provides students with the necessary information to help students benefit from the field placement experience.

Prerequisite(s): Successful completion of all Semester 4 and 5 courses

SD1230 Career Exploration
This course takes the student through the process of career exploration, teaching the skills needed to make informed decisions about their future education and career goals. The student will be engaged in personal discovery and self-assessment, learn multiple research methods used for gathering career-related information, and develop a clear understanding of the career decision-making process. By the end of the course the student will have developed a career portfolio and developed a personal career plan.

SD1240 Field Placement Preparation
This course helps students prepare for field placement. In the course students will identify and pursue possible field placement opportunities, prepare learning contracts, and receive direction on completion of field placement documentation. In addition, students will receive ethical and legal guidelines to prepare them for placements with human service agencies.

SD1340 Student, Career and Portfolio Development I
This course is an introduction to the concepts of student development, career and education plans, and the development of a student portfolio. The student will explore business industry overview, self and career assessment, planning a career portfolio, service learning and time management. This course is the first in a series of four courses and begins the development of a career portfolio that the student will continue to work with and maintain throughout their program of study.

SD1341 Student, Career and Portfolio Development II
This course is a continuation of the concepts of student development, career and education plans, and the development of a student portfolio. The student will continue their self and career assessment and planning a career portfolio, and will also explore ethics in the workplace, and interpersonal skills such as trust, conflict management and resolution, stress management, and teamwork. This course is the second in a series of four courses designed to develop a career portfolio that the student will continue to work with throughout their program of study.

Prerequisite(s): SD1340

SD1350 Portfolios
This course is designed to give learners the knowledge and skills necessary to complete a portfolio that documents their achievements, the scope and quality of their experience and training, skills and abilities, and their career plans. The learners will also explore a construction industry overview. The portfolio can be used for job applications and during job interviews in preparation for entry into the job market.

SD1420 Workplace Skills
This course develops sound customer service skills in the student and assists the students in preparing for job search and the office environment. Practical exercises, cases and behavioural modeling are conducted to assist the student’s skill development and knowledge of customer service and expected work ethic, attitude and skills.

SD1460 College, Career and Portfolio Preparation
This course will allow the student to obtain basic college information, an information technology industry overview, a self and career assessment process, and an introduction to ethics and best practices in the Information Technology field. An Experiential Education Model will be introduced as part of the cooperative education process. The main focus of this course is the development of a career portfolio that the student will continue to work with throughout their program of study.

Prerequisite(s): Successful completion of semester 3 Co-requisite(s): All 4th semester courses

SD1470 College, Career and Portfolio Preparation – Non Co-op
This course will allow the student to obtain basic college information, an information technology industry overview, a self and career assessment process, and an introduction to ethics and best practices in the Information Technology field. The main focus of this course is the development of a career portfolio that the student will continue to work with throughout their program of study.

SD1530 Change in the Workplace
Students examine the concepts of change in the workplace. Historical aspects of the Canadian Health Care System and recent changes to the system are explored. The significance of these changes to the citizens of Canada and Newfoundland and Labrador, and to the roles of workers in the workplace will be considered. Areas to be addressed include: management and employee decision making; integration of roles; motivation and job satisfaction; accepting and coping with change; introduction to stress and becoming employed. Application of these concepts to related work settings provide an employee’s perspective to working in a rapidly changing field.

SD1570 Effective Learning
This course is designed to help Comprehensive Arts and Science students develop the skills, strategies and tools needed to ensure their success in college. Students who successfully complete the course will have a better understanding of themselves as learners and of strategies for improving their learning potential. They will also have a greater appreciation of the need to define their educational and career goals clearly and to develop the habits and skills which will enable them to achieve those goals. The course will also provide an opportunity for students to become aware of the full range of campus resources available to support their learning and to learn how to use those resources effectively. Students will compile a portfolio during this course which should prove to be of value to them throughout their college life.

SD1580 Critical Thinking across the Curriculum
This course is designed to help Comprehensive Arts and Science students develop analytical and critical thinking skills for practical application in their post-secondary programs as well as in their lives and careers. Students who successfully complete this course will have a better understanding of how to present sound and logical arguments and how to apply the skills of critical analysis in their studies as well as in their working and social lives. The course also provides an introduction to the principles and processes of informal debating.

SD1610 Clinical Skills I
The Clinical Skills I course is designed to introduce the respiratory therapy student to the hospital setting. Under direct supervision of the clinical instructor, students will demonstrate respiratory therapy procedures introduced in the laboratory setting. This clinical course is designed to enhance the knowledge and skills concurrently being taught in the didactic and laboratory components of Semester 4. Students may be given the opportunity to observe and/or participate in higher order skills as available in the clinical setting.

Prerequisite(s): Successful completion of semester 3 Co-requisite(s): All 4th semester courses

SD1611 Clinical Skills II
This course is a continuation of Clinical Skills I. Student will have the opportunity to demonstrate...
respiratory therapy procedures under direct supervision. Students will be expected to expand their knowledge and comprehension of respiratory therapy procedures in keeping with didactic theory and laboratory skills previously or concurrently taught. Along with new clinical performance skills, students will be expected to demonstrate and refine clinical performance skills evaluated in Clinical Skills I. Students may be given the opportunity to observe and/or participate in higher order skills as available in the clinical setting.

Prerequisite(s): Successful completion of semester 4
Co-requisite(s): All 5th semester courses

SD1620 Clinical Orientation
The clinical orientation of the student during the fourth and fifth semesters is designed to reinforce in a practical manner, the theoretical knowledge he/she is acquiring during the didactic segment of the training program. For several hours each week, under the direction and supervision of a clinical instructor, students participate in a variety of basic routine radiographic procedures that present in accord with their level of training. Students are also afforded the opportunity to enhance their knowledge of various basic and specialized radiographic equipment used in today’s modern diagnostic imaging departments. During their clinical orientation, students are also able to apply their understanding of the concepts used in providing quality patient care and radiation protection in a “real life” setting.

Prerequisite(s): Successful completion of semester 3.
Co-requisite(s): All subjects in semester 4

SD1621 Clinical Orientation
The clinical orientation of the student during the fourth and fifth semesters is designed to reinforce in a practical manner, the theoretical knowledge he/she is acquiring during the didactic segment of their training program. For several hours each week, under the direction and supervision of a clinical instructor, students participate in a variety of basic routine radiographic procedures that present in accord with their level of training. Students are also afforded the opportunity to enhance their knowledge of various basic and specialized radiographic equipment used in today’s modern diagnostic imaging departments. During their clinical orientation, students are also able to apply their understanding of the concepts used in providing quality patient care and radiation protection in a “real life” setting.

Prerequisite(s): Successful completion of semester 4.
Co-requisite(s): All subjects in semester 5

SD1630 Working in Health Care
This is an introductory course in health care ethics and workplace issues. Through course content, lectures, selected readings and student discussions, ethical theories will be examined and applied to current issues that arise in health care.

Prerequisite(s): This course is designed to provide students with the skills and knowledge necessary to successfully enter the workplace as an Administrative Assistant professional. The purpose of this course is to reinforce many previously learned office management concepts prior to students entering the workplace.

Prerequisite(s): OF1100, OF1101, OF2100
SD2100 Service Learning

SD1680 Ethics in Health Care
This is an introductory course in health care ethics and workplace issues. Through course content, lectures, selected readings and student discussion, ethical theories will be examined and applied to current issues that arise in health care.

SD1700 Workplace Skills
This course involves participating in meetings, information on formal meetings, unions, workers’ compensation, employment insurance regulations, workers’ rights and human rights. Upon completion of this course, students will be able to participate in meetings, define and discuss basic concepts of unions, workers’ compensation, employment insurance, workers’ rights, human rights, workplace diversity and gender sensitivity.

SD1710 Job Search Techniques
This course is designed to give students an introduction to the critical elements of effective job search techniques. Upon completion of this course, students will be able to demonstrate effective use of Job Search Techniques.

SD1720 Entrepreneurial Awareness
This fifteen-hour seminar is designed to introduce the student to the field of entrepreneurship, including the characteristics of the entrepreneur, the pros and cons of self-employment, and some of the steps involved in starting your own business.

SD1740 College and Career Preparation
This course will allow the student to obtain basic college information, an information technology industry overview, a self and career assessment process, and an introduction to ethics and best practices in the Information Technology field. The main focus of this course is the development of a career portfolio that the student will continue to develop with throughout their program of study.

SD1750 College and Career Preparation
This course will allow the student to obtain basic college information, an information technology industry overview, a self and career assessment process and an introduction to ethics and best practices in the Information Technology field. The main focus of this course is the development of a career portfolio that the student will continue to develop with throughout their program of study.

SD1910 Workplace Success and the Administrative Assistant
This course is designed to provide students with the skills and knowledge necessary to successfully enter the workplace as an Administrative Assistant professional. The purpose of this course is to reinforce many previously learned office management concepts prior to students entering the workplace.

Prerequisite(s): OF1100, OF1101, OF2100
SD2100 Service Learning

SD2220 Introduction to the Workplace
This course is designed to introduce the student to the workplace as a junior professional and provide them with an awareness of what is expected of them in this environment. Emphasis will be on developing the practical skills, which are necessary to effectively function in a technical environment, through hands-on exercises that simulate real workplace experiences.

Prerequisite(s): Eligibility for work term placement.

SD2340 Student, Career and Portfolio Development III
This course further explores the concepts of student skills development, career and education plans, and the student portfolio that were introduced and developed in SD1340 and SD1341. The student will explore self awareness and skill development; job search skills; employment processes; office politics; and work term reports. The student will continue to develop and refine his/her student portfolio and career and education plans.

Prerequisite(s): SD1341

SD2341 Student, Career and Portfolio Development IV
This course synthesizes the concepts of student skills development, career and education plans and the student portfolio that were introduced in SD1340 and further developed in SD1341 and SD2340. The course will cover individual work term performance review, self and career assessments, employment research, and completion of career portfolio. This course is designed to allow the students to share the technical aspects of their work term, give students individual work term performance review and to complete the career portfolio started in the first semester of their program.

Prerequisite(s): SD2340

SD2350 Student, Career and Portfolio Development III
This course further explores the concepts of student skills development, career and education plans, and the student portfolio that were introduced and developed in SD1340 and SD1341. The student will explore self awareness and skill development; job search skills; employment processes; office politics; and work term reports. The student will continue to develop and refine his/her student portfolio and career and education plans.

Prerequisite(s): SD1341

SD2351 Student, Career and Portfolio Development IV
This course synthesizes the concepts of student skills development, career and education plans, and the student portfolio that were introduced in SD1340 and further developed in SD1341 and SD2350. The course will cover individual work term performance review, self and career assessments, employment research, and completion of career portfolio. This course is designed to allow the students to share the technical aspects of their work term, give students individual work term performance reviews and allow them to complete the career portfolio started in the first semester of their program.
SD2360 Student, Career and Portfolio Development III
This course further explores the concepts of student skills development, career and education plans, and the student portfolio that were introduced in SD1340 and further developed in SD1341 and SD2360. The course will cover individual work term performance review, self and career assessments, employment research, and completion of career portfolio. This course is designed to allow the students to share the technical aspects of their work term, give students individual work term performance reviews and allow them to complete the career portfolio started in the first semester of their program.
Prerequisite(s): SD1341

SD2361 Student, Career and Portfolio Development IV
This course synthesizes the concepts of student skills development, career and education plans, and the student portfolio that were introduced in SD1340 and further developed in SD1341 and SD2360. The course will cover individual work term performance review, self and career assessments, employment research, and completion of career portfolio. This course is designed to allow the students to share the technical aspects of their work term, give students individual work term performance reviews and allow them to complete the career portfolio started in the first semester of their program.
Prerequisite(s): SD2360

SD2370 Student, Career and Portfolio Development III
This course further explores the concepts of student skills development, career and education plans, and the student portfolio that were introduced in SD1340 and SD1341. The student will explore self awareness and skill development; job search skills; employment processes; office politics; and work term reports. The student will continue to develop and refine his/her student portfolio and career and education plans.
Prerequisite(s): SD1341

SD2410 Personal, Professional and Portfolio Development
This course is designed to prepare the students for the workplace. The focus is on acquiring the skills of a successful professional employee. The students will learn how to assess and refine their own skills and to match these skills with employment opportunities.
Prerequisite(s): SD1460 or SD1470

SD2420 Personal and Professional Development
This course is designed to prepare the students for the workplace. The focus is on acquiring the skills of a successful professional employee. The students will learn how to assess and refine their own skills and to match these skills with employment opportunities.
Prerequisite(s): SD1740

SD2430 Personal and Professional Development
This course is designed to prepare the students for the workplace. The focus is on acquiring the skills of a successful professional employee. The students will learn how to access and refine their own skills and to match these skills with employment opportunities.
Prerequisite(s): SD1750

SD2610 Interdisciplinary Studies
This course concentrates on the integration of the knowledge gained in all courses in the program. Students will challenge five (5) comprehensive examinations over the course of the semester, one (1) examination per week. Students will concentrate on analyzing and solving problems involving all disciplines. Students are also expected to rotate through the following laboratories: Public Health Laboratory, Canadian Blood Services, Electron Microscopy, Immunology and Clinical Genetics for exposure to advanced diagnostic techniques.

Prerequisite(s): Successful completion of semester 9.

SD3410 Portfolio Completion and Career Preparation
This is a pass/fail course that is to be completed by students during the academic semester preceding graduation. It is designed to allow the students to share the technical aspects of their work term, give students individual work term performance reviews and to complete the career portfolio started in the first semester of their program.
Prerequisite(s): SD2410 and 2 clear academic standing in the semester preceding the final semester of the student’s program

SE1010 Fire Protection
This course is designed to give students a thorough understanding of the potential loss, due to fire, both in terms of human values and economic impact. Students will also learn about the practice and theory of fire prevention, fire containment, and fire extinguishing. They will also understand the regulatory codes and standards related to fire protection.

SE1020 Occupational Health & Safety-Loss Control
This course will familiarize the student with health and safety losses of human and financial resources both on and off the job, and will provide the student with an understanding of loss control techniques that may be used to reduce these losses in the workplace.

SE1030 Occupational Hygiene I (Chemical Agents)
This course will introduce the student to the fundamentals of occupational health and chemical agents. It will provide the student with an understanding of the methods of recognition, evaluation and control of health hazards involving toxic chemicals and dusts in the workplace.

SE1060 Workplace Safety Legislation
This course will introduce the student to the interpretation and application of workplace health and safety legislation.

SE1070 Human Factors Engineering
This course is designed to provide students machine interface from a design perspective as it relates to occupational health and safety in the workplace.

SE1085 Auditing OH&S&E Management Systems
Risk recognition, evaluation and control and the legislated management responsibilities and accountabilities with respect to this area are of prime importance to the occupational health and safety professional. The course is designed to provide learners with a working knowledge of audits as a tool to ensure that organizations’ practices/procedures/policies are aligned with corporate standards and in compliance with legislative requirements. The course will focus on audit preparation, conducting and reporting on the audit, and post-audit activities.

SE1090 Business Side of Occupational Health and Safety
This course is designed to provide a working knowledge of the fundamentals of accounting and engineering economics that can be useful for the graduate safety engineering professional in understanding, interpreting, preparing financial statements, and utilizing the economic decision making methodologies to present strong cases for the expenditure of capital for major projects and training initiatives. The use of cost benefit analysis and the rate of return analysis for various projects will provide students with a tool to justify health and safety expenditures. By demonstrating that health and safety is a short term cost but a long term investment, they will be able to obtain support form top management for health and safety efforts. Such support will ensure the long term viability of the health and safety programs.

SE1470 Workers’ Compensation and Disability Management
This course will communicate issues related to Worker’s Compensation and Disability Management that will enable the student to acquire the basic skills necessary to apply the principles and techniques of Workers’ Compensation and Disability Management to the workplace in a practical manner.

SE1500 Introduction to Occupational Health and Safety
This course will introduce the student to the interpretation and application of workplace health and safety legislation, due diligence, and some specific safety procedures.

SE2000 Occupational Hygiene II (Physical Agents)
This course will provide the student with an understanding of the methods of recognition, evaluation and control of health hazards involving physical agents in the workplace.

SE2010 Systematic Safety Management
This course will provide the student with an understanding of safety administrative and management techniques that may be used to integrate into the management system.

SE2020 Accident Prevention Engineering and Technology
This course is designed to orient the student to the need for safe work practices, procedures and standards for construction and production operation.

SE2040 Environmental Protection
This course will introduce the student to the various types of pollution, its effects on health and the environment and its control. Legislative aspects will also be covered.

SE2050 Emergency Preparedness Planning
This course will introduce the student to Emergency Response Planning. It will provide the student with an understanding of the various considerations that must be addressed in an emergency response plan that may be applied in the workplace.

SE120 Safety and Maintenance of Field Equipment
This course is designed to teach the student the necessary skills required to safely operate and maintain various field equipment. It includes practical and theoretical information on the operation of gas powered small engines as well as a variety of hand tools. Included also are electrical systems, ignition systems and a basic knowledge of generators and alternators.
Prerequisite(s): Standard First Aid (St. John Ambulance), WHMIS

SE1410 Safety & Maintenance of Field Equipment
This (hands-on) module is designed to teach the student the necessary skills required to safely operate and maintain field equipment. It includes practical and theoretical information on the operation of gas powered small engines as well as a variety of hand tools. Included also are electrical systems, ignition
SE2150 Safety Certifications
This course will provide students with certifications needed for work in industry. Certificate courses will be offered in week prior to Semester 6.

SE2210 Firearms Safety
This course is a firearms safety course for conservation enforcement officers and will include marksmanship and the laws and regulations for non-restricted and restricted firearms.

SE2240 Hunter Education
This module on firearms safety / hunter education is designed to help the conservation officer understand wildlife management, conservation, safe use and handling of firearms and the ethical responsible behaviour that is required for all hunters.

SE2300 Quality Management Systems
This course is designed to introduce the student to the International Organization for Standards (ISO) 9000 quality standards, Deming, Juran, Malcolm Baldridge National Quality Award (MBNQA), Crosby, Total Quality Management (TQM), and Statistical Process Control (SPC). Emphasis will be on providing a good understanding of ISO 9000. Several approaches to the development, implementation, maintenance and evaluation of quality management systems, which may be used to complement the ISO 9000 standards, will be discussed. Quality concepts and problem-solving techniques associated with SPC will be addressed.

SE2310 Management of Computer Technology & Databases
This course will provide students with a basic understanding of information management systems and the strategic use of computer technology to enhance occupational health and safety initiatives and ensure they are aligned with organization needs. It will introduce the student to the concepts and applications of database and enable the student to become proficient in the fundamental competencies necessary to use a database package. Project management software features will be explored to prepare students for the use of this software when planning projects.

SE2320 Risk Management
The course is designed to enable the student to utilize industry-recognized standards and methodologies to assess risk, measure magnitude, and develop plans to minimize and control it. Case studies from the oil and gas and chemical process industries will be used to demonstrate the necessity for comprehensive Risk Management Systems. Process Safety Analysis/Risk Management, Management of Change and Control of Work systems will be applied in the Power Plant Laboratory.
Prerequisite(s): SE2500

SI1010 Science I
This course in introductory conceptual science presents knowledge about the nature of science concepts to prepare learners for success in the field of trades. It provides knowledge of science related to on-the-job skills and practices, and uses shop problems to help learners relate science to employment situations. Upon completion of the course, learners will be able to apply science concepts to trade practices. Topics covered include scientific method, motion, forces and friction, simple machines, and electricity.

SI1011 Science II
This course is the second of two introductory courses in conceptual science. It presents knowledge about the nature of science concepts to prepare learners for success in the field of trades. It provides knowledge of science related to on-the-job skills and practices, and uses shop problems to help learners relate science to employment situations. Upon completion of the course, learners will be able to apply science concepts to trade practices. Topics covered include electric circuits, heat, materials, and pressure.

SI1500 Introduction to Physical and Life Science I
Transferable to MUN Science 1150
This course is designed for non-science majors and students wanting to pursue a degree in primary and elementary education. The course is divided into four parts. The first part, About Science, introduces the history and scope of science, then clarifies how science operates. The second part, Biology: Living Systems, introduces topics such as cells, cellular processes, genetics, human biology and ecosystems. The third part examines aspects of Earth Science including geology, continental drift, crust composition, and surface phenomena such as weather and glacier formation. The final part of the course, Astronomy, introduces concepts such as stars, quasars, black holes, the solar system and the cosmological view of the universe.

SI1501 Introduction to Physical and Life Science II
Transferable to MUN Science 1151
This is a continuation of SI1500 course. This course will develop the fundamental concepts of chemistry and physics. It will emphasize on the (1) energy of motion, which includes mechanical and thermal energy, laws of thermodynamics, kinetic theory, and energy transfer; (2) energy of the atom, which includes structure of the atom, bonding, chemical energy, radioactivity, relativity, and nuclear energy; and (3) energy of the electron (light and electricity), which includes radiant energy, behaviour of waves, light and colour, electric current and circuits, effects of electric current, and production of electric current.

SI2300 Materials Science
This course will focus on the structure and composition of materials used industrial equipment. Emphasis will be placed on the properties of these materials in relation to strength, fatigue and corrosion. Commercial classifications of materials will be examined in relation to engineering specifications.
Prerequisite(s): CH1121, PH1101

SN1100 Introduction to Sound
This is an introductory course in sound and music. Students are introduced to the fundamentals of sound, the mechanics of hearing, and basic music theory. Musical styles will be discussed in reference to popular music in videos, film and advertising, as well as ear training for pitch, tonality and musical textures.

SN1140 Physics of Sound
This course provides a theoretical base in the science of sound for subsequent study of applied sound content. The intent of this course is to explore the objectives at a greater level of detail than in traditional Physics courses and to conduct laboratory activities more specifically related to careers in sound.

SN1200 The Music Business
This course will give students an insight into the Music Business. It will deal with Contractual Agreements between participants as well as Copyright laws and Performing Rights Organizations. Sound related jobs and other employment opportunities will be discussed as well as the perks and pitfalls of Independent Record Productions.

SN1300 Engineering Graphics for Recording Arts
This is an introductory course in Engineering Graphics which uses CAD as a tool to produce various drawings and diagrams. Engineering Graphics provides visually oriented data that is usable by technicians to assist in equipment layout and stage design. Topics covered include an introduction to CAD, geometric terminology and constructions, orthographic projection, sketching, dimensioning, and preparation of charts, diagrams and plots.

SN1400 Stage Lighting
This course is designed to introduce the student to the components and applications of stage lighting as it pertains to the music industry and the performing arts. It will cover such topics as history of stage lighting and design, methods of lighting, design and procedure, introduction to lighting fixtures, consoles, dimmers, intelligent lighting and lighting control software.

SN2100 Electro-Acoustical Devices and Design
This course is designed to give students a comprehensive look at the various types of microphones and loudspeakers. General purpose and specialty microphones will be studied with respect to their use in recording and sound reinforcement. Loudspeaker types and enclosures for sound reinforcement and studio monitoring will studied with design considerations for indoor and outdoor sound systems.
Prerequisite(s): SN1100

SN2200 Recording I
This course is an introduction to sound recording. The evolution of the industry is traced through exploration of the technologies used since sound was first captured and moves to a comprehensive overview of contemporary technologies. A recording session will be discussed in terms of its participants and their respective roles, as well as typical recording procedures.
Prerequisite(s): SN1100, SN2100

SN2201 Recording II
This course will give a comprehensive overview of a recording session. It is intended to give students a hands on experience of a session from the studio set up through final mix down.
Prerequisite(s): SN1100, SN2100, SN2200
SN2300 Broadcast Audio
This course will introduce the student to the latest broadcast technologies. A brief history of the industry will give an insight into the beginnings of radio and TV and trace the technological advances to present day.

SN2400 Sound Production for Animation, Film and Video
This course explores the unique requirements for sound recording and production in film and video industries. Students will review the key technical requirements of the industries and, through practical sessions, will demonstrate required competencies.

SN2410 Sound Production for Live Theatre
This course explores the unique requirements for sound recording in live theatre venues. Students will review the key technical requirements of theatre venues and through practical sessions, will demonstrate required competencies.

SN3100 Sound Reinforcement
This course is designed to introduce the student to the components and applications of the Sound Reinforcement System. Mixing sound at outdoor and indoor venues with the appropriate equipment will be discussed in detail. 
Prerequisite(s): SN1100

SP1200 Machine Shop Practice
This is an introductory course designed to give students a knowledge and understanding of the fundamental metal-removal and general machine shop concepts which will form the basis for further studies in science and technology.

SP1210 Machine Shop Practice
This is an introductory course designed to give students a knowledge and understanding of the fundamental metal-removal and general machine shop concepts which will form the basis for further studies in science and technology.

SP1310 Radiation Safety
This is an introductory course dealing with the regulation and standards of QA/QC in the manufacture of the product. 
Prerequisite(s): SP1200; MA1670

SP1400 Facilities Engineering
This course is designed to give students an introduction to the components and applications of the Sound Reinforcement System. Mixing sound at outdoor and indoor venues with the appropriate equipment will be discussed in detail.

SP1700 Computer Numerical Control (CNC) Machining I
The course is designed to be an introductory course in Computer Numerical Control (CNC). Most of the course will be instructed through hands-on work with both a CNC Lathe and CNC Milling Machine. Lecture will accompany the labs for theory. 
Prerequisite(s): SP1200

SP1730 CNC Machining I
This is an introductory course in Computer Numerical Control (CNC). Programming concepts learned through the lecture time will be applied using both a CNC Lathe and CNC Milling Machine.
Prerequisite(s): SP1200

SP1731 CNC Machining II
This is a course in Computer Numerical Control (CNC) using Computer Applied Manufacturing (CAM) software. It is delivered using computers to produce CAD/CAM programs that are applied through shop floor practice with CNC Machining Centers. Instrucitons will be done through lecture, computer lab and hands-on work in the shop.
Prerequisite(s): SP1730

SP1830 Metrology and Quality Control
This course integrates the metrology of product design with the control of quality for a product or service. Measurement of the physical characteristics of a product and its relationship to the manufacture, quality and cost is emphasized. The student will use a variety of measuring tools such as micrometers, scales, the optical comparator and the coordinate measuring machine (CMM) for inspection procedures. In addition, the student will be introduced to Geometric Dimensioning and Tolerancing which will be integrated into the quality control procedures required in the manufacture of the product.
Prerequisite(s): SP1200
Co-requisite(s): MA1670

SP2300 Quality Assurance
This course is designed to introduce the concepts, philosophy and application of Total Quality Management, Statistical process Control and the International Standards Organization (ISO) 9000 quality standards. Emphasis will be on the integration of the total quality management philosophy into the production process. Development of quality control procedures and documentation will be discussed including reference to existing industry quality control specifications. The implementation process for quality assurance manuals and their auditing procedures will be outlined.

SP2301 Quality Control
This course is designed to provide knowledge and skills prerequisite to the development, implementation, maintenance and evaluation of Quality Control Systems.

SP2310 Quality Control and Inspection I
To develop the student’s ability to work in an organization which is involved in Quality Control and Inspection. To properly take measurements and do dimensional checks on materials under control. To perform basic visual, LPI and MPI tests on weldments. An introductory course in Quality Control and Non-Destructive Testing methods. The topics include introduction to Quality Control, Metrology, CSA standards, Z299.1-85, Visual, LPI and MPI testing.
Prerequisite(s): WD1100, PH1100

SP2311 Quality Control and Inspection II
This course requires that the student develop an understanding of the theory and concepts behind both ultrasonics and liquid penetrant evaluation, it then provides practical applications of these and requires that the student use typical industrial codes and standards to evaluate results.
Prerequisite(s): CF1100, SP2310

SP2330 Quality Assurance / Quality Control
This course is designed to give students an understanding of the concepts and requirements of QA/QC such as, interpreting standards, controlling the acceptance of raw materials, controlling quality variables and documenting the process. It includes information on quality concepts, codes and standards, documentation, communications, human resources, company structure and policy, teamwork and responsibilities. Upon completion of this course, students will be able to develop the skills and knowledge required to apply quality assurance/quality control procedures as related to the trade; develop an awareness of quality principles and processes, apply quality assurance/quality control procedures in a shop project.

SP2360 Quality Control and Reliability
This course builds on the theory and practice covered in the previous quality assurance, metrology and quality control courses. It focuses on application of geometrical dimensioning and tolerances, precision measurement using a co-ordinate measuring machine and reliability.
Prerequisite(s): SP1830; MA1670

SP2410 Safety Engineering Technology
This course will provide the student with an overview of the fundamentals of occupational health and safety in the oil and gas drilling and production environment.

SP2450 OHS Management Systems
This course will introduce the student to the interpretation and application of workplace occupational health and safety (OHS) legislation and provide the student with an understanding of due diligence. The course is designed to enable the student to utilize industry-recognized standards and methodologies to assess risk, determine its magnitude, and develop plans to minimize and control it. Case studies from manufacturing or other industrial settings may be used to demonstrate the necessity for proactive safety systems.

SP2510 Plant and Facility Layout
The course examines the contribution that a competently performed plant or facility layout plan can make toward achieving a profitable and efficient company or non-profit organization. The course combines fundamental principles and practical methodologies in plant and facility layout and material handling. The student will investigate and apply these principles and techniques in a variety of practical situations. Fundamental principles for innovation or change must be analyzed and described thoroughly, this course also emphasizes development of competencies in CADD and communications, with emphasis on the written report.
Prerequisite(s): EI4130

ST2110 Metal I
This course is designed to continue to give students experience in working with metal as a three-dimensional sculptural material. Students will be provided with intermediate skills in both jewellery and metal sculptural areas. Previously learned skills will be refined and students will experiment with other three-dimensional forming techniques, stone setting, rolling mill, casting and advanced soldering techniques. Students will work in consultation with the instructor to design creative metal constructions.
Prerequisite(s): VA1301

ST2111 Metal II
This course is designed to help students gain a greater skill and understanding when working with metal. This course provides students with more emphasis on using metal as a three-dimensional media for more personal expression. Students will be expected to design projects of special interest, expand their use of skills learned in the previous semester and execute more advanced design ideas.
Students will create a series of unique and complex works in metal.

**Prerequisite(s):** ST2110

**ST2120 Painting I**
This course builds on students' introductory skills in painting attained in Materials and Techniques II. The course is experimental in nature, both technically and conceptually. A wide variety of subject matter is used.

**Prerequisite(s):** ST2120

**ST2121 Painting II**
This is an intermediate course in painting designed to consolidate and refine skills learned in Painting I. Students observe and experiment with various painting media continuing to develop themselves through exploration of various content areas.

**Prerequisite(s):** ST2120

**ST2130 Ceramics I**
This course is designed for students who wish to continue developing their pottery clay skills. Demonstrations are given and projects are assigned which involve using a variety of intermediate hand-building and decorating techniques. Students will improve their throwing techniques on the potter’s wheel through throwing cylinders, mugs, vases, bowls and plates. More experience is gained through decoration, glazing and firing of the final clay forms.

**Prerequisite(s):** VA1300

**ST2131 Ceramics II**
This is an advanced course in ceramics which will require students to specialize in a combination of hand-building and/or throwing on the wheel. Emphasis will be placed on personal designs and the construction of unique work. Students will be taught to mix their own clay and glazes and load and fire kilns independently. A series of final works will be designed and created in consultation in a format which they have selected in consultation with the instructor.

**Prerequisite(s):** ST2130

**ST2140 Printmaking I**
This is an intermediate course in printmaking designed to further develop the student’s knowledge of printmaking materials and techniques. Specific print techniques include line and tonal etching processes, basic colour printing, editioning and photo etching. Students will be expected to develop a body of work that expresses a particular theme in printmaking.

**Prerequisite(s):** VA1301

**ST2141 Printmaking II**
This is the final course in printmaking and in many respects is an extension of Printmaking I. In close consultation with the instructor, students will define individual problems, directions, and projects for the semester. New print techniques to be investigated include color reduction woodcut and missed media prints. Individualized instruction and evaluation are an important component of the course.

**Prerequisite(s):** ST2140

**ST2160 Photography I**
This course is designed for the student who has a strong interest in the digital and film photographic medium as a means of personal expression. The student is introduced to conversion of colour film to digital format for further processing and output, as well as further exploration of black and white techniques and their application to digital photography.

**Prerequisite(s):** PY1101

**ST2161 Photography II**
This course is an extension of Photography I. In this course students have the opportunity to continue colour as well as black and white film techniques as part of the ongoing exploration of modern digital photography. The course involves a more individualized approach and the student is expected to build a large body of photographic work around concepts of interest and expression.

**Prerequisite(s):** ST2160

**ST2181 Weave II**
In this course students will learn more advanced weaving techniques. Students will be introduced to weave theory, intermediate weave techniques, finishing techniques, and basic computer skills in weave. Students will continue to maintain records of their work.

**Prerequisite(s):** ST2181, VA1201

**ST2182 Weave III**
This course provides students with an opportunity to complete an independent learning project. Working in consultation with their instructor, students will identify a project concept, develop a project plan, complete design research, develop a project design incorporating advanced weaving techniques, and implement the project.

**Prerequisite(s):** ST2181, VA1201

**ST2300 Embroidery and Quilt II**
In this course students will learn more advanced embroidery and quilt techniques. Students will be introduced to basic machine embroidery, traditional embroidery techniques and basic computer skills in embroidery. In quilt, students will explore traditional and contemporary quilt techniques in addition to exposure to basic computer skills in quilt. Students will continue to maintain records of their work.

**Prerequisite(s):** TX1300, VA1201

**ST2301 Embroidery and Quilt III**
This course provides students with an opportunity to complete an independent learning project. Working in consultation with their instructor, students will identify a project concept, develop a project plan, complete design research, develop a project design incorporating advanced embroidery and quilt techniques, and implement the project.

**Prerequisite(s):** ST2300, VA12250

**ST2330 Print and Dye II**
In this course students will learn more advanced print and dye techniques. Students will be introduced to intermediate resist techniques, silk screen print techniques, intermediate chemical application, intermediate natural dye techniques, and basic computer skills in print and dye. Students will continue to maintain records of their work.

**Prerequisite(s):** TX1330, VA1201

**ST2331 Print and Dye III**
This course provides students with an opportunity to complete an independent learning project. Working in consultation with their instructor, students will identify a project concept, develop a project plan, complete design research, develop a project design incorporating advanced print and dye techniques, and implement the project.

**Prerequisite(s):** ST2330, VA2250

**ST2400 Apparel Construction III**
In this course students will continue to learn advanced apparel construction techniques. Topics covered include using specialty fabrics in garment construction and designing and constructing outerwear garments.

**Prerequisite(s):** ST2400, VA2250

**SU1150 Field Navigation**
This course is designed to expose students to concepts of field navigation. It is essentially a field oriented course in which students will be introduced to navigational skills using map and compass, aerial photos, and GPS. Students will also be introduced to viewing and manipulating digital data through desktop mapping.

**Prerequisite(s):** MA1101, PH1101

**SU1210 Construction Surveying**
This is the second course in surveying for learners in the Civil Technology program. Its purpose is to strengthen the surveying skills of learners, to teach them new skills in surveying that are directly related to the construction of buildings, roads and municipal services.

**Prerequisite(s):** SU1200

**SU1320 Plane Surveying I**
This is an introductory course in surveying presented to Geomatics Engineering Technology (Co-op) program. The topics to be covered are: introduction to the theory of surveying on a plane, the acquisition of linear distances, horizontal angle, vertical angles, the calculation of coordinates and areas, the determination of elevations using spirit leveling, profiles and cross-sections, the graphical presentation of acquired data. The student will use tapes, total stations and spirit levels to acquire the required data.

**Prerequisite(s):** EG1430, MA1101, PH1100

**SU1321 Plane Surveying II**
This is the second course in Plane Surveying in the Geomatics Engineering Technology (Co-op) program.
This course expands on the topics covered in SU1320: vertical and horizontal datums, data transformation, total station instrumentation, data collectors, horizontal and vertical curves, and construction surveying.  
Prerequisite(s): SU1320, SU1500  

SU1360 Graphics for Geomatics Engineering Technology  
This course introduces a surveying software package. The course utilizes and expands on theory and practice from previous cartography, CAD, and plane surveying courses applying this knowledge to a surveying graphics package. Topics covered include applied drafting skills, traverse computations, software adjustments, earthwork volume determination, road design, area calculations, and subdivision design.  
Prerequisite(s): SU1320, SU1500  
Co-requisite(s): SU1321  

SU1400 Surveying  
This course will acquaint the student with the basic concepts of engineering surveying. While theory is a vital part of the course, heavy emphasis is placed throughout on instrumentation and hands-on training with the various types of equipment. The student’s progress and expertise in handling survey instruments will, therefore, be continuously monitored and evaluated and a significant portion of the total mark will be assigned to instrumentation testing.  

SU1440 Geographic Information Systems (GIS) I  
This is the first of two GIS courses and has focus on vector structure. The course introduces the GIS and its interlink with the real world. The topological structure and the linking between the graphical database and the textual database are explored. The various types of textual databases are introduced. The use of GIS as a facility management tool is addressed with emphasis on the combining of the various themes to answer posed questions.  
Prerequisite(s): SU1320, SU2500  

SU1441 Geographic Information Systems (GIS) II  
This course in GIS focuses on the design and use of the raster data structure. Topics included are characteristics of raster data, data collection and processing systems, and GIS software operating on raster data. Spatial analysis will be taught with a focus on single and multiple layer operations, point pattern, network, and surface analyses. The topic of spatial statistics will be introduced. Raster GIS applications will be addressed.  
Prerequisite(s): SU1440  

SU1500 Cartography  
This course is an introductory course offered to Geomatics Engineering Technology students. The course is divided into two modules. Module one covers topics in cartography while module two expands on the CAD skills acquired by the student in Engineering Graphics EG1110.  
Prerequisite(s): MA1101, PH1100, EG1110  

SU1540 Hydrography I  
This course is an introductory course in hydrographic principles and procedures. It is designed to emphasize the theoretical and practical applications of hydrography and the marine survey environment.  
Prerequisite(s): SU1321  

SU1541 Hydrography II  
This course is an advanced course in hydrographic principles and procedures. It is a continuation of SU1540 (Hydrography I) with emphasis on advanced hydrographic systems and their use in marine engineering projects.  
Prerequisite(s): SU1540, SU2570  

SU1550 Remote Sensing  
This course is designed to introduce the basic principles and skills associated with remote sensing. Aerial photography interpretation and GPS technology are addressed through lectures and practical applications. Students are exposed to satellite imagery, processes and products.  
Prerequisite(s): SU1150  

SU1570 Remote Sensing  
This course introduces the student to the principles of remote sensing. The concept of acquiring data outside our visual range and the use of that data to identify and classify objects and phenomena is investigated. The basic data recording systems in common use are addressed.  
Prerequisite(s): SU2500, SU2570, SU1441  

SU1710 Forest Surveying  
This is an introductory course in Surveying including the basic fundamentals of plane surveying and the use and care of equipment. The measurement of distance, direction and elevation is emphasized. The steel tape, rope chain, level, hand compass, and transit are the major pieces of equipment studied.  

SU2320 Geodetic Surveying  
The third surveying course for the Geomatics Engineering Technology (Co-op) program and addresses the determination of precise positions. The course deals with the acquisition of high precision data by using the available instrumentation to its capacity. Instrumentation checks and equipment adjustment are performed. The errors associated with observed data and the effect of these errors on the accuracy of the calculated parameters are evaluated. The use of data loggers and the transfer of the logged data to coordinate geometry calculation programs are addressed. The reduction of collected data to the desired datum is introduced. The use of code and carrier based GPS receivers is also introduced.  
Prerequisite(s): MA2100, SU1321, PH1101  

SU2500 Photogrammetry  
This course is an introduction to photogrammetry for the Geomatics Engineering Technology (Co-op) program and addresses the determination of precise positions. The course introduces the student to the use of aerial photography for the production of maps. The principals of photogrammetry are addressed and the use of stereoplotters for map compilation is explored. The sources of aerial photography acquisition are identified. The aerotriangulation process for the photo to ground geometry is investigated. The use of aerial photography for the production of rudimentary maps is also addressed.  
Prerequisite(s): SU1320, SU1500  

SU2530 Cadastral Surveying I  
This is an intermediate level course designed to familiarize the student with legal principles and applicable legislation in the area of Cadastral Surveying. The student will also make practical application of this knowledge.  
Prerequisite(s): SU1321  

SU2531 Cadastral Surveying II  
This is Cadastral Surveying II with emphasis on the field and office practices of Land Surveyors. It includes the study of real property law and law related to matters of Land Surveying in Canadian jurisdictions.  
Prerequisite(s): SU2530  

SU2570 GPS and Remote Referencing  
This course introduces the student to the Global Positioning System (GPS) as a precise measuring tool. The satellite systems, operational control and user applications of the GPS system are investigated. The GPS signal structure, broadcast information and the parameters of the navigation message are examined. Referencing systems pertinent to space positioning are defined and coordinate computations performed. The procedural tasks associated with various GPS modes of operation are practiced through completion of specified survey projects. Quality assurance and data analysis is performed to investigate the accuracy of the various GPS methods such as Static, RTK and Post processed solutions. Determination of position by use of the classical astronomical means is also addressed. Alternately satellite systems, Glonass and Galileo are presented.  
Prerequisite(s): SU2320  
Co-requisite(s): MA3130  

SU3210 Geographic Information Systems (GIS)  
This course is designed to provide students with an overview of Geographic Information Systems (GIS) technology and an in depth appreciation of the role of GIS technology in natural resources applications. Students will gain valuable skills and hands-on experience to support resource-based GIS projects typical in the workforce. Using vector-based GIS data models, students will create databases, manage spatial and attribute data, generate map-based and tabular outputs, and perform geographic analysis. The course culminates with a major GIS project designed to reinforce the skills covered in the course.  
Prerequisite(s): MC1080, SU1150  

SU3300 Geodesy & Map Projections  
This third year course offered in Geomatics Engineering Technology (Co-op) expands on map projections and develops the higher order corrections to positioning problems. The course introduces geodesy and geodetic concepts to equip students for modeling and measurement in a 3D global context. This course expands on map projections and develops higher order corrections to positioning problems.  
Prerequisite(s): SU2570, MA3130  

SU3500 Adjustments  
This course further explores the use of the Least Squares technique for the adjustment of survey observations. The parametric model is explored with an introduction to the combined model. The statistical analysis of derived parameters is used for quality assurance.  
Prerequisite(s): MA3130, SU2570, SU1540  

TA1140 Orientation to Rehabilitation  
The purpose of this course is to introduce the student to the field of rehabilitation, the role of the Rehabilitation Assistant, professional organizations and areas of specialization. The course is followed by a one-week clinical placement.  

TA1230 Human Movement and Kinesiology  
This course will enable students to describe the human body in motion and to demonstrate safe body mechanics. This will be based on theoretical and practical study of human movement and kinesiology and how it applies to persons with atypical movement patterns. The course will include a lab component and a practical skills exam. A two-week clinical placement will immediately follow successful completion of this course.  
Prerequisite(s): BL1330, TA1140, TA1610
TA1510 Introduction to Gerontology ●
This course defines aging and the Canadian population according to current and forecast age distributions. Implications on the dependency, economic and social status of the elderly are analyzed. Health status and influencing factors are examined with a concurrent review of health care and housing systems available in urban and rural communities.

TA1600 Introduction to Clinical Skills ●
This course will enable students to effectively handle and move patients using safe body mechanics. The course will include a lab component and a practical skills exam.

TA1610 Clinical Orientation Placement ●
The purpose of this course is to introduce the student to the clinical setting and develop their observation and professionalism skills.
Prerequisite(s): None
Co-requisite(s): TA1140

TA1611 Advanced Clinical Skills ●
This course is a continuation of TA1600 - Introduction to Clinical Skills. The student will learn the theory behind and practice in the lab setting, advanced handling and positioning skills and therapeutic interventions. Students will utilize appropriate equipment and techniques to enhance client participation in therapeutic procedures. The student will practice these skills in the lab and complete a practice skills exam.
Prerequisite(s): TA1600, TA1610

TA1700 Clinical Placement I ●
The student will demonstrate in the clinical setting advanced handling and positioning skills and therapeutic interventions. Students will utilize appropriate equipment and techniques to enhance client participation in therapeutic procedures. The clinical placement setting will be determined by the clinical instructor and will be supervised by an Occupational Therapist or Physiotherapist and/or Occupational Therapist Assistant or Physiotherapist Assistant.
Prerequisite(s): TA1611, TA1600, TA1610, TA1230

TA2130 Disease, Injury and Intervention I ●
Students will be introduced to a selection of diseases and injuries based on broad diagnostic categories, including developmental, physical and psychosocial conditions in pediatric, adult and geriatric populations. Emphasis will be placed on the impact that these conditions present to the individual and the rehabilitation management of these conditions.
Prerequisite(s): BIL1350

TA2131 Disease, Injury and Intervention II ●
Students will continue their study of a selection of diseases and injuries based on broad diagnostic categories, including developmental, physical and psychosocial conditions in pediatric, adult and geriatric populations. Emphasis will be placed on the impact that these conditions present to the individual and the rehabilitation management of these conditions.
Prerequisite(s): BIL1350, TA2130

TA2220 Communication Disorders in Rehabilitation ●
The purpose of this course is to review communication problems associated with neurological and sensory impairments, which inhibit a person's ability to effectively communicate. The focus of the course is to teach the students practical skills which will enhance their communication skills with people who have speech and language difficulties. The students will learn strategies to assist disabled persons to communicate, despite their impairments.
Prerequisite(s): BIL1350

TA2250 Mental Health Concepts and Techniques ●
This course provides a general overview of common mental health conditions and their management, and theories of mental illness and psychosocial practice. As well, current issues in mental health and social-cultural and developmental perspectives will be explored. To facilitate integration of theory and knowledge into practice, consideration will be given to the role of the OTA, PTA and Rehabilitation Assistant in this setting.

TA2670 Therapeutic Skills I for OTA ●
This course will introduce students to, and familiarize them with, the theoretical knowledge and entry-level practical skills of the Occupational Therapist Assistant. Students will learn practical skills in the areas of therapeutic exercise and activity, occupations of daily living (self-care, productivity, and leisure), adapted techniques, modification of the environment and the use of adaptive equipment. These skills will be applied to a variety of disabling conditions in the rehabilitation setting.
Prerequisite(s): TA1600, TA1230, TA1611, TA1700

TA2680 Therapeutic Skills I for PTA ●
The purpose of this course is to provide a foundation of exercise principles and techniques and the use of therapeutic modalities. As well, the student will learn to adjust and fit ambulatory devices, and apply the techniques learned to the most common neurological and musculoskeletal conditions.
Prerequisite(s): TA1600, TA1230, TA1611, TA1700

TA2690 Therapeutic Skills II for the Rehabilitation Assistant (OTA and PTA) ● This course will build on the knowledge learned in Therapeutic Skills I for OTA and Therapeutic Skills I for PTA. The course also focuses on the duties and role of the Rehabilitation Assistant and the integration of OTA and PTA skills in this role. Professional behaviours such as responsibility and accountability are addressed. Emphasis will be placed on Therapeutic interventions with specific populations.
Prerequisite(s): All courses offered in Semesters 1, 2, 3, and 4

TA2740 Clinical Placement II for OTA ●
This five-week clinical placement will provide the opportunity for students to continue to develop their therapeutic skills learned in Therapeutic Skills I for OTA and Advanced Clinical Skills and practice entry level competence as an Occupational Therapist Assistant.
Prerequisite(s): TA1700, TA2670, TA1611

TA2750 Clinical Placement II for PTA ●
This five-week clinical placement will provide the opportunity for students to continue to develop their therapeutic skills learned in Therapeutic Skills I for PTA and Advanced Clinical Skills and practice entry level competence as a Physiotherapist Assistant.
Prerequisite(s): TA1700, TA2680, TA1611

TA2760 Clinical Placement III for the Rehabilitation Assistant (OTA and PTA) ●
This six-week clinical placement will provide the opportunity for students to continue to develop the therapeutic skills learned in Therapeutic Skills I for OTA and Therapeutic Skills I for PTA. The student will demonstrate in the clinical setting advanced handling and positioning skills and therapeutic interventions. Students will utilize appropriate equipment and techniques to enhance client participation in therapeutic procedures. The student will practice entry level competence as a Rehabilitation Assistant, integrating both roles and the higher level clinical skills learned in Therapeutic Skills II for the Rehabilitation Assistant (OTA and PTA). The clinical placement setting will be determined by the clinical instructor and will be supervised by an Occupational Therapist or Physiotherapist and/or an Occupational Therapist Assistant or Physiotherapist Assistant.
Prerequisite(s): All other program courses

TD2100 Thermodynamics ●
This is an introductory course in thermodynamics. The course will provide the student with the basics of thermodynamics and its application to a variety of processes.
Prerequisite(s): PH1100, CH1121

TD2120 Thermodynamics ●
This course follows from Thermodynamics TD2100 and applies the knowledge obtained in that course to specific mechanical systems. These applications are ones which the mechanical engineering technologist is likely to use in his/her future work.
Prerequisite(s): TD2100

TD3100: Applied Thermodynamics (Refrigeration and Air Conditioning) ●
This is both a theory and practical course in the topic of refrigeration and air conditioning. It should draw on knowledge gained in thermodynamics in the specific application refrigeration.
Prerequisite(s): TD2100

TD3110 Thermodynamics II: Heat Transfer and Heat Transfer Applications ●
This course deals with underlying theories and applications of heat transfer. These principles are then related to the unit processes involved in pulp and paper manufacture. Topics include Heat Transfer and Measurement; Conduction, Convection and Radiation; Heat Exchangers; Combustion and Energy Conversions. Examples of applications include: thermal efficiency of biomass and recovery furnaces, steam penetration, heat transfer in digesters and paper dryers, conversion of mechanical energy to heat energy in refineries, heat losses and heat conservation in the pulp and paper industry.
Prerequisite(s): MA1101, TD2100

TG1100 Introduction to WHMIS (Workplace Hazardous Materials Information System) ●
This is an introductory course in Workplace Hazardous Materials Information System (WHMIS). Learners will be able to identify labels and Material Safety Data Sheets (MSDS) associated with WHMIS.

TG1110 Orientation to Safety ●
This is an introductory course in basic safety practices that are common to carpentry, electrical, plumbing and welding. The course introduces common, everyday job-site safety hazards and safety protection, as per Occupational Health and Safety (OHS) regulations.

TG1120 Multi-Trade Hand Tools ●
Available through Distributed Learning

Available through correspondence
This is an introductory course in hand tools that are common to carpentry, electrical, plumbing and welding. This course introduces the learners to hand tools that are widely used in industry. The learner will be able to develop safety practices in the selection, use and care of hand tools.

**TG1130 Multi-Trade Power Tools**
This is an introductory course in power tools that are common to carpentry, electrical, plumbing and welding. This course introduces the learner to power tools that are widely used in industry. The learner will be able to select, operate and develop safe practices in the use of power tools.

**TG1140 Introduction to Rigging**
This is an introductory course in rigging. Learners will be able to identify and use ropes, hoists, chains and overhead cranes to move equipment as per CSA regulations.

**TG1150 Scaffolds and Ladders**
This course introduces the student to techniques to safely erect and use ladders and scaffolds as per all industrial safety regulations and codes. The student will be able to safely erect scaffolds and ladders.

**TG1200 Introduction to Carpentry**
This introductory course illustrates the learner fundamental carpentry practices used in a residential setting. Carpentry safety awareness will be stressed throughout this course as learners are exposed to basic carpentry techniques. The learner will be able to identify the materials and tools used in basic carpentry projects and learn how to interact with a certified carpentry professional.

**Prerequisite(s):** TG1120

**TG1220 Floor and Wall Framing Basics**
This introductory course illustrates the learner fundamental framing techniques used in floor and wall construction. The learner will be able to identify the materials and tools used in a basic floor and wall framing project and will participate in a basic project.

**Prerequisite(s):** TG1200

**TG1250 Residential Wiring Basics**
This course will introduce learners to fundamental wiring practices used in a residence or apartment complex. Electrical safety awareness will be stressed throughout this course as learners are exposed to the fundamentals of wiring basic components used in residential systems. The learner will be able to identify the materials and tools used in basic electrical projects and learn how to interact with a certified electrical professional.

**Prerequisite(s):** TG1110

**TG1270 Copper and Plastic Piping**
This introductory course illustrates to the learner safety information and installation techniques used to install copper and plastic piping in a residential setting. The learner will be able to identify the materials and tools used in a basic piping project and will demonstrate basic building techniques in this area of study.

**Prerequisite(s):** TG1110

**TG1280 Introduction to Welding**
This introductory course illustrates to the learner fundamental welding practices. Welding safety awareness will be stressed throughout this course as learners are exposed to basic shielded metal arc welding techniques. The learner will be able to identify the materials and tools used in a basic welding project and learn how to interact with a certified welding professional.

**Prerequisite(s):** PF1380

**TM1100 Medical Terminology I**
This course begins with a programmed text designed to guide the students from the fundamentals of word building to complete mastery of a medical word building system. Correct spelling and pronunciation are emphasized.

**TM1140 Medical Terminology**
This course is designed to guide the student from the fundamentals of word building to complete mastery of a medical word building system. Correct spelling and pronunciation are emphasized. The course integrates the terms of anatomy, physiology and pathology of specified body systems in a manner that maximizes learning opportunities.

**TM1130 Medical Terminology**
This course is designed to guide the student from the fundamentals of word building to complete mastery of a medical word building system. Correct spelling and pronunciation are emphasized. The course integrates the terms for anatomy, physiology and pathology of specified body systems in a manner that maximizes learning opportunities.

**TM2100 Medical Terminology II**
This course is a continuation of TM1100 with emphasis on building and interpreting terminology related to the anatomy, physiology, and pathology of the human body.

**Prerequisite(s):** TM1100

**TR1600 Newfoundland & Labrador Tourism Destinations**
This course explores Newfoundland and Labrador destinations through the themes of culture/folklore, history, cultural sport events, physical attractions, festivals and special events. Students will discover that special charm that is Newfoundland and Labrador.

**TR1610 Introduction to Tourism & Hospitality**
This course is an introductory course designed to give students an overall view of the tourism industry. Students will explore the theories of travel motivation before moving into the five sectors of tourism. Issues and challenges facing tourism will also be covered.

**TR1660 Newfoundland and Labrador Interpretation**
This course delivers an introduction into the rich cultural, historical and archaeological history of the province of Newfoundland and Labrador. It also focuses on the geological highlights for which the province is world-renowned, the uniqueness and diversity of the flora and fauna, and the impact that whales, seabirds & icebergs have had on the province.

**TR1720 Local Tour Guiding**
This course focuses on the role and responsibilities of the tour guide. A local tour guide is an individual in a front line position who leads, accompanies or transports passengers, individuals or groups on tours, ensures itineraries are met, provides commentary about points of interest and creates positive experiences for passengers. This course has been designed to include the merit National Occupational Standards for tour guides as established by the Canadian Tourism Human Resource Council.

**TS1510 Occupational Health and Safety**
This course is designed to give participants the knowledge and skills necessary to interpret the Occupational Health and Safety Act, laws and regulations, understand the designated responsibilities within the laws and regulations, the right to refuse dangerous work, and the importance of reporting accidents. Upon successful completion of this unit, the apprentice will be able to: prevent accidents and illnesses; improve health and safety conditions in the workplace.

**TS1520 WHMIS**
This course is designed to give participants the knowledge and skills necessary to define WHMIS, examine hazard identification and ingredient disclosure, explain labeling and other forms of warning, and introduce material safety data sheets (MSDS). Upon successful completion of this course, the apprentice will be able to: interpret and apply the Workplace Hazardous Materials Information System (WHMIS) Regulation under the Occupational Health and Safety Act.

**TS1530 Standard First Aid**
This course is designated to give the apprentice the ability to recognize situations requiring emergency action and to make appropriate decisions concerning first aid.

**Prerequisite(s):** Complete a St. John Ambulance Standard First Aid Certificate course

**TS1550 WHMIS**
This course is designed to give participants the knowledge and skills necessary to define WHMIS, examine hazard identification and ingredient disclosure, explain labeling and other forms of warning, and introduce material safety data sheets (MSDS).

**TP1130 Food Safety & Sanitation**
This course will enable the learner to apply safe food handling procedures, personal hygiene and sanitation methods used in a Retail Meat Cutter work environment. The learner will be introduced to biological, chemical and physical hazards present in a plant or retail environment and discuss methods to eliminate all hazards that may be present.

**TP1140 Hand & Power Tools**
Learners will identify, describe and use various hand and power tools required in a plant or retail work setting. Safe use of these tools is stressed throughout this course along with maintenance procedures and sanitation requirements to ensure a healthy and safe environment for working with meat, fish and poultry products.

**TP1150 Meat Science & Nomenclature**
Learners will study the composition of meat and meat muscle with emphasis on what affects meat for market conditions and what effects processing can have on a final product. Nomenclature will be discussed and used throughout this course to enable the learner to identify and use proper names and terminology associated with the industry.

**TP1160 Meat Processing & Cutting**
Learners will describe and practice how to receive products and properly store and rotate product in a refrigerated environment. Learners will then learn to identify, cut and process block ready beef and pork, poultry, lamb and veal. Emphasis will be on accuracy of cuts at the onset of practical training but will be graded on production as well as accuracy as the learner gains experience. The importance of yield and efficiency will be introduced to learners.

**Prerequisite(s):** TP1150

**TP1170 Seafood Fabrication**
This course will introduce seafood products to the learner who must be able to identify, cut and process...
seashell such as cod, salmon, halibut, herring, and mackerel. Firm and yield will be emphasised to the learner.

**TP1180 Value Added Products**
This course will introduce the learner to value added products such as sausage and smoke enhanced meats to enhance a retail outlet’s product line. Learners will participate in the preparation and processing of selected value added products to enhance their practical skills.

**Prerequisite(s):** TP1160, TP1170

**TP1190 Nutrition & Cooking**
The learner will describe calorie makers, protein, carbohydrates and fats associated with products used in the retail meat cutting industry. The learner will also describe and use cooking methods to enhance retail product to be offered for retail sale. Product knowledge is greatly emphasized here to ensure learners have the knowledge necessary to deal with consumer inquiries.

**Prerequisite(s):** TP1180

**TP1200 Merchandising & Packaging**
The learner will develop skills to understand market conditions for beef, pork, lamb, poultry and fish while maximizing yield from product. The learner will develop skills to enhance retail displays by incorporating value added products and specialty items to ensure sales are maximized. The course will also entail portion control, nutritional values of product, steps and cycles associated with marketing products and factors that affect pricing. The importance of attractive product packaged in the correct way will be explained. Salesmanship and customer relations will be emphasized throughout.

**TX1100 Fibre and Fabric Exploration**
This course is designed to introduce students to various fibres and their properties. Students will learn basic felting, papermaking, spinning, and basketry techniques. Basic dye techniques including natural and acid dye and simple construction techniques will also be covered.

**TX1200 Introduction to Sewing**
This course will introduce students to basic sewing skills. Students will be introduced to semi-industrial and three/four overlock sewing machine operation. Topics include basic sewing tools and techniques in addition to knowledge of basic flat pattern construction and application.

**TX1210 Industrial Sewing**
This course introduces students to the operation of standard industrial sewing machines and equipment. Students will learn to operate single needle and three/four overlock and chain stitch sewing machines. Specific sewing techniques using industrial sewing equipment will be covered. Students will develop speed and accuracy using industrial equipment and produce samples according to industry standards.

**Prerequisite(s):** TX1200, TX1400

**TX1300 Embroidery and Quilt I**
In this course students will learn introductory embroidery and quilt techniques. In addition, students will be introduced to specialty products for embroidery and quilting. Students will learn to maintain accurate records of their work.

**Prerequisite(s):** VA1200

**TX1330 Print and Dye I**
This is an introductory course in print and dye techniques. Topics covered include fibre reactive dye, discharge techniques, resist techniques, and block printing. Students will learn to maintain accurate records of their work.

**Prerequisite(s):** VA1200

**TX1400 Apparel Construction I**
This is the first in a series of courses in apparel construction. Students will be provided with an overview of the apparel industry. Emphasis will be placed on mastering basic sewing techniques to produce garments according to industry standards.

**Prerequisite(s):** TX1200, VA1200

**TX1500 Knit and Weave I**
This course introduces students to basic knit and weave techniques. Topics in knit include shaping, texture, colour usage, and finishing techniques. Topics in weave include tapestry techniques and basic weave techniques on a floor loom. Students will learn to maintain accurate records of their work.

**Prerequisite(s):** VA1200

**UL4110 Ultrasound Physics**
This course is designed to instruct students in the theoretical and practical application of ultrasound physics and instrumentation. Selected topics include the interaction of sound and matter, properties of ultrasound transducers, pulse echo instrumentation, images and artifacts, Doppler instrumentation, instrument quality assurance, bioeffects and safety.

**Prerequisite(s):** Successful completion of semester 1

**UL4230 Gynecology**
This course is designed to enable students to acquire a comprehensive knowledge of obstetrics. The didactic phase will include instruction in normal/abnormal sonographic appearances.

**Prerequisite(s):** Successful completion of semester 1

**UL4310 Basic Scanning I**
This is a comprehensive course designed to provide the student with sufficient practice to acquire the basic skills necessary to produce diagnostic ultrasound images. Instruction will be provided in ultrasound practice, principles and protocol. Emphasis will be placed on basic, alternate and specialized imaging techniques utilized for superficial obstetrical and gynecological examinations.

**Prerequisite(s):** Successful completion of semester 1

**UL4420 Abdomen**
This course is designed to enable the student to acquire a comprehensive knowledge of abdominal ultrasound. The didactic phase of the program will include instruction in abdominopelvic organs and vasculature. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal/abnormal sonographic appearances.

**Prerequisite(s):** None

**UL4430 Abdomen Pathology**
This course is designed to enable the student to acquire a comprehensive knowledge of the pathology encountered with abdominal ultrasound. Emphasis will be placed on cross-sectional anatomy, pathophysiology to know the abnormal sonographic appearances.

**Prerequisite(s):** None

**UL4450 Ultrasound Physics**
Successful completion of semester 1

**Co-requisite(s):** UL4230, UL4311, UL4610

**UL4461 Clinical Training**
This course is designed to enable students to acquire, to the fullest extent, the technological skills necessary to become competent in the practice of ultrasonography. Emphasis is placed on extensive “hands on” scanning in the clinical setting. Upon completion of training the student will be able to produce high quality scans in all general and most specialty areas in an efficient and effective manner.

**Prerequisite(s):** Successful completion of semester 1

**UL4470 Ultrasound Physics**
Successful completion of semester 1

**Co-requisite(s):** UL4210, UL4230, UL4610

**UL4480 Ultrasound Physics**
Successful completion of semester 1

**Co-requisite(s):** UL4210, UL4230, UL4610

**UL4490 Ultrasound Physics**
Successful completion of semester 1

**Co-requisite(s):** UL4210, UL4230, UL4610

**UL4510 Ultrasound Physics**
Successful completion of semester 1

**Co-requisite(s):** UL4210, UL4230, UL4610

**UL4610 Ultrasound Physics**
Successful completion of semester 2

**Co-requisite(s):** UL4510

**VA1100 Introduction to Drawing I**
This course is designed to introduce students to the rudiments of drawing. Students practice observation, identifying variations within subject matter, and translating these visions into the drawn form. A variety of basic techniques and drawing styles are introduced and developed during the semester.

**VA1101 Introduction to Drawing II**
This course is designed to consolidate and refine skills learned in Introduction to Drawing I. Experimentation with various media qualities,
students are taught the fundamental techniques. It is the primary introduction to most visual arts studio areas. Each studio area is introduced in a seven week unit during which students are taught the fundamental techniques of that particular medium. Media covered include metal jewellery/sculpture and printmaking.

**Prerequisite(s):** VA1100

**VA1130 Drawing Fundamentals**

Students will learn the rudiments of drawing as a means of communicating objective ideas. Students will study fundamental drawing techniques with a view of developing accurate visual illustration skills required in design, and other collaborative problem solving disciplines.

**VA1150 Animation Drawing I**

This course builds upon the skills acquired in VA1100 by providing the student with a structured series of studio experiences which develop competencies in sketching the human form and objects. The focus is upon capturing the human form at rest and throughout a range of motion. Animation storyboarding will be introduced through a simple comic book project.

**Prerequisite(s):** VA1100

**VA1160 Animation Drawing I**

Students will explore the fundamental principles of cel animation using hand drawn sequential images and timing charts.

**VA1161 Animation Drawing II**

Students will build upon the skills acquired in VA1160 Animation Drawing I and VA1130 Drawing Fundamentals. Through a series of exercises and applying advance principles of animation, students will learn to apply hand drawn sequential images and timing.

**Prerequisite(s):** VA1160; VA1130

**VA1200 Elements of Design**

This is an introductory course in design elements. Students will be provided with an understanding of design concepts, the elements of design and how these elements can be used in visual communications.

**VA1201 Principles of Design**

This is an introductory course in design principles. Students will be provided with a clear understanding of the principles of design and how they can be used in visual communications.

**Prerequisite(s):** VA1200

**VA1230 Graphic Design I**

Students will gain a clear understanding of the elements and principles of design, and how they can be utilized for basic graphic arts tasks. Students will also be introduced to the role of the Graphic Designer in the graphics industry and will gain exposure to the basic operation of a design studio environment.

**VA1231 Graphic Design II**

Students will develop graphic design skills using digital tools. A specific focus of the course is to introduce students to the design requirements of business, including information graphics, business stationary, signage and display advertising.

**Prerequisite(s):** VA1230, GA1120, GA1430

**VA1300 Materials & Techniques I**

This is the first of two courses in materials and techniques. It is the primary introduction to most visual arts studio areas. Each studio area is introduced in a seven week unit during which students are taught the fundamental techniques of VA1230, GA1120, GA1430

**VA1350 Animation 3D Modelling**

This course provides students with the skills to produce original pieces from clay or plasticine. The physical modelling of an object or human form refines skills in 3D visualization, enabling digital pieces to attain higher levels of realism. Additionally, physical models can assist in selling a concept.

**Prerequisite(s):** VA1151

**VA1400 Introduction to Colour Theory**

This introductory course provides the student with a clear understanding of the elements and principles of colour theory, and how colour can be used to create more effective visual images.

**VA1600 Sculpture for Animators**

Students will design, document and transpose two dimensional character designs into three dimensional objects using a tactile approach, figurative subjects, and manual clay sculpture techniques.

**Co-requisite(s):** VA1130

**VA2100 Drawing I**

This course is designed to consolidate and refine skills learned in the Introduction to Drawing courses. The use of various materials, compositions, and drawing techniques are stressed in relation to developing intermediate technique and style in drawing. With individualized guidance from the instructor, students are encouraged to develop more personal responses in all aspects of drawing.

**Prerequisite(s):** VA1101

**VA2101 Drawing II**

This course is designed to allow students to create a body of drawings demonstrating their ability to make personal choices in all aspects of developing final drawings. Students will incorporate personal ideas and content in this body of drawings and continue to refine their use of various materials, compositions, and drawing techniques in consultation with the instructor.

**Prerequisite(s):** VA2100

**VA2170 Life Drawing**

Students will develop drawing abilities and powers of observation using live models and the time honored practice of drawing from life.

**Prerequisite(s):** VA1130

**VA2200 Introduction to Three Dimensional Design**

This is a required introductory course in three dimensional design for visual arts students. The course provides students with a clear understanding of how line, shape, and volume can be controlled to produce art objects.

**Prerequisite(s):** VA1201

**VA2201 Intermediate Three Dimensional Design**

This is a required intermediate course in three dimensional design for students in the Visual Arts program. The course provides students with an understanding of subtractive sculpture and the processes involved with removing material from wood and stone blocks to create sculptural objects.

**Prerequisite(s):** VA2200

**VA2250 Application of Design Theory I**

This course is designed to consolidate and refine skills learned in the Elements of Design and Principles of Design courses. Particular attention is paid to developing an individual working method in design that allows the student to use design theory in practical applications.

**Prerequisite(s):** VA1201

**VA2251 Application of Design Theory II**

In this course students will have the opportunity to design and produce a body of work that will reflect the accumulated knowledge and experience gained in previous design courses. Particular attention will be given to independent thinking and the development and creation of personal ideas in terms of style and content with further emphasis on critical analysis.

**Prerequisite(s):** VA2250

**VA2800 Package Design**

Students will be introduced to the theory and practice of package design. Students will also be exposed to a variety of packaging concepts and options, and will apply their knowledge to the development of several packaging projects that will incorporate their own ideas. Students will develop packaging solutions that meet clients’ needs using industry standard software.

**Prerequisite(s):** GA1120, GA1430, GA1640, PY1200, GA1220

**VA3100 Life Drawing**

This course emphasizes the development of quick sketch techniques using models in action and video stills to study the motion.

**VA3200 Introduction to Classical Animation Techniques**

This course provides students with the skills required to complete an animated project. The course consists of traditional animation production leading to the development of a 30 second animation in supervised labs with regular progress reviews. Students will develop a storyboard, design layout and produce finished animation drawings. Individual coaching on portfolio and demo reel preparation and presentation will be provided.

**VA3350 Screening & Peer Critique**

Students will engage in weekly peer review sessions during which all students will demonstrate the projects that they are working on. The intent is to enable each student to have projects critiqued by peers and the instructor for the program, while availing of the opportunity to learn from the creative applications of those same peers.

**VA4120 Fundamentals of Hydraulics and Pneumatics**

This course in hydraulics and pneumatics requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling hydraulic and pneumatic systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of hydraulic and pneumatic systems and component parts.

**Prerequisite(s):** PF1160, PF1170

**VA4160 Fluid Mechanics**

This course is included in the Civil Engineering Technology program as an engineering science to provide the learner with a knowledge of the prin-
ciples of fluid mechanics and knowledge to solve practical applied problems.

**Prerequisite(s):** MA1101; PHY1101

**WA1200 Hydrology**

This course is designed to serve as an introductory course, one that includes the major concepts and principles of hydrology.

**Prerequisite(s):** MA1101; PHY1101

**WC1150 Work Term I**

The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, 12-16 weeks in duration, and be a normal work week in terms of at least 35 hours, remunerated (paid), and evaluated. Participation in the work term is determined through a competitive process and successful completion of all courses prior to the work term with a Grade Point Average of at least 2.00 is mandatory for work term eligibility. This work term follows the successful completion of semester 2. For most students, it represents their first professional work experience in a business environment and, as such, represents their first opportunity to evaluate their choice of pursuing a career in information technology. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth. The students are learning from the new network of contacts and widening their perception of life and career choices.

**Prerequisite(s):** Successful completion of all courses in academic terms one and two with a minimum Grade Point Average of 2.00.

**WC1200 Work Term I**

For most learners, this work term represents their first experience in an Electrical engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of semester 6 in the Electrical Engineering Technology (Power and Controls) (Co-op) program. Learners are expected to learn, develop and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current College calendar.

**WC1301 Work Term II**

The second work term provides learners possessing significant knowledge from the Geomatics/Surveying environment and, therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current College calendar.

**WC1400 Work Term I**

For most learners, this work term represents their first experience in an industrial engineering environment and, therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 4 in the Industrial Engineering Technology (Co-op) program. Learners are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current College calendar.

**WC1520 Co-operative Work Term I**

This work term follows the successful completion of Semester 5 in the Environmental Technology program. For most students, it represents their first professional work experience in a service/production environment and, as such, represents their first opportunity to evaluate their choice of pursuing a career in the Environmental Technology field. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. A substantive work report is also to be prepared by the student demonstrating competence in both technical content and communication skills.

**Prerequisite(s):** Eligibility according to Co-op regulations in current College calendar.

**WC1401 Work Term II**

The second work term provides learners possessing significant knowledge from the Industrial Engineering Technology (Co-op) program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 6. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously access the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the student demonstrating
and should be able to accept increased responsibility and expand their knowledge and work-related skills. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1701 Work Term II

The second work term provides learners possessing significant knowledge from the Software Engineering Technology (Co-op) or Computing Systems Engineering Technology (Co-op) programs with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content, and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1830 Work Term I

For most learners, this work term represents their first experience in a real work place setting. Work terms must be program relevant, 12-16 weeks in duration, and be a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1831 Work Term II

The second work term provides learners possessing significant knowledge from the Chemical Process Engineering Technology (Co-op) program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 6. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content, and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1900 Work Term I

For most learners, this work term represents their first experience in a mechanical engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Mechanical Engineering Technology (Manufacturing) (Co-op) program. Learners are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1901 Work Term II

The second work term provides learners possessing significant knowledge from the Mechanical Engineering Technology (Manufacturing) (Co-op) program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand the knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content, and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC2150 Work Term II

This is the second work term exposure. The student is expected to further develop and expand his/her knowledge and work-related skills and should be able to accept increased responsibility and challenges. In addition, the student is expected to demonstrate an ability to deal with increasingly complex technical concepts and problems. The student should conscientiously assess the various opportunities relative to their individual interests and career aspirations. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, 12-16 weeks in duration, and be a normal work week in terms of at least 35 hours, remunerated (paid), and evaluated. Participation in the work term is determined through a competitive process. During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth.

Prerequisite(s): Successful completion of all courses in academic terms one and two and WC1050 Work Term I with a Grade Point Average of at least 2.00. In the event a student has not obtained a work term before semester six results are released, the student has to be in clear standing from semester six.

WC2400 Work Term III

This work term follows the successful completion of academic semester 8. Learners should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. Learners should have strong technical ability, good business judgment and superior people skills to improve safety, quality, and productivity in both the production and service sectors.

Prerequisite(s): Eligibility according to Co-op regulations in current College calendar.

WC3150 Work Term III

This is the final work term. Students should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. The student should become better acquainted with their discipline of study, should observe and appreciate the attitudes, responsibilities, and ethics normally expected of information technology professionals and should exercise greater independence and responsibility in his/her assigned work function.

The work term provides a unique learning experience in a real work place setting. The work terms must be program relevant, 12-16 weeks in duration, and be a normal work week in terms of at least 35 hours, remunerated (paid), and evaluated. Participation in the work term is determined through a competitive process. During the on-the-job experience students develop his/her employability and technical skills, further enhancing their personal growth.

Prerequisite(s): Eligibility for this work term is based on successful completion of all courses in semesters 1, 2, and 4, and WC1150 Work Term I and WC1250 Work Term II with a Grade Point Average of at least 2.00. In the event a student has not obtained a work term before semester six results are released, then the student has to be in clear standing from semester six.

WD1100 Welding Technology and Processes I

This introductory course deals with welding technology and processes as applied to the metal fabricating industry. Safety practices are emphasized in all aspects of welding applications in the shop. Applications include welding preparations, welding basic joints, and cutting processes, safety and health in the welding industry; basic welding technology; preventive maintenance of welding equipment.

WD1101 Welding Technology & Processes II

This course is a continuation of Welding Technology and Processes I (WD1100). It covers fusion welding of steel structures under CSA STANDARD 47.1. In conjunction with this standard, using the SMAW process and its applications, the course deals with welding power supplies, electrodes, welding procedures, and testing.

Prerequisite(s): WD1100

WD1120 Shielded Metal Arc Welding Fundamentals

This SMAW course requires the use of safety equipment, SMAW equipment and accessories, and materials and supplies. It involves setting up equipment,
preparing and welding metal, shutting down equipment and testing the weld. It includes information on basic electricity, types of electrodes, types of welding machines, joint design and weld faults. **Prerequisite(s):** PF1160

WD1290 SAW for NDT
This course provides training to students enrolled in the Non-Destructive Testing Technician program in Shielded Metal Arc Welding. Students will be introduced to SAW as it relates to weld faults, causes for weld faults and means of prevention. Learners will also perform basic SAW welds. **Prerequisite(s):** WD1101

WD2100 Welding GMAW/FCAW
This course is a continuation of Welding Technology and Processes II (WD1101). The emphasis is to familiarize the student with common semi and fully automatic processes, their control, limitations, and applications. Processes include GMAW, FCAW, SAW, EGW and ESW Welding. The student will be required to apply knowledge and experience to a variety of industrial problems. (i.e. actual and simulated). Shielded Metal Arc processes; Welding procedures, and CSA Standard W47.1. **Prerequisite(s):** WD1101

WD2101 Welding Technology and Processes IV
This course is designed to familiarize the student with the theory and practice of Gas Tungsten Arch Welding (GTAW). The GTA weld course includes the selection and set-up of equipment and accessories and their application to aluminum, steel and stainless steel in all positions. **Prerequisite(s):** WD2100

WD2200 Welding Codes
This course introduces the student to welding codes, standards and specifications related to the fabrication and inspection of pressure vessels, tanks, structures, and structural steel. Applicable codes such as ASME, Section VIII-1, and Section IX and CSA Standards W47.1, W59, W178, and W178.2 are discussed in detail. Other similar codes, standards, and specifications such as ABS, Lloyd’s, AWS, and DNV will also be discussed and compared with ASME and CSA. **Prerequisite(s):** WD1100, ED1100, CF1100

WD2300 Welding Failure Analysis
Actual cases of failed structures will be studies in detail. The case studies involve analysis of material used, design procedures followed, fabrication methods, and testing controls used. Emphasis will be placed on the design of weldments to avoid fatigue and brittle fractures using fracture mechanics. **Prerequisite(s):** CF1101, CF2530

WD2400 Welding Metallurgy
Welding difficulties and defects, metallurgical problems encountered in welding low, medium, and high-carbon steels and alloy steels, including stainless and high-chromium steels, austenitic manganese steel and tool and die steels. **Prerequisite(s):** CF1100, CF1101

WD3110 Cost Analysis
This course is designed to provide the student with the knowledge to interpret structural, shop and pipe and pressure vessel drawings. The emphasis is to familiarize the student with the knowledge to calculate the cost of fabricating different structural components, by interpreting all elements of industrial drawings and submitting a bid as a major assignment. Arc Welding Processes, Weld Quality Control and Inspection, Welding Procedures and Welding Codes. **Prerequisite(s):** WD1100, WD1101, WD2100, WD2200, SP2310, SP2311

WM1100 Introduction to Women’s Studies
Transferable to MUN Women’s Studies 2000. This course is a feminist introduction to the history, principles, and practices of Women’s Studies within a Canadian context. The initial readings document the key ideas leading to the rise of feminist consciousness in Western culture in general and the emergence of first wave feminism in Britain and North America specifically. The next group of readings documents the development of second wave feminism in Britain and North America, as well as second and third wave feminism in Canada. The impact of key second wave feminist theories on the establishment of Women’s Studies as an academic field of inquiry in Canada will form the context for the interdisciplinary analysis of a variety of Canadian women’s works, including (but not limited to) literature (fiction and non-fiction), film, artworks, and personal documents (for example, diaries, photographs, oral records) in archival collections.

WT1185 Work Term
The work term is a required portion of the program. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, and 15 weeks in duration. Participation in the work term is determined through a competitive process and successful completion of all courses prior to the work term is mandatory for work term eligibility. This work term follows the successful completion of the preceding academic term. For most students, it represents their first professional work experience in a business environment, and as such represents their first opportunity to evaluate their choice of career in information technology. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth. Through the work term students will experience different business cultures (e.g., public, private, and not-for-profit sector, small and large organizations, etc.). They are learning from the new network of contacts and widening their perception of life and career choices. **Prerequisite(s):** Successful completion of all courses in academic Semesters 1 to 6

WT1400 Work Term
For most learners, this work term represents their first experience in a petroleum engineering environment and therefore presents them with their first opportunity to evaluate their career choice. The work term follows the successful completion of Semester 5 in the Petroleum Engineering Technology (Co-op). Learners are expected to learn, develop and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated. **Prerequisite(s):** Eligibility according to Co-op regulations in current College Calendar

WT1460 Work Placement
A minimum seven-week placement is a required portion of the program. The Work Placement Study Program provides students with the opportunity to gain practical experience in the working environment of a power plant and with the life and work of a Power Engineer. Employers are provided the opportunity to train and assess students for possible future employment. The program builds on the range of tasks laid down in the Occupational Analysis of Power Engineers and familiarizes the student with all the machinery and systems that Power Engineers are required to maintain and operate. The course is mainly concerned with safety, operation and maintenance of plant and equipment. The plant in which the Engineer is serving acts as a real-life teaching aid, augments knowledge already acquired and assists students with studies leading to a Certificate of Competency, Third Class. **Prerequisite(s):** Successful completion of all courses in the first five semesters and a minimum cumulative GPA of 2.00.

WT1520 Mining Work Term I
The work term is a required portion of the program. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, and 7 weeks in duration. Participation in the work term is determined through a competitive process and successful completion of all courses prior to the work term is mandatory for work term eligibility. This work term follows the successful completion of the preceding academic term. For most students, it represents their first professional work experience in an industrial environment, and as such represents their first opportunity to evaluate their choice of pursuing a career in mining. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth. They are learning from the new network of contacts and widening their perception of life and career choices. **Prerequisite(s):** Successful completion of all courses in academic terms

WT1700 Biomedical Practicum
Comprehensive on-the-job training for Biomedical students in a setting within the health care engineer-
ing field. The duration of this particular section is seven weeks and will be scheduled at the end of the eighth semester. Students will choose among a variety of differing work environments such as placement in a hospital biomedical engineering department or a private sector medical supply company. The biomedical practicum is designed to enable the student to gain valuable experience in a Biomedical engineering work environment. This experience may be obtained in a health care setting or with a medical equipment supplier or distributor. The duration of the practicum is seven weeks to be scheduled upon satisfactory completion of all academic course work. Students’ abilities will be assessed by the Employer and the college staff. **Prerequisite(s):** Successful completion of all courses in the first three semesters and a minimum cumulative GPA of 2.00.

**WT1760 Work Term I**
For most learners, this work term represents their first experience in a telecommunications engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Telecommunications Engineering Technology (Co-op) Program. Learners are expected to learn, develop and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated. **Prerequisite(s):** Eligibility according to Co-op regulations in current College calendar.

**WT1761 Work Term II**
The second work term provides learners possessing significant knowledge from the Telecommunications Engineering Technology (Co-op) program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated. **Prerequisite(s):** Eligibility according to Co-op regulations in current College calendar.

**XD1350 Environment & Ethics**
This course introduces learners to the legal and ethical rights, obligations and responsibilities of the engineering profession. Through the use of readings, case studies and debates, learners will gain an understanding of the intent and application of professional code of ethics, Tort Law, environmental protection and occupational health and safety.

**XD1810 Solid State Motor Controls**
This course introduces the learner to solid state electronics in motor controls. It includes coverage of power electronic devices, solid state relays and protection devices, and drive electronics.

**XD2300 Electromechanical Motor Controls**
This course introduces the learner to motor control concepts and electromechanical control devices. The learners become familiar with control diagrams, techniques, and methods. It provides the learners with knowledge and background to support the more advanced control concepts presented in later courses. **Prerequisite(s):** PE1500, PE1510

**XD2500 Programmable Controllers I**
This course introduces the learner to programmable logic controllers. It covers PLC concepts and applications. The learners become familiar with PLC types, wiring details and programming techniques. Actual programs and system operation are introduced through lab exercises. **Prerequisite(s):** DP1100 or DP1110; XD2300

**XD2900 Programmable Controllers II**
This course is a continuation of XD2500. It extends the learner’s knowledge of PLC control through advanced instructions and practical exercises with industrial control trainers. **Prerequisite(s):** XD2500

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