College of the North Atlantic
Calendar
2011-2012
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Welcome to College of the North Atlantic (CNA)!

I invite you to explore our 2011-2012 Academic Calendar. See what we have to offer. Discover what CNA can do to help you shape your career. Your decision to attend – or to discover – CNA places you among the thousands of students and graduates of our institution around the world who are preparing for or are enjoying wonderful careers.

We can meet your educational and personal development needs by providing access to recognized and accredited programs and through various supportive services. The many recent enhancements we have made to our facilities will provide you with a modern, safe and healthy learning environment.

The college works closely with its stakeholders and community partners to ensure program offerings and continuous learning opportunities meet the demands of communities and an ever growing economy. Newfoundland and Labrador has enjoyed great success in recent years – and with a number of projects on the horizon, CNA is committed to further building a skilled and diverse workforce.

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

Bruce Hollett
President
College of the North Atlantic
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 students of all ages and interests. The college offers continuous student 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.

IMPORTANT NOTICE
This calendar is intended to assist readers to understand the academic and administrative structure, policies and procedures and to provide information about current course offerings at College of the North Atlantic (“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.

Students 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 counseling are available, it is the responsibility of each student to ensure that the courses selected at registration are appropriate to the requirements of the student’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 student 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 student 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, floods, riots, war, strikes, lock-outs, damage to college property, financial exigency, computer failure or the incompatibility of college computing systems with other systems.
Programs by Campus

BAIE VERTE CAMPUS
Adult Basic Education
Industrial Mechanic (Millwright)
Machinist
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
Film and Video Production
Hair stylist
Heavy Duty Equipment Technician
Heavy Equipment Operator
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
Welder

BONAVISTA CAMPUS
Adult Basic Education
Construction/Industrial Electrician
Insulator (Heat and Frost)
Natural Resources Technician
Office Administration
• Executive
Plumber

BURIN CAMPUS
Adult Basic Education
Business Administration
• Accounting
• General
• Marketing
Human Resources Management
Comprehensive Arts & Science (CAS)
• Transfer: College-University
Construction/Industrial Electrician
Cook
Electrical Engineering Technology (Industrial Controls)
Engineering Technology (First Year)
Instrumentation and Control Technician
Metal Fabricator (Fitter)
Office Administration
• Executive
• Sheet Metal Worker
Welder
Welder/Metal Fabricator (Fitter)
Welding Engineering Technician

CARBONEAR CAMPUS
Adult Basic Education
Bricklayer
Business Administration
• Accounting
• Marketing
Carpenter
Community Studies
Comprehensive Arts & Science (CAS)
• Transfer: College-University
• Transition
Engineering Technology (First Year)
Heritage Carpentry

CLARENVILLE CAMPUS
Adult Basic Education
Business Administration
• Accounting
• General
• Human Resources Management
• Marketing
Carpenter
Comprehensive Arts and Science (CAS)
• Transition
Engineering Technology (First Year)
Office Administration
• Executive
Steamfitter/Pipefitter
Website Administration through Distributed Learning

CORNER BROOK CAMPUS
Adult Basic Education
Adventure Tourism-Outdoor Recreation
Business Administration
• Accounting
• General
• Marketing
Civil Engineering Technology
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
Forest Resources Technician
GIS Applications Specialist (Post Diploma)
Industrial Mechanic (Millwright)
Internet Application Developer
Office Administration
• Executive
Power Engineer (4th Class)
Process Operations Engineering Technology
Welder

GANDER CAMPUS
Adult Basic Education
Aircraft Maintenance Engineering Technician
Aircraft Structural Repair Technician
Automotive Service Technician
Comprehensive Arts and Science (CAS)
• Transition
Engineering Technology (First Year)
Hair stylist
Instrumentation and Control Technician

GRAND FALLS-WINDSOR CAMPUS
Adult Basic Education
Business Administration
• Accounting
• General
• Human Resource Management
• Marketing
Business Management
• Accounting
• Human Resource Management
• Marketing
Community Studies
Comprehensive Arts and Science (CAS)
• Transition
Information Management (Post Diploma)
Medical Laboratory Assistant
Medical Laboratory Sciences
Office Administration
• Executive
• Medical (through Distributed Learning)
Renovation Technician

HAPPY VALLEY-GOOSE BAY CAMPUS
Aboriginal Bridging
Adult Basic Education
Automotive Service Technician
Community Studies
Comprehensive Arts and Science (CAS)
• Transfer: College-University
• Transition
Construction/Industrial Electrician
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)
• Transfer: College-University
Construction/Industrial Electrician
Engineering Technology (First Year)
Industrial Mechanic (Millwright)
Mining Technician
Office Administration
• Executive
Welder

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

PORT AUS BASQUES CAMPUS
Adult Basic Education
Business Administration
Cabinetmaker
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
• Accounting
• General
• Human Resource Management
• Marketing
Business 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 Design
Graphic Production & Printing
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
Primary Care Paramedicine
Programmer Analyst (Business) Co-op
Rehabilitation Assistant through Distributed Learning
Respiratory Therapy
Textiles: Craft & Apparel Design
Welder
Campus Directory

RIDGE ROAD CAMPUS
Architectural Engineering Technology
Chemical Engineering Technology Co-op
Civil Engineering Technology
Electrical Engineering Technology
• Power & Controls Co-op
Electronics Engineering Technology
• Biomedical
• Instrumentation
• Software Engineering Technology (Co-op)
Telecommunications Engineering Technology
Engineering Technology (First Year)
Geomatics/Surveying Engineering Technology Co-op
Industrial Engineering Technology Co-op
Mechanical Engineering Technology
• Manufacturing Co-op
Petroleum Engineering Technology Co-op
Refrigeration and Air Conditioning Mechanic
Safety Engineering Technology (Post Diploma) 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
Carpenter
Comprehensive Arts and Science (CAS)
• Transition
Construction/Industrial Electrician
Engineering Technology (First Year)
Office Administration
• Executive

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

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

Clarenville Campus
69 Pleasant Street
Clarenville, NL A5A 1V9
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

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
1 Campbell Drive
Labrador City, NL A2V 2Y1
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) 695-3582
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 4G0
tel: (709) 454-3559
fax: (709) 454-9808

Distributed Learning Services
69 Pleasant Street
Clarenville, NL A5A 1V9
toll free: 1-877-465-2250
fax: 1-709-466-4640

PROGRAM ENQUIRY COLLEGE-WIDE
toll free: 1-888-982-2268
www.cna.nl.ca
info@cna.nl.ca
Calendar of Events 2011-2012

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 1 (Monday)
Registration begins for Distributed Learning Fall Semester

September 5 (Monday)
Labour Day - College CLOSED

September 6 (Tuesday)
Registration begins for Fall Semester

September 12 (Monday)
First day of Fall Semester classes for Distributed Learning

September 20 (Tuesday)
Last day for adding classes for Fall Semester

September 27 (Tuesday)
Last day to Opt Out of the Health & Dental Plan

October 10 (Monday)
Thanksgiving Day - College CLOSED

October 28 (Friday)
Last day for dropping courses without academic prejudice for Fall Semester

November 11 (Friday)
Remembrance Day - College CLOSED

December 5 (Monday)
Registration begins for Distributed Learning Winter Semester

December 19 (Monday)
Last day of classes / examinations for Fall Semester

December 20 (Tuesday) to January 2 (Monday)
Christmas Break

January 3 (Tuesday)
Registration begins for Winter Semester

January 9 (Monday)
First day of Winter Semester classes for Distributed Learning

January 17 (Tuesday)
Last day for adding courses for Winter Semester

January 23 (Tuesday)
Last day to Opt Out of the Health & Dental Plan for new learners in Winter Semester

February 24 (Friday)
Last day for dropping courses without academic prejudice for Winter Semester

March 5 – 9 (Monday-Friday)
Winter Semester Reading Break

April 2 (Monday)
Registration begins for Distributed Learning Intersession

April 6 (Friday)
Good Friday – College CLOSED

April 9 (Monday)
Easter Break

April 25 (Wednesday)
Last day of classes / examinations for Winter Semester

April 30 (Monday)
Registration begins for Intersession, Continuing Programs

April 30 (Monday)
Registration begins for Spring Semester

May 4 (Friday)
Last day for adding courses for Intersession, Continuing Programs

May 7 (Monday)
Registration begins for Technical Intersession
Registration begins for Technical Spring Semester
First day of Intersession Semester classes for Distributed Learning

May 11 (Friday)
Last day for dropping courses for Intersession, Continuing Programs
Last day for adding courses for Technical Intersession

May 14 (Monday)
Last day for adding courses for Spring Semester
Last day to Opt Out of the Health & Dental Plan for new learners in Intersession, Continuing Programs

May 18 (Friday)
Last day for dropping courses for Technical Intersession, DLS

May 21 (Monday)
Victoria Day, College CLOSED

May 22 (Tuesday)
Last day for adding courses for Technical Spring Semester
Last day to Opt Out of the Health & Dental Plan for new learners in Technical Intersession

May 28 (Monday)
Last day to Opt Out of the Health & Dental Plan for new learners in Technical Spring Semester

June 14 (Thursday)
Last day for classes / examinations for Spring Intersession, Continuing Programs

June 22 (Friday)
Last day for classes / examinations for Technical Intersession, DLS
Last day for dropping courses without academic prejudice for Spring Semester

June 25 (Monday)
Discovery Day, College CLOSED

June 29 (Friday)
Last day for dropping courses without academic prejudice for Technical Spring Semester

July 2 (Monday)
Canada Day, College CLOSED

August 15 (Wednesday)
Last day of classes / examinations for Spring Semester

August 22 (Wednesday)
Last day of classes / examinations for Technical Spring Semester

*The Examination Timetable for the CAS Transfer Program may vary from the above as it is aligned to the MUN examination schedule.

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

BOARD OF GOVERNORS
Terry Styles, Board Chair
Donna Stone, Vice Chair
Andrea Marshall
Gilbert Bennett
Roy Bennett
Jerry Byrne
Barbara Cribb
Vanda Dove
Al Lewis
Selma Pike
Daphne McDonnell
Ellen Turpin
Reginald Bowers
Ronald Richard
David Wells
Wade Pinhorn
Robert Miller
Edith Hunt, Executive Assistant

HEADQUARTERS
President’s Office
Bruce Hollett, President
Giselle Borden, Executive Assistant
Geoff Peters, General Counsel
Edith Hunt, Executive Assistant

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

Deans and Chairs
Mohammad Iqbal, Chair – Applied Research
Theresa Pittman, Chair – Distributed Learning Services and Learning Technologies
Brenda Tobin, Dean – Academics and Applied Arts
Mary Vaughan, Dean – Business and Information Technology
Arthur Leung, Dean – Engineering Technology
Norris Eaton, Dean – Industrial Trades
Jane Gamberg, Dean – Health Sciences
Brent Howell, Dean – Tourism and Natural Resources

Development and College Advancement
Corinne Dunne, Vice President – Development and College Advancement
Kayla Brophy, Executive Assistant
Daniel Wong, Director – China Project
Joanne O’Leary, Chair –Contract Training and Continuing Education

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

CAMPUSS ADMINISTRATORS
Baie Verte Campus
Emily Foster

Bay St. George Campus
Chris Dohaney
Brian Foley
Darlene Oake

Bonavista Campus
Shirley Woodward-Buckle

Burin Campus
Mike Graham
Steve Warren

Carbonear Campus
Gary Myrden

Clarenville Campus
Maisie 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
TBA
Paul Motty

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
Cathy Favre, Associate Campus Administrator

Ridge Road Campus
Paul Forward
Stephanie Dalton

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 student 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 accord-
dance with an agreement with the student 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 regis-
trar’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 student to update their
personal information on file, including contact informa-
tion 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 admis-
sion 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 pre-
scribed.

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 process-
   ing 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 students, provide a
   Record of Achievement or other equivalent official tran-
   script.
6. Provide further documentation or report for an interview
   or for testing 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 appli-
cant from being accepted into regular college programs.
Applications will be referred to the Coordinator of Disability
Services.

HIGH SCHOOL EQUIVALENCE
The following High School Equivalency Certificates will be
considered for acceptance into college programs:
2. Adult Basic Education Certificate (ABE) Level 3 (Level 4
   prior to 1991).
4. The Grade XI Certificate (Department of Education, Public
   Exams).

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 high-
est educational level attained.
4. Applicants complete the standardized assessment instru-
ment 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 recom-
ended 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 sup-
porting 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 SCHOOLD 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 standard-
ized 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 suit-
ability 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, num-
   ber of pieces, date completed and materials used.
2. The college will only accept portfolios in a proper portfo-
   lio 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 sub-
   mitted 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

7. Applicants are advised that they are responsible for the return of submitted materials after they have been reviewed by the Assessment Committee. Applications must include pre-stamped and self-addressed mailing envelopes, prepaid courier invoices, or cheques or money orders to cover postage costs if they wish their work to be returned after review. Portfolios will be destroyed 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:
Applicants are strongly urged to apply early as programs are filled on a first-come, first-served basis. Portfolios should be submitted with the application.

RE-ADMISSION OF LEARNERS
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 readmission 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.

SELECTED 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 places 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 either on 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.

LANDED IMMIGRANTS: REFUGEES AND OTHER CANADIAN STATUS LEARNERS
Learners pay the provincial rates, as outlined in this calendar; however, if the learner’s first language is not English, the college reserves the right to test the English proficiency of these learners before admission.

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.

Landed Immigrants, Refugees, and Other Canadian Status Learners
Learners pay the provincial rates, as outlined in this calendar; however, if the learner’s first language is not English, the college reserves the right to test the English proficiency of these learners before admission.
Academic Regulations

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 in one of 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 or diploma 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.

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.

Inter session
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 embodies 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:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% and over</td>
<td>4</td>
</tr>
<tr>
<td>70%, 75%</td>
<td>3</td>
</tr>
<tr>
<td>60%, 65%</td>
<td>2</td>
</tr>
<tr>
<td>50%, 55%</td>
<td>1</td>
</tr>
<tr>
<td>Below 50%</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

**Academic Dismissal**
Learners will be academically dismissed if their cumulative grade point average is less than 1.0 and/or they have not passed a minimum of 40% of the credits attempted in the semester.

**One-Time Forgiveness**
The college will waive the academic dismissal policy on a "one-time forgiveness" basis as per the following:

Learners, who, for the first time fail to meet the minimum re-admission requirements will be given an academic warning and will be permitted to register for the next semester provided:

1. 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.
2. 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. Learner’s 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 remunerated. 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% or more

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.

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 program 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.

Space limitations and other considerations will determine approval.
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
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). Courses dropped after this date are recorded as “Dropped/Fail” and will have a zero mark entered on the academic record for the course or courses dropped unless, 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 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 (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 postsecondary 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 Registrar’s Office. Learners must discuss their request with the Counsellor and the program 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 Program to Another in the Same or Different Program
a. Learners must discuss their request with the Counsellor and the program administrator and receive written approval.
b. Applications for Lateral Transfer are available from the Registrar’s 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 Registrar’s agent will contact the program 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 Registrar’s 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; the Registrar’s 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 learner.
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 Registrar’s 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 program administrator 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 program administrator, 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 program 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 Registrar’s 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 program administrator and faculty be given credit for the course.

Application for Aegrotat Standing, with full details duly authenticated, must be made to the campus Registrar’s 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 Registrar’s 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 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.

**DEFINITION OF AWARDS**

**Bursary**
Monetary award presented in recognition of academic performance and financial need.

**Graduation Award**
Awards of Excellence, medals, etc., presented upon graduation.

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

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

**Scholarship**
Monetary award presented in recognition of academic excellence.

**APPLICATION PROCESS**
Application forms for awards administered by the college are available at the 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 October 15.

**CRITERIA FOR AWARDS**
- No scholarship or bursary administered at the college will be awarded to a candidate who holds an award of equal or greater value, unless specifically required by the terms of the award. Certain conditions apply.
- To be eligible for any award, a learner must be registered as a full-time learner in a recognized college program.

The eligibility criteria for awarding a scholarship:
- Candidates should be in clear academic standing with a weighted 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 average.
- Candidates must have attained a passing grade in all courses being considered in establishing weighted average. Marks obtained in supplementary exams will be considered in the calculation of the weighted average.
- In cases where the learner repeats a course, the best earned grade will stand for calculation of the weighted average.

The eligibility criteria for awarding a prize or bursary:
- A candidate in the second or third year of a program must have attained a minimum GPA of 2.00 and have clear academic standing.
- A candidate in a certificate-level program and in the first year of a diploma-level program must have attained a reasonable academic performance in their program of studies to date.

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 academic standing at each campus of the college. 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 learner in each program who attains the highest academic standing 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 that have a grade point average (GPA) of 4.0
- Those in industrial trades programs who have 80% or greater in each course. This is to be determined at completion of their program of studies.
- Learners who are registered under General Studies 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.

**OUTSTANDING FEES**
Award recipients who owe outstanding fees to the college will have their monetary award credited to their account.
1.0 REGULATIONS GOVERNING PAYMENT OF FEES & CHARGES

a. All student fees must be paid prior to or at the time of registration unless otherwise specified below. Students receiving Student Aid must present their notification of Student Aid form at registration. These students are permitted to have fees outstanding after registration. Upon receipt of the Student Aid, these students must pay their accounts in full.

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

c. Students 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. Students are notified of their account status on a regular basis. It is the student’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 students, 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 applicable 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. Students enrolled in these programs are therefore required to do courses via DLS. These students will pay the regular program tuition fees. No additional DLS tuition fee or DLS technology fee will be charged.

However, additional tuition and DL technology fees will be charged under the following circumstances:

i. Any student electing to do a DL course over and above their normal term load per semester will pay an additional tuition and technology fees.

ii. Any student choosing to do an elective on-campus instead of the electives offered through DL will pay the DL technology fee for that course.

iii. Any student electing to repeat courses on-campus which were previously taken on-campus or via DL will pay their accounts in full. However, an additional tuition fee per course will be charged under the following circumstances:

iv. Any student electing to do an on-campus course instead of an identical DL course.

v. Any student electing to repeat courses on-campus which were previously taken on-campus or via DL.

2.0 FEES AND CHARGES

2.1 FULL-TIME STUDENTS

Students enrolled in four (4) or more courses:

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

b. Registration fee $95.00
   Students 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 students)

i. Term based Program:
   - Regular Term (15-weeks):
     ABE/College Preparation No Charge
     Business/IT Programs $55.00
     Health Science/Engineering Technology/Tourism and Natural Resources $165.00
   - Intersession (up to 7-weeks in duration):
     ABE/College Preparation No Charge
     Business/IT Programs $27.50
     Health Science/Engineering Technology/Tourism and Natural Resources $82.50

ii. Continuous in-take program:
   ABE/College Preparation No Charge
   Business Programs ($55.00 per 15-week term) Fees are pro-rated on the number of weeks in attendance.
   Trades ($165.00 per 15-week term) Fees pro-rated based on the number of weeks in attendance.
   Heavy Equipment/Commercial Transport ($550.00 per 15-week term) Fees pro-rated based on the number of weeks in attendance.

f. DLS technology fee $50.00 per course

g. Work Term fee (Co-op and Non Co-op) $363.00 per term

h. On the Job (OJT) fees or Work terms less than 7 weeks $49.00 per week

i. International Students
   Please refer to the International Students section of the calendar for fees information pertaining to International students.

2.2 PART-TIME STUDENTS

Students 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 (DL courses) $50.00

2.3 GENERAL STUDIES STUDENTS

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

General studies students who enroll in “DLS” courses will pay a maximum tuition of $726.00 and a $50.00 Technology fee for each DLS course.

2.4 COMMUNITY EDUCATION

Contact local campus for course fees.

2.5 RESIDENCE FEES

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

Students 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 $119.20
   Room and 14 meals weekly N/A $133.30
   Room and 19 meals weekly N/A $155.50

   Burin Campus
Fees and Charges

Room and 5 meals weekly $99.00 $82.90
Room only weekly $60.00 $40.00

Happy Valley Campus
Room and 14 meals weekly $153.50 $133.50

Family Residence (Apartments)
1 Bedroom-monthly /no meals $300.00
2 Bedroom-monthly /no meals $365.00
3 Bedroom-monthly /no meals $425.00

2.6 Miscellaneous Fees
a. Supplementary Fee $25.00
b. Re-read Fee $25.00
c. Resource Camp Fee $30.00 per day
covers food & lodging - not tuition
d. 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 non-refundable.
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 two weeks of any term will receive a full refund. If the withdrawal takes place within three to six weeks, 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 week of intersession will receive a full refund. If the withdrawal takes place within two to three weeks, 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 two weeks of the program start date will receive a full refund. If the withdrawal takes place within three to six weeks, 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 by 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)

Provide special circumstances that may apply to the above conditions, in which case support 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.

4.0 Student Credit

Learners will be granted credit only as a last resort and upon the recommendation of the appropriate Learner Services representative. Credit will be given only for Tuition and Equipment/Materials fees.

Learners Receiving Student Loans

Learners who will be receiving Student Loans and the amount of whose loan is confirmed may be eligible for a Student Waiver. The Waiver will specify what is covered and for what period of time. When the student loan arrives, the amount owing will be deducted from the college.

Learners Not Receiving Student Loans

Learners in this category are not normally eligible for credit, however, from time to time it may be necessary to give a Credit Note to learners who are receiving funding assistance. Credit Notes in these cases will be issued only after a thorough interview is completed by the appropriate Learner Services representative in order to determine need. The case will then be referred to the Campus Administrator with a recommendation.

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 students 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, enrollment, 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.

LEARNERS WITH DISABILITIES
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 their 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. Services and supports to learners with disabilities are also available through the Resource Facilitator at many campus locations.

STUDENT DEVELOPMENT SERVICES
The 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, serves as a direct contact for employment-related issues. Career Employment Services may involve 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. Inquiries can also be directed to the college’s toll free number at 1-888-982-2268 or to any of the college’s campuses. Please consult the campus directory in the calendar for contact information. Electronic inquiries can be directed to info@cna.nl.ca.

LIBRARIES
Each campus of the college has a Library which is operated by a staff of 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 the 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.

Library tours and individual or group instruction in the use of the library and its resources may be arranged. Learners are encouraged to visit the campus Library to see exactly what is available. You can also visit the library website at: http://www.cna.nl.ca/bottomtoolbar/library/

ACCESS FOR SUCCESS
Access for Success (AFS) is a provincial strategy designed to address issues and processes related to learner retention and success. AFS involves the assessment of learners’ strengths and needs, the development of personal career plans, a learner success tracking computer program (Personal Career Plan-PCP), 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.nl.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.

The college supports a peer tutoring program whereby learners may also earn remuneration as peer tutors.

STUDENT GOVERNMENT
College of the North Atlantic supports the activities of the student body through campus Student Representatives Councils (SRC) and provincially through the Council of Student Executives (CSE). Each of these student organizations is governed by Operating Guidelines which can be obtained from the Student Development Officer, Counsellor, Student Representatives Council or online at www.cna.nl.ca

Campus-based Student Representatives Councils aim to address the issues of the learners locally, provincially, and nationally. In September of each year, student elections are held at each campus to elect their Student Representatives Council. The Student Representatives Council may be involved in the organization and delivery of various extra-curricular activities on behalf of learners:

- Winter Carnival
- Recreational and Athletic Activities
- Social Events
- Student Newspaper and
- Yearbook

Contact your Student Development Officer to get involved in your Student Representatives Council on campus.

Council of Student Executive (CSE) provides a provincial forum for representatives from the various campuses.
Student Housing

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. Learners wishing to apply for residence 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 student has been confirmed in a program at the college. For more information please contact the campuses above or call 1 888 982-2268.

Learner Services

Student Representatives Councils to work cooperatively in advancing the interests of the learners they represent. The CSE promotes awareness and understanding of the needs and issues confronting learners and advocates on their behalf. Learners are encouraged to become involved with their Student Representatives Council and have a voice in the events that influence their educational experience.

Learners interested in the Student Representatives Council or the Council of Student Executive should contact the campus Student Development Officer.

STUDENT HEALTH/DENTAL PLAN
Registered learners at the college have access to drug, extended medical, and dental insurance coverage upon registration. The plan is mandatory unless documents demonstrating coverage under another plan (through employment/spouse/parent) is presented during the Health and Dental enrolment period.

Beyond the coverage of Newfoundland and Labrador Medical Coverage Plan (MCP), the learner plan will provide insurance for prescription drug costs (including oral contraceptives, anti-depressants, and acne medication), physiotherapy, massage therapy, speech therapy, chiropractic, and podiatry as well as accidental death and dismemberment insurance ($10,000 coverage), and emergency travel insurance to protect learners when they are away from school.

The Dental coverage includes cleaning, oral exams, scaling, x-rays, fillings, inlays, and root canal therapy with a maximum yearly benefit of $500.

For more information please call the campus nearest you or visit our website at www.cna.nl.ca

Please refer to the International Learner section of this calendar for information regarding Health Insurance for International Learners.

ACCIDENT INSURANCE
Learner insurance coverage against accidents while going to and from the college, while in the college or participating in related college activities such as organized games is mandatory. The premium is included in the registration fee. When an accident happens, minor or otherwise, learners should report immediately to their instructor who will take the necessary action.

STUDENT HANDBOOK
The college provides a Student Handbook annually. This Handbook includes many useful tips for students and also includes a day planner. A copy of this handbook is provided free of charge.

STUDENT CODE OF CONDUCT (RIGHTS AND RESPONSIBILITIES)
College Policy SS-201 respects the general rights of learners and recognizes that learners also have responsibilities. Please see the Student Handbook for details.

HARASSMENT POLICY
It is the policy of the college that all registered learners have the right to pursue their studies and related activities free from personal harassment from college employees, agents of the college or others. Refer to the Student Handbook for the details of this policy (Policy HR-403).

ACTS OF THREATS AND 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.

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 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.
Contract Training

Choosing the right training
College of the North Atlantic can develop customized training options from its extensive 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 and six learning centres. In fact, Contract Training and Continuing Education served over 15,000 learners last year alone.

CUSTOMIZED TRAINING – ON-SITE, ONLINE, ANYTIME
College of North Atlantic’s (CNA) customized training is designed to meet the needs of any business or organization. Training solutions are available for individuals, corporations, government, or networks of companies with similar training requirements.

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.

We pride ourselves on being responsive to clients’ needs. Business Development Officers located strategically throughout the province (at our 17 campuses) provide access to expertise for the development and delivery of training and other services to meet your needs. 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
• Group facilitation / group meeting facilitation
• Lab, classroom rental services
• Strategic planning consultancy services
• Training needs analysis
• Vide conferencing rental services
• Workplace essential skills assessments

TRAINING FOR NEWFOUNDLAND AND LABRADOR’S 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.

Recent Agrifood/agriculture training and activity includes:
• AgExpert Accounting
• Agribusiness Development
• Backyard Farming
• Blueberry Production
• Food Sanitation
• Greenhouse Operations
• HACCP Training
• Horticultural Technician
• Kitchen Helper
• Meat Cutting
• National Food Safety Training (NFSTP)
• Nutritional Analysis and Labeling
• Personal Hygiene
• Pilot Scale Production
• Product Development
• Secondary Processing (Meat, Fruit, and Vegetables)
• Sensory Analysis
• Test Market Analysis

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.

Recent business and information technology sector training includes:
- ArcGIS
- AutoCAD
- Business Wings Training for Small Business
- Clerical Skills Assessment
- Computer Hardware and Networking Fundamentals
- Computerized Office Administration Refresher
- Customer Service
- Document Use
- E-Commerce
- Fibre Optics
- GPS Map and Compass
- Microsoft Suite - Word, Excel, Powerpoint, Project
- Primavera Project Management Software Training
- Simply Accounting
- Supply Management Training
- Computer Training
- Commercial Cook
- Changing Minds Mental Health Education
- Distance EMR / Ambulance
- Emergency Medical Responder (EMR)
- Integrated Nursing Access
- Intravenous Therapy and Symptom Relief
- Kitchen Helper
- Medical Device Reprocessing Technician
- Medical Terminology
- National Food Safety Training Program (NFSTP)
- Paramedics
- Personal Care Attendant/Home Support Worker
- Transportation of Dangerous Goods

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.

Recent training includes:
- Air Brake Endorsement
- Alberta “B” Welding
- Blueprint Reading
- Boom Truck Evaluation
- Canadian Electrical Code
- Canadian GeoExchange Coalition: Installers & Residential Designers
- Construction/Industrial Electrical
- Construction Safety Training Systems
- Excavator Training
- Forklift Operation and Safety Assessment
- Fundamentals of Protective Coatings
- Grader Training
- Heavy Equipment Operator
- Mobile Crane
- NDT (Non destructive testing)
- Occupational Health & Safety
- Plumber
- Scaffolding
- Traffic Control Person (TCP)
- Transportation of Dangerous Goods
- Water Well Drilling and Geothermal Heating Technician
- Welder

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 hydroelectricity industries. We are committed to providing the same support to renewable energy including wind and geothermal sources.

Recent energy sector training includes:
- Alberta B Welding (post-journeyperson)
- AMA Supervisory Skills Development for Production Supervisors
- Canadian GeoExchange Coalition: Installers Course; Residential Designers Training
- Climbing Techniques and Safety Procedures
- Cultural Diversity
- Drill Rig Safety Inspection
- Fall Protection / Fall Arrest
- 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
- Safe Practices in Offshore Rigging and Lifting
- SSPC: Fundamentals of Protective Coatings
- Tractor Trailer Endorsement (Class 3)
- Water Well Drilling and Geothermal Heating Technician
- Knowledge Management Training
- Canadian Electrical Code
- Boom Truck Evaluation
- Blueprint Reading
- Alberta “B” Welding (post-journeyperson)

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 optional health.” College of the North Atlantic provides comprehensive support to health sector professional staff, technicians and management.

Recent health sector training includes:
- Changing Minds Mental Health Education
- Commercial Cook
- Computer training
- Distance EMR / Ambulance
- Emergency Medical Responder (EMR)
- Integrated Nursing Access
- Intravenous Therapy and Symptom Relief
- Kitchen Helper
- 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

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.

Recent mining sector training includes:
- AMA Leadership Development for Mining and Related Industries
- Banksman Slinger/Signaler Training
- Computer Training
- Heavy Equipment Operator
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. Recent safety training includes:

- Accident Prevention
- Aerial Lift
- Arc Flash Safety
- Asbestos Abatement
- Back Injury Prevention
- Boat Operators Accredited Training
- Brush Clearing
- Brush Saw Safety
- Bus Driver Training
- CFC Refrigerant Handlers
- Chainsaw Safety
- CPR Refresher
- 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
- Emergency Preparedness
- ENFORM certified safety training
- Environmental Awareness
- Fall Arrest/Fall Protection
- Firearms Safety Hunter Education
- Flag Person (Traffic Control)
- Forklift Safety
- H2S Alive
- High Voltage Industrial
- Industrial Scaffolding
- Occupational Health and Safety Committee/Representative
- Occupational Health and Safety Certificate Program
- Overhead Crane
- Paramedic Program
- Power Line Hazards
- Propane Safety
- Safety Engineering Technology
- Scaffolding Safety Awareness
- Transportation of Dangerous Goods
- WHMIS

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

TO INQUIRE ABOUT CUSTOMIZED TRAINING, CONTACT US.
Call Toll Free: 1.888.982.2268
Email: corporatetraining@cna.nl.ca
Website: www.cna.nl.ca
For those who want to increase their chances of getting a job, upgrade their skills to advance in their present career, 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
- FITTSkills – Certified International Trade Practitioner
- Maintenance Management Professional (offered in partnership with Plant and Engineering Maintenance Association of Canada)
- Marine Front Line Hospitality
- Medical Device Reprocessing Technician
- Medical First Responder Courses
  - ECG Rhythm Strip Review
  - Drug Calculations for the Paramedic
  - Femoral Traction Splint
  - IV Therapy
- Emergency Medical Dispatch (EMD)
- Emergency Medical Responder
- Occupational Health and Safety Fundamentals
- Power Engineering Fourth Class
- Power Engineering Third Class
- Project Management Fundamentals
- Project Management Professional Designation (PMP Preparatory Course)
- Records and Information Management
- Security Services
- Supervisory / Management / Leadership Development
- Supply Management (NL Institute of Purchasing Management Association of Canada)
- Survey Technician Certificate Program - Level I
- Femoral Traction Splint
- IV Therapy

*Print-based distance education refers to correspondence courses.*

**Post-Diploma Program (Post-Graduate)**

Ask about our post-diploma 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
- Cake Decorating
- Canadian Red Cross Babysitters Course
- Cooking
- Firearms Safety / Hunter Training
- Floral Design
- Interior Decorating
- Language Training
- Matting and Framing
- Photography
- Welding (Arc) for personal use
- Yoga

For a list of course descriptions and schedule information, visit our Continuing Education website at [http://www.cna.nl.ca/ce](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
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 credit courses and programs without having to attend a college campus. All online courses carry the same credentials and academic standards as their classroom equivalents. Our Help Desk provides extended service hours seven days per week during the academic year. We provide a toll-free telephone support as well as an online chat service 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. Learners 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 and video conferencing tools are also used in some courses.

Because Distributed Learning is technology-mediated, learners must become familiar with using computers that are Internet ready. It is also essential that learners have access to a computer which is appropriately configured. Before registering for a course, potential learners should take responsibility for learning about the technology, obtaining an email address and assuring access to a computer that has all the software required to complete a course. The time and planning invested at the beginning will pay dividends with a satisfactory and rewarding learning experience.

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 contact the Office of Distributed Learning:

telephone (toll free): 1 877 465-2250
learn@cna.nl.ca
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
AC2100 Bookkeeping II
AC2230 Computerized Accounting I
AC2250 Managerial Accounting I
AC2260 Financial Accounting II
AC2600 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
CJ2100 Canada’s Justice System
CM1060 Essential English I
CM1061 Essential English II
CM1100 Writing Fundamentals
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
CM2100 Workplace Correspondence
CM2150 Workplace Communications (Trades)
CM2200 Oral Communications
CM2300 Report Writing
CP1120 Fundamentals of Programming I
CP1330 Windows Server Administration
CP1360 Programming for Computer Systems and Networking
CP1410 Web Analysis and Design
CP1450 Operating Systems
CP1560 Data Management
CP1570 Networking for Programmers
CP2130 Fundamentals of Programming II
CP2280 Object Oriented Programming in Java
CP2310 Electronic Spreadsheet Applications
CP2320 Micro Database Applications
CP2420 PHP
CP2470 Web Server
CP2640 Desktop Publishing
CP3100 MVC Framework Development
CP3130 Content Management Systems
CP3150 Interface Design and Analytics
CP3160 Multimedia Development
CP3370 Software Development with ASP.NET
CP3410 Fundamentals of Database Design
CP3510 Database Design
CP3470 Systems Analysis and Design I
CR1100 Network Fundamentals
CR1260 Client Service for Computer Industry
CR1280 Computer Concepts for Information Management
CR1310 Network Troubleshooting
CR1360 Security for Information Management
CR1510 Web Site Development
CR2251 Linux Service Administration I
CR2800 Security for Programmers
CR3540 Capstone Project for Information Management
DM1200 Document Production I
DM1201 Document Production II
DM1300 Transcription I
DM1301 Transcription II
DM1400 Medical Transcription I
DM1401 Medical Transcription II
DM2200 Document Production III
DM2201 Document Production IV
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International Students

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 International Learner Application Form and forward it, along with application fee, proof of English competency and academic transcripts to the address listed on the application form. Applications can be submitted on-line or forms can be obtained by contacting College of the North Atlantic by email, telephone, fax, mail (see contact information below), from any Canadian Education Centre office or from any of our agents.

   **International Learner Coordinator**
   Learner Services Division
   College of the North Atlantic
   1 Prince Philip Drive
   P.O. Box 1693
   St. John’s, NL
   Canada A1C 5P7
   tel: 709 758-7290
   fax: +1 709 758-7304
   email: intstudents@cna.nl.ca
   Web: www.cna.nl.ca

2. The application will be reviewed and, if accepted, a **Letter of Acceptance** or a **Letter of Conditional Acceptance** will be issued to the learner. The letter will confirm fee, enrolment, program of study and length of program.

3. Upon receipt of the Letter of Acceptance/Conditional Letter of Acceptance, tuition for the first semester of the program of studies is due to the college. In the event that a student visa 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 except for the application fee.

4. Applicants should take their letter of acceptance to the nearest Canadian Embassy, High Commission, or Consulate to apply for a **Student Study Permit**. An immigration officer will then provide the applicant with an information package about the documents that are necessary to process a student study permit. Generally, applicants will need:
   - documentation verifying personal identification (such as a passport)
   - an original **Letter of Acceptance/Conditional 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

5. Once an applicant has been issued with a Student Study Permit from the Canadian Diplomatic Mission, they should advise the college and make arrangements to travel to Canada and begin their 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 550 or equivalent, IELTS, overall band 6.5 and 6.0 for reading/writing, etc.). Learners who do not provide evidence of English proficiency will be accepted into English as a Second Language (ESL) and conditionally accepted into their program of choice if they meet all other entrance requirements.

Upon arrival, conditionally accepted students may take the college’s English proficiency test. If learners successfully demonstrate English proficiency on this test, they are accepted into their program of choice and may begin immediately. If English as a Second Language is required prior to program entry, learners may be allowed to complete some courses from their program concurrent with their English 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. Those learners who have completed advanced courses in Mathematics and Sciences may be eligible to receive advanced standing for those courses.

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, College of the North Atlantic will do its utmost to allow students 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 and January, but learners may join ESL classes on a continuous intake basis, enrolment permitting. ESL Summer Sessions may also be available in May and June. Contact the International Learner Coordinator for details.

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 activities for learners throughout the year, including sports and recreation activities and special events.

International learners may avail of the services of the International Learner Coordinator. Staff of this office are sensitive to the special needs of international learners and are experienced in providing support to them, especially upon first arriving at the college. Services include:
- Airport Reception - students are met upon arrival to the province.
- Housing – prearrangement of homestay or living accommodations.
- Orientation - information sessions on health, weather, banking, transportation, taxes, etc.
- Assistance with immigration matters such as renewal/extension of visas, work permits, reinstatement of status, etc.
- Liaison with sponsoring agencies, foreign governments, consulates and embassies.
- General advising and counseling regarding personal and financial concerns.
- Language assessment.

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) covers under MCP, provided they are living in the province for at least 12 months. Dependents of the student will also be covered under MCP, provided they are living in the province and have relevant documentation to support their application.

An application for Newfoundland and Labrador Health Care Coverage must be completed by the applicant. Forms can be obtained from post-secondary institutions and via the Government website at www.health.gov.nl.ca/mcp/.

Health care benefits listed under the Medical Care Insured Services Regulations and the Hospital Insurance Plan Regulations will be accessible. A detailed explanation of these services can be found on the Provincial Government website at www.health.gov.nl.ca/mcp/.

Services listed under the Medical Care Insured Services Regulations and the Hospital Insurance Plan Regulations will be accessible for international students. Health insurance for other services (i.e., coverage for prescription drugs) is currently available for International Students to purchase through the other health insurance companies.

International students will be eligible for coverage while visiting outside the province only during the period specified on their study permit provided the authorization remains valid through Citizenship and Immigration Canada.

Coverage will become effective for eligible students on the date of arrival in the province or the effective date of study permit, whichever is later. Coverage terminates upon expiry of the study permit or the date of departure from Newfoundland and Labrador, whichever is earlier.

Registered learners of College of the North Atlantic are covered under an accident insurance plan. This DOES NOT provide routine medical coverage for learners.

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

Tuition Fees:
- Regular-Full-time programs: CAD $3300 per semester (15 weeks)
- Intersession: CAD $1650 per semester (6 weeks)
- In-class course - Part-Time learners: CAD $825 per course (15 week semester)
- 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
- Materials & Supplies: CAD $55-$165

Non-technical programs have two (2) semesters a year (September – December/January – April). Technical programs include an intersession in May/June. 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 per semester
- Health Insurance: CAD $600 per year
- Living Costs: CAD $600 per month

(See Accommodation section)
SCHEDULE OF PAYMENTS
• Application Fee ($100) must accompany application form
• Registration Fee ($95) paid at registration, once per year
• First semester tuition ($3300) due when learner receives Letter of Acceptance
• Tuition is paid in advance of the beginning of each semester
• Medical Insurance must be purchased before or upon arrival in Canada

ACCEPTABLE METHOD OF PAYMENTS
Payment can be made by international money order, by international bank draft, by credit card or by direct transfer into the college’s account.

REFUNDS
Tuition and Fees for International Students
The following outlines the international eligibility for tuition refund:
• 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. (The Application fee and the registration fee are non-refundable).
• 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. (The application fee and the registration fee are non-refundable).
• Once a learner is registered in their program of study, they are not eligible for any refund of tuition for the semester in which they are registered or any prior semesters. If the learner has paid tuition fees for more than the current semester in which they are registered, tuition fees for subsequent semesters will be refunded. (The application fee and the registration fee are non-refundable).

SCHOLARSHIPS
The college does not provide entrance scholarships, bursaries or student loans to international learners. Second and third year international learners are eligible to apply for most scholarships and/or bursaries.

LIVING EXPENSES
An average monthly estimate of living expenses (not exact figure):
• Housing: $400.00
• Meals: $200.00
• Transportation: $50.00
• Incidentals: $50.00
Total Average $700.00

RESIDENCE
Three campuses, Bay St. George, Burin and Happy Valley-Goose Bay, each have a residence. Fees for room and board at the residences range between $520 and $600 per month with optional meal plans.

OFF-CAMPUS HOUSING
Newfoundland and Labrador also has many off-campus housing options including rental apartments, rental houses, and boarding houses. There are often apartments within walking distance of the college and a public bus service at many college campuses. Learners who would like to live off-campus can contact the International Learner Coordinator for a listing of off-campus housing options. We will endeavor to work with you to find a suitable apartment.

HOMESTAY
International learners can take part in the college’s Homestay program where an international learner lives with a local family. The college matches the learner’s needs and interests with those of the host family.

What is Homestay?
College of the North Atlantic provides a Homestay Service where learners live with a Canadian family in a home-setting. Typically you will be given a private furnished room, with access to a washroom. You will normally have a key to your room, and be given a key to the house so that you can come and go as you wish. Whenever you are given the key, you are always given the responsibility to ensure that you lock the doors on departing the house.

How does the college choose a Homestay family?
You will be asked to complete a Homestay Questionnaire. This will assist us in identifying the best home and family for your specific needs. For example, perhaps you are allergic to cats - then the college will ensure that your family is one which does not have a cat in the house.

The college will inspect the learner bedrooms in all Homestay houses. The college will ensure that these rooms are spacious, clean, comfortable, and well-lit with adequate lamps, etc. The college will also interview each Homestay family to make sure that they understand the requirements of learners from different countries, and that they are willing to help learners settle into the communities and to their home. The college guarantees its Homestay – if after arrival, the learner finds that the Homestay family is not suited to his/her needs the college will assist them in locating another. The college is not, however, responsible for any costs associated with such a change; for example, the learner may lose some portion of their month’s rent, etc.

Will I be offered meals? Can I also prepare my own?
This is entirely dependent on your needs. Most Homestay arrangements include the Homestay family preparing one main meal, normally the evening meal. Most often you will be responsible for preparing your own breakfast and lunch with the food provided by the family. Lunch is often a take-with-you meal - rice, or a sandwich, piece of fruit, etc. so that you do not have to return home at lunch time to eat. As well, homestay families will often be very tolerant of learners preparing their own snacks and meals. This is something which you should indicate on the attached questionnaire and CNA will try to match your needs to your family.

What other parts of the house can I share?
You will be provided with information on the following:
• can the Homestay learner use the house telephone
• what is the time limit on calls - duration and frequency
• what is the policy on long distance calls
• can s/he install a telephone for his/her own use - or for use of his/her computer
• can s/he use the laundry facilities and how often
• will s/he be given a key to the room and to the exterior door
• can s/he use the kitchen other than meal times
• when is the rent due
• how many days notice must be given prior to leaving your Homestay family
• is there parking arrangements should you have a car

Why should I choose Homestay, and not an alternative accommodation option?
Other accommodation options are available and if you wish we can help you with those, however, we particularly recommend Homestay, especially for English as a Second Language learners. The benefits of this living arrangement are many:
• the environment is safe and secure;
• your Homestay family will be a source of advice and support throughout your stay in the province; and
• you will be given ample opportunity to practice your English on a day-to-day basis with your Homestay family while at the same time experiencing the wonderful Newfoundland and Labrador culture.

How much can I expect to pay for Homestay?
Where meals are provided for learners, Homestay will cost about CAD$150 to CAD$175 per week (about CAD$700 per month). The college does not charge any fees for its service in providing Homestay.

Everything will be different from my host family, food, clothes, culture, etc. How will I know what to do?
Within a couple of days of your arrival, the college will arrange for you to attend an orientation session at the college. You will be offered advice on all sorts of things: weather, appropriate clothing for the weather, banking, buying a car, a computer, etc., study hours, how to use the phone system, local transportation systems, computer systems, etc. We want your transition to our province, our college and the host family to be as smooth and worry-free as possible. We will be very open with you, and hope that you will be as open with us in addressing your concerns and your fears.

What do I do next?
If you are registering as an international learner in College of the North Atlantic, and you would like to register for the Homestay program as well, then you should:
• Complete the Homestay Profile and send it along with your application

Our International Learner Coordinator will contact you to make arrangements to meet you at the airport when you arrive and take you to your Homestay family. Prior to arrival, or on the day of arrival, you will be expected to pay the first month’s rent to the Homestay family. You can pay in cash, purchase a money order or open a bank account and write a cheque.

Remember, it is very, very important that you maintain contact with us. Changes in your travel times, dates, routing, etc. may mean that you will not be met at the airport upon arrival. So stay in touch!

Other Accommodation
Should you decide to choose other accommodation such as an apartment, we will provide you with lists of rental units. We will endeavor to work with you to find a suitable apartment. You will need to be very clear about which options you want when you complete the accommodation questionnaire.
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.
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:

Lisa Shallow
Manager, Alumni and Advancement
College of the North Atlantic
1 Prince Philip Drive, Room #213
P. O. Box 1693
St. John’s NL A1C 5P7
tel: 709 758-7515
fax: 709 758-7222
email: lisa.shallow@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
email: Office.AppliedResearch@cna.nl.ca
Academics

Aboriginal Bridging

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.

Certificate

• one year
• September start
• Happy Valley-Goose Bay Campus
Adult Basic Education

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 parents; letter from guidance counselor; 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

**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, Adult-Oriented Electives: Health Living 3101, 3102, 3103; History 3201, 3202; Parenting 3200; Social Science 3200.

**General Options**
- Maximum of 10 credits

**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 either the Degree and Technical Profile or the General College Profile, to a minimum of 6 credits.

Personal Development and Career Awareness (4 Credits)
Economics 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 above Adult-Oriented Electives 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 credits count 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 Assess 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 Electives 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.
PROGRAM:
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 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 resume 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.

CERTIFICATE
- One year
- September start
- Grand Falls-Windsor Campus

COURSES

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<td>TG1280</td>
<td>Introduction to Welding</td>
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Comprehensive Arts & Science Transfer: College-University

ACADEMICS

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. Either Social Science (2 credits) chosen from:
   - World History 3201 or 3231
   - World Geography 3202

or Modern/Classical Language (2 credits) at the 3000 level

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 MA1041

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:
   b. Chemistry 1102, 2102A, 2102B, 2102C, 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 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.
### Comprehensive Arts & Science Transfer: College-University – Course Descriptions

**NOTE:** The courses listed below have been developed through an agreement with Memorial; courses identified in this section are developed in collaboration with Memorial’s respective departments. These courses, referred to as College-University Suite of Courses, are the courses required for graduation from the CAS Transfer: College-University program and are different from regular college courses that transfer to other post-secondary institutions, as covered by the Council on Higher Education Transfer Guide.

**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.

**Prerequisite(s):** None

**BL1171 Principles of Biology II**
Transferable to MUN Biology 1002
This is the second 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

**CH1130 Chemistry**
Transferable to MUN Chemistry 1010
This is an introductory course in chemistry dealing with the fundamental laws of chemistry, the nature of matter and the physical states of matter, the structure of the atom, the electronic structure and the periodic table, the significant figures and scientific notations, measurements and units, writing and balancing chemical reactions, stoichiometry and stoichiometric calculations, chemical bonding, gases and gas law calculations and thermochromy and thermochemistry calculations.

**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.

**CH1131 Introductory Chemistry II**
Transferable to MUN Chemistry 1011
This course is a continuation of CH1130. 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):** CH1130 or MUN Chem 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.

**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 Chem 1051
This course is designed for students who may have career interests in chemistry or other fields of science. The course will develop further the fundamental concepts of chemistry, with emphasis on practical applications. It is designed to identify and apply principles as well as provide visualizing of their physical significance. Major topics are: chemical kinetics, principles of chemical equilibrium, acids and bases, additional aspects of acid-based equilibria, solubility and complex ion equilibria, spontaneous change, entropy and free energy, electrochemistry, and descriptive chemistry.

**Prerequisite(s):** CH1140, MA1130 or MA2100, (or MUN Chem 1050, Math 1000 or 1081).

**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.

**CM1120 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):** Minimum of 60% in either Thematic Literature 3201 or Literary Heritage 3202 or English 3201 (minimum of 60%) or meet Memorial’s admission requirements or CM1061.

**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 furthers the development of writing and analytical skills acquired in CM1120 English 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 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 tool kit will allow you to see some implications that may not be readily apparent to the general public. This will place you in a better position to ask 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

EH1101 Evolution of Earth Systems
Transferable to MUN Earth Sciences 1001
The evolution of the earth’s structure and environment through geological time are explored from the rock and fossil record. Particular emphasis is given to the geological history of North America, especially Newfoundland and Labrador.

Prerequisite(s): EH1100 or MUN ES1000

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.

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.

Prerequisite(s): French EL1420 or MUN French 1500 or High School French 3200.

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.

Prerequisite(s): EL1430 or MUN French 1501.

EL1500 Introduction to Linguistics
Transferable to MUN Linguistics 1100
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.

Prerequisite(s): None

MA1104 Algebra and Trigonometry
Transferable to MUN Math 1090
This pre-calculus course is designed to strengthen student’s 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.

Prerequisite(s): High school Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test

MA120 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
This course is an introduction to integral calculus with applications.

Prerequisite(s): MA1130 or MUN Math 1000.

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 spaces 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)

PH1120 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.

Prerequisite(s): High School Level III Academic Mathematics with a minimum mark of 70%, or a pass in Advanced Mathematics, or College MA1104 (or MUN Mathematics 1090). MA1104 (MUN Mathematics 1090) may be taken concurrently.

PH1121 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, electric charge and electric field, electric potential and potential energy, electric cur-
rent, D.C. circuits and instruments, magnetism and geometrical optics.

**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 enrolment 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, middle and beyond, social problems in the family, trends in Canadian family life.

**Prerequisite(s):** None

**SC1430 Labrador Society and Culture**  
Transferable to MUN Sociology/Anthropology 2220  
This course examines Labrador Society and Culture from its pre-contact origins through to the present day. Through coursework, guest speakers and documentaries attention will center on specific cultural groups/traits within Labrador, as well as their interrelationships, which constitute Labrador society.

**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 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.

**Prerequisite(s):** None
### Comprehensive Arts & Science Transition

Comprehensive Arts and Science (CAS) Transition is designed for high school and Adult Basic Education graduates who would like to improve their general employability skills or who are lacking either the academic courses or the required grades to meet the entrance requirements of the college program they would like to enter. The Transition 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 Transition 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 addition to courses in English, Mathematics and Sciences, students will be able to select courses from a range of General Education and Social Science courses as well as Exploration and Student Success courses. Transition courses such as Critical Thinking and Effective Learning provide 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.)

#### 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.

#### 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 or 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 providing 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.)

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**ACADEMICS**

#### Comprehensive Arts & Science Transition

<table>
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<tr>
<th>Required Courses</th>
<th>Cr</th>
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<td>CM1060 Essential English I</td>
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<td>CM1061 Essential English II</td>
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**CORE PROGRAM COURSES:**

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<tr>
<th>Program Access Courses</th>
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<tbody>
<tr>
<td>MA1040 Math Fundamentals I</td>
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<tr>
<td>MA1041 Math Fundamentals II</td>
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<td>4</td>
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</tr>
<tr>
<td>BL1020 Introductory Biology I</td>
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<td>BL1021 Introductory Biology II</td>
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<td>CH1030 Introductory Chemistry I</td>
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<td>CH1031 Introductory Chemistry II</td>
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</tr>
<tr>
<td>PH1030 Introductory Physics I</td>
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<tr>
<td>PH1031 Introductory Physics II</td>
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**General Education & Social Science Courses**

| Cr | Le | Fa |
|------------------|----|----|----|
| CM1180 College English I Reading Across the College Curriculum | 4 | 4 | 0 |
| MC1220 Productivity Tools I | 2 | 1 | 2 |
| CP1910 Internet Fundamentals | 3 | 2 | 2 |
| PS1120 Psychology I | 3 | 3 | 0 |
| PS1121 Psychology II | 3 | 3 | 0 |
| SC1120 Sociology I | 3 | 3 | 0 |
| SC1121 Sociology II | 3 | 3 | 0 |
| SC1400 Sociology-Labor Society and Culture | 3 | 3 | 0 |
| EP1100 Entrepreneurial Studies I | 4 | 3 | 2 |
| HR1100 Human Relations | 4 | 4 | 0 |
| HR2200 Human Relations | 2 | 2 | 1 |
| PS2340 Organizational Behaviour | 4 | 4 | 0 |
| CS1110 Leadership Skills | 5 | 4 | 2 |
| Exploration and Student Success Courses | Cr | Le | Fa |
| SO1570 Effective Learning | 4 | 4 | 0 |
| SO1580 Critical Thinking Across the Curriculum | 4 | 4 | 0 |
| SO1230 Career Exploration | 4 | 4 | 0 |

**Suggested Electives**

| Cr | Le | Fa |
|------------------|----|----|----|
| AC1100 Bookkeeping I | 4 | 3 | 2 |
| AC1120 Computerized Bookkeeping I | 4 | 3 | 2 |
| AC1260 Financial Accounting I | 5 | 4 | 3 |
| AC1300 Accounting | 4 | 3 | 2 |
| AH1100 Aboriginal History | 3 | 3 | 0 |
| BL1320 Anatomy and Physiology | 4 | 4 | 0 |
| BL1330 Anatomy | 4 | 4 | 0 |
| CM1100 Writing Fundamentals | 3 | 3 | 1 |
| CM1400 Technical Report Writing | 3 | 3 | 0 |
| CM1550 Creative Writing | 3 | 3 | 0 |
| CM1240 Business Communications | 4 | 4 | 0 |
| MA1400 Mathematics of Finance I | 3 | 3 | 1 |
Academics

English as a Second Language (ESL)

College of the North Atlantic offers English as a Second Language 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 cultural and linguistic backgrounds.
2. To support the language needs of students destined for post-secondary education programs, including college programs.
3. To help students understand Canadian academic and social culture, and way of life, and to help them integrate into the new 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.

Current / Future Employment Opportunities

Knowledge of and skills in English language will be a requirement for individuals who want to train in English speaking institutions or work in environments where English is the primary language spoken.

Certificate

- Completion time varies
- Start time varies
- Prince Philip Drive Campus
- Note: This program will operate with continuous intake / exit from September to June.

Courses

<table>
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<tr>
<th>Level</th>
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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

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.

APPLIED ARTS

Community Recreation Leadership

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<th>COURSES</th>
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</table>

Hours per week may vary to accommodate supervised field work experience schedule.

EMLOYMENT 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
   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

A clear Certificate of Conduct is required. This certificate can be obtained from the Royal Newfoundland Constabulary (RNC) or the Royal Canadian Mounted Policy (RCMP) and must be dated no more than three months prior to the first scheduled day of classes for the program.

Students must possess a valid First Aid Certificate and Basic Cardiopulmonary Resuscitation Certificate prior to registration. A record of immunization is also required.
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 Correction 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

Graduates 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 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.
5. To develop students’ abilities to organize and facilitate specific target groups.
6. To increase students’ skills in effective oral and written communication.
7. To provide students with introductory knowledge of psychology and sociology.
8. To develop students’ knowledge and abilities in areas such as public relations, research, crisis intervention, interviewing, and project management.
9. To provide students with direct work experience related to the human services field.

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
   - 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.

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

APPLIED ARTS

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 Correction 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

Graduates 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.

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2. To develop students’ understanding of human relations and 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.
5. To develop students’ abilities to organize and facilitate specific target groups.
6. To increase students’ skills in effective oral and written communication.
7. To provide students with introductory knowledge of psychology and sociology.
8. To develop students’ knowledge and abilities in areas such as public relations, research, crisis intervention, interviewing, and project management.
9. To provide students with direct work experience related to the human services field.

ENTRANCE REQUIREMENTS

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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 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.

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

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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Community Studies Courses

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### Applied Arts

**Digital Animation**

The explosion of technological developments, together with possibilities within the global marketplace, have created a demand for individuals trained in the development of marketable 3-D animation products. The 3-D animation field encompasses the design, development, and production of educational and recreational products. It includes the video processing of still and animated images, the mixing, and incorporation of sound and/or narration, the scripting of text, and the generation of any desired interactive components within the application.

The primary focus of the 3-D Digital Animation program is on the design and development of quality entertainment resources. Media products such as TRANSFORMERS, RATATOUILLE, and 300 exemplify the type of end product. Additionally, 3-D digital animators engage in the development of simulator training applications. Students will also acquire the skills to develop content for delivery via the World Wide Web, film and video.

**Objectives**

1. To introduce students to the microcomputer and the peripheral devices used in a 3-D production environment.
2. To provide students with the knowledge and technical training required to design and develop 3-D animation products.
3. To introduce students to the principles of design and to provide training in the application of a 3-D animation package with an entertainment focus.
4. To assist students in the acquisition of the necessary knowledge, skills, and techniques for the marketing of a 3-D animation product.
5. To assist students in the development of the appropriate attitudes, behaviours, and work habits for employment in the field.

**Employment Opportunities**

The future offers excellent potential for graduates of this program. It is projected that graduates will reasonably expect to obtain employment with related private sector firms, educational institutions, or in their own entrepreneurial ventures.

**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.

---

### 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 |                                          |    |    |    |
| MM2680  | 3D Character Animation                      | 5  | 3  | 6  |
| MM2310  | Digital Video Techniques                    | 3  | 2  | 2  |
| MM1950  | Workplace Professionalism                   | 3  | 3  | 0  |
| MM2600  | Computer Animation I (2D)                   | 3  | 2  | 2  |
| MM2700  | Multimedia Lab I                            | 2  | 1  | 2  |
| EP1100  | Entrepreneurial Studies I                   | 4  | 3  | 2  |

| Semester 5 |                                          |    |    |    |
| VA3550  | Screening & Peer Critique                  | 3  | 2  | 3  |
| MM2750  | Special Topics                             | 3  | 2  | 2  |
| MM2770  | Multimedia Lab II                          | 1  | 0  | 2  |
| CP4470  | Emerging Trends in Industry                | 3  | 2  | 2  |
| MM2830  | 3D Post-Production & Visual FX             | 4  | 3  | 2  |
| MM2850  | Digital Compositing                        | 4  | 3  | 2  |
| MM2900  | Portfolio Development                      | 3  | 2  | 3  |
Early Childhood Education

Early Childhood Education is a two-year Diploma program that is designed to prepare students to work in a variety of child care settings. Course work focuses on understanding child development, the child in the family and community, and the developing role of the student as an early childhood educator. Students complete specialized training in several areas of early childhood education, including child development, creative activities, inclusion, health and nutrition. In addition, students avail of field placements at the on-campus demonstration child care centres and at external agencies offering child care services.

OBJECTIVES
1. To provide students with a quality early childhood education program consistent with best practices in the field and legislative requirements/provincial standards in Newfoundland and Labrador.
2. To provide students with knowledge of child growth and development to support their work with children from birth to age 12 (Infants: 0-2 years; Toddlers: 2-3 years; Preschool: 3-5 years; and School Age: 5-12 years).
3. To provide students with the knowledge that will enable them to plan developmentally appropriate programs for children.
4. To develop students’ skills in analyzing and interpreting systematic observations of children’s development as the basis for planning for all children.
5. To develop students’ knowledge and skills to design both indoor and outside play environments for children.
6. To assist students in building supportive partnerships within the Early Childhood Education field, early learning environments, and the broader community.

CURRICULUM
1. Specialized Training: Early Childhood Education (e.g. child observation, child development, curriculum, guidance, creative activities, health, nutrition, family studies, and inclusion).
2. Field Placement: Students will complete 5 field placements during the program in a variety of child care settings. Provincial standards require students to complete a minimum of 720 field placement hours throughout their program.
3. General Education: Communications (oral and written), human relations.

The Graduate Certification: The graduate is awarded a Diploma of Applied Arts in Early Childhood Education. This certifies successful completion of two years 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 Child Care Services Certification. Currently, the ECE diploma is awarded Level II Certification for infant, preschool and school-age children.

Major Areas of Emphasis: Throughout the program, emphasis will be placed on the social, emotional, cognitive, and physical development of children, supporting that development, and interacting with families. This will be accomplished through enrichment of communication skills, observations and interactions in individual and group settings, and the study of current theories of and practices in child development.

FIELD PLACEMENT
Students complete five field placements during the program. Course hours during the remaining weeks of each semester in which a field placement occurs will be adjusted accordingly.

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)
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

Documentation required:
1. a current record of immunizations
2. a 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. a 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;
- Is 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, 28 Pippy Place, St. John’s, NL A1B 3X4.

Students must possess a valid First Aid Certificate to be eligible for a Diploma of Applied Arts in the Early Childhood Education Program.

APPLIED ARTS

Early Childhood Education

DIPLOMA
• Two years
• September start
• Corner Brook and Prince Philip Drive Campuses

COURSES

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<td>Foundations of Positive Behaviour Guidance</td>
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<td>EE1450</td>
<td>Creative Activities I – Art</td>
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Forty hours of Field Placement occur during the semester (10 hours lecture; 30 hours placement)

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Four weeks of Field Placement occur at the beginning of the semester; Field Placement lecture in the remaining 11 wks. Other courses will be adjusted to reflect 11 weeks of the semester.

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Four weeks of Field Placement occur at the beginning of the semester; Field Placement lecture in the remaining 3 wks. Other courses will be adjusted to reflect 3 weeks of the semester.

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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Four weeks of Field Placement occur at the end of the semester; Field Placement lecture in the first 11 wks. Other courses will be adjusted to reflect 11 weeks of the semester.

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Five weeks of Field Placement occur at the end of the semester; Field Placement lecture in the first 10 wks. Other courses will be adjusted to reflect 10 weeks of the semester.

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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.
DIPLOMA
• Length of program varies
• Start date: Fall, Winter, and Intercession

COURSES
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*Employment Required
(Currently working/volunteering for a minimum of 15 hours per week for the semester and documentation required in order to complete these courses).

APPLIED ARTS

Early Childhood Education by Distance Education

The ECE diploma program is also available by distance education, online through the college’s Distributed Learning Service (DLS). Students register each semester from a list of course offerings. These offerings are posted on the DLS site: http://dls.can.nl.ca/ece

A number of courses in the program require students to have regular and sustained contact with children. Therefore, distance students wishing to enrol in those courses will be required to be currently working/volunteering directly with children in an early childhood setting, for a minimum of 15 hours per week for the semester. Documentation confirming employment status will be required each semester in order for a student to register for one of the 19 courses where working with children is a course requirement. All distance students must submit a Confirmation of Learner Status for Course Registration form each semester.

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. For further information about prior learning assessment, refer to page 10.

CERTIFICATION
As students progress through their diploma program, they will be eligible to apply for certification through the Association of Early Childhood Educators Newfoundland and Labrador for Level I Child Care Services Certification approximately halfway through the program. Upon completion, students will be awarded a Diploma of Applied Arts in Early Childhood Education and can apply for Level II Certification in infant, preschool, and school-age classifications.

ENTRANCE REQUIREMENTS
All entrance requirements listed for the full-time program must be met. Please note the employment requirement stated above for certain course registrations. Further information on obtaining documentation may be found at: http://dls.can.nl.ca/ece

NOTE regarding Certificate of Conduct and Child Protection Records Check:
Applicants currently working in a regulated child care centre:
An applicant may submit the Confirmation of Documentation and Employment Status form (available at: http://dls.can.nl.ca/ece/) and copies of their current satisfactory Certificate of Conduct and their current satisfactory Child Protection Records Check. 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 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.

LOCATION
The distance education program is available province wide with on-campus field placements currently held at the Prince Philip Drive and Corner Brook Campuses. (Happy Valley-Goose Bay Campus may also be a possibility.)

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.

FIELD PLACEMENT
Students in the distance education program will be required to complete a maximum of five field placements. A minimum of one of the field placements must be completed at a CNA demonstration child care centre. Whenever possible, the remaining field placements will occur in a regulated child care setting within the student’s region. Each field placement course is planned in conjunction with college ECE Faculty.
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 film-making. 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
   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.

**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.

**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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APPLIED ARTS

Graphic Design

The Graphic Design program is a two-year diploma program that helps students to develop strong conceptual and technical skills for today’s dynamic Graphic Arts industry. Through both traditional techniques and cutting-edge digital tools, students will learn what it takes to gain successful employment as a Graphic Designer in a number of related fields, including advertising, website design, packaging, publication design, information design, new media, illustration and photography.

OBJECTIVES
1. To help students develop strong technical and conceptual design skills.
2. To help students explore and understand the issues involved in contemporary Graphic Design practice.
3. To train students in all of the skills relevant to this industry, both traditional and digital.
4. To provide students with hands-on knowledge of, and experience with industry-standard tools and equipment.
5. To provide a supportive, positive, creative environment in which students can grow as Graphic Designers.
6. To train students to 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 with big and small companies, as well as freelance or self-employment. The skills learned in this program are in high demand in the global communications industry.

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

PORTFOLIO REQUIREMENTS
All students must submit a portfolio. Please refer to the portfolio guidelines on page 6. A portfolio is a compilation of visual materials such as drawings, photographs, paintings or design work that reflect your interests and experience. The portfolio should consist of:
- Between 10 and 20 works, which should include no less than five freehand drawings;
- All work should be original; no copies of work by others will be accepted;
- No framed, 3-dimensional or very fragile work will be accepted;
- Portfolios should be no larger than 2 feet x 3 feet;
- There are two (2) special projects that must also be included in the portfolio. Please select any two (2) from the following:

Special Projects
1. Using visuals and text produce a work that reflects some aspect of the community in which you live. Try to explore some of your thoughts and feelings about your community in your work. How the image or images you choose and the text interact are important considerations. Please think carefully about how you will present this material, in that it could be presented as a poster, a brochure, in book form, as drawings or collages, as a web page, as a multimedia presentation or a variety of other means.
2. Design a logo for an organization you admire. A logo is a symbol that stands for and expresses the ideals of an organization. In a perfect world, the logo or symbol embodies the positive attributes that an organization wishes to be associated with (words like professional, caring, contemporary and traditional are examples of attributes that might be suitable). Try to ensure that your symbol is simple and direct, with few colours used. Your final result can be produced by hand or digitally. The final result must be no less than four (4) inches on the shortest side.
3. Design a poster for a favourite film. Include the title of the film and a visual that represents the viewer’s experience of the film. The purpose of your poster should be to get people excited about seeing the film while expressing some aspect of the emotional content of the film. In other words, if it is an action film, the combination of visuals and text should suggest “action”. If the film is romantic, then the combination of image(s) and text should suggest “romance”. Your finished size should be approximately 11 x 17 inches and can be produced in the medium or media of your choice.
4. Create a collage using a variety of materials. The collage should express one of the following words (your choice): anger, happiness, surprise, or sorrow. Make sure the combination of shapes, colours and patterns expresses the word you choose. Your finished size should be no more than 11 x 17 inches.
Graphic Production and Printing

This is a two-year diploma program designed to provide training in modern methods of graphic production. The program offers a balanced selection of traditional and electronically enhanced skills. The goal of the program is to help the student develop competencies in the areas of electronic pre-press, production technologies, and post-press operations that will help lead to successful employment.

Program topics include: problem solving, basic layout & design, electronic pre-press, offset press operation, and screen printing. Students are exposed to the computer software applications commonly used in this industry, such as page layout, design, image manipulation, and drawing. Other topics include: digital scanning, colour proofing, direct-to-film image setting, digital photography, and digital printing (colour and black & white). A schedule balanced between theory and hands-on work provides students with a positive, work-like environment that reinforces the learning process.

OBJECTIVES
1. To develop students’ personal competencies.
2. To develop students’ basic skills in electronic pre-press aspects of visual communication.
3. To develop students’ basic skills in printing press operation.
4. To develop students’ basic and specific computer skills related to the graphics arts industry.
5. To develop students’ basic skills in post-press finishing and bindery.

EMPLOYMENT OPPORTUNITIES
Graduates of the program may be employed in many areas of the Graphic Arts industry. Some of the entry level positions include: design & layout agencies, commercial printers, in-plant printers, government agencies, digital copy centres, and sign printers.

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

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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.
DIPLOMA
- Two years
- September start
- Bay St. George Campus

APPLIED ARTS
DIploma • two years • september start • bay st. george campus

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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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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
   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
**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.
APPLIED ARTS

Music Industry and Performance

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.

ENTRANCE REQUIREMENTS

1. High School

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

COURSES

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Elective Courses

A list of elective courses to be offered in each semester will be made available prior to registration. Other courses may be chosen provided that:
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.

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

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
   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.

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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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.

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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.
**DIPLOMA**

- Two years
- September start
- Bay St. George Campus

**COURSES**

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**APPLIED ARTS**

**Recording Arts**

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.

**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.
Textiles: Craft & 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 quilt, 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.

COURSES

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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.

DIPLOMA
- Two years
- September start
- Anna Templeton Center (Prince Philip Drive Campus)
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
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.

The types of course offerings have been carefully selected to provide rich practical experience, and to give students a broad exposure to the structure and mechanics of art. Through the production of a portfolio and relevant career counseling, 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.

**COURSES**

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| CM1520 | Writing for the Arts | 3 | 3 | 0 |
| HY1101 | Art History II | 3 | 3 | 0 |
| PT1101 | Introduction to Photography II | 3 | 3 | 0 |
| VA1101 | Introduction to Drawing II | 3 | 3 | 0 |
| VA1201 | Principles of Design | 3 | 3 | 0 |
| VA1301 | Materials and Techniques II | 6 | 6 | 0 |
| Elective | 3 | 3 | 0 |

| Semester 3 | Cr | Le | La |
| HY2190 | Art History III | 3 | 3 | 0 |
| VA2100 | Drawing I | 3 | 3 | 0 |
| VA2200 | Introduction to Three Dimensional Design | 3 | 3 | 0 |
| Two Studio Options | 12 | 12 | 0 |
| Elective | 3 | 3 | 0 |

| Semester 4 | Cr | Le | La |
| HY2101 | Art History IV | 3 | 3 | 0 |
| VA2101 | Drawing II | 3 | 3 | 0 |
| VA2201 | Intermediate Three Dimensional Design | 3 | 3 | 0 |
| Two Studio Options | 12 | 12 | 0 |
| Elective | 3 | 3 | 0 |

**Electives**

A list of elective courses to be offered in each semester will be made available prior to registration. Other courses may be chosen provided that:
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.

Please note that Studio Options are not available as electives.

**STUDIO OPTIONS**

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*Students should note that not all studio options are available each semester. Offerings are based on student demand and availability of instructors. Normally three or more studio options are available each semester.
BUSINESS

Business Administration/Management Entrance Requirements

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.
Business Administration

ENTRANCE REQUIREMENTS

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.

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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- Northwood University, Michigan, USA
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada
- The Payroll Association of Canada

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- Canadian Institute of Financial Planning
- Canadian Professional Sales Association
- Canadian Public Relations Society
- International Personnel Management Association - Canada

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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.
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 complex 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.

ACCRREDITATION
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.
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 (Accounting) program 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:
- Certified General Accounts of Canada (Cga)
- The Society of Management Accountants of Canada (CMA)
- Canadian Institute of Financial Planning
- 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

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

Semester 4
- AC2220 Intermediate Financial Accounting I
- AC2250 Managerial Accounting I
- AC2231 Computerized Accounting II
- CM2200 Report Writing
- EC1110 Microeconomics
- MA1670 Mathematics of Finance II
- MA1670 Microeconomics
- MR2100 Marketing II
- SD1341 Student, Career & Portfolio Development II

Semester 5
- AC3220 Intermediate Financial Accounting II
- AC3250 Managerial Accounting II
- AC3260 Principles of Internal Auditing
- PS2340 Organizational Behaviour
- SD2360 Student, Career & Portfolio Development III

Semester 6 (Intersession II)
- QJ1580 Work Experience (Accounting)
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
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- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada
DIPLOMA
- Two years
- September start
- Bay St. George, Burin, Clarenville, Grand Falls-Windsor and Prince Philip Drive 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 Business Administration certificate program.

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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.

CAREER OPPORTUNITIES

Graduates may obtain employment in a variety of areas such as private businesses, consulting agencies, associations, unions, federal/provincial/municipal governments.

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

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 of 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.

The Business Administration (Human Resource Management) program 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

Graduates of the Business Administration/Management programs may have the opportunity to transfer credits to institutions/associations such as:

- University of New Brunswick
- 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
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- The Payroll Association of Canada
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.

**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
- 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)
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**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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73
DIPLOMA
• Three years
• September start
• Carbonear, Grand Falls-Windsor and Prince Philip Drive Campuses

COURSES

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The student is required to complete all of the courses that are listed above.

BUSINESS

Business Management (Accounting)

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. (BM only)
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 (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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- The Payroll Association of Canada
BUSINESS

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 (BM only).
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
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- 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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Year 2 courses can be completed at campuses offering the Business Administration (HRM) diploma program.

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**DIPLOMA**
- Three years
- September start
- Grand Falls-Windsor and Prince Philip Drive Campuses

**COURSES**

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

**NOTE:** The first year of this program has been updated and Semesters 4-8 are subject to change

**Semester 4**
- CM2300 Report Writing 2 0 0
- EC1110 Microeconomics 4 0 0
- MA1670 Statistics 4 1 1
- MR1500 Consumer Behaviour 3 0 0
- MR1600 Professional Selling 4 3 2
- MR2300 Business Research 4 3 2
- Elective (minimum 3 credits) 3 0 0

**Semester 5**
- EC1210 Macroeconomics 4 0 0
- EP2150 Entrepreneurship 3 1 1
- MR2200 Retailing 3 2 3
- MR2350 E-Business 4 3 2
- MR2400 Marketing Communications 4 3 2
- PR2170 Project Management 2 2 1
- SD2350 Student, Career & Portfolio Development III 2 0 0

**Semester 6 (Intersession II)**
- OJ1560 Work Exposure (Marketing) 0 0 6 wks

**Year 2 courses can be completed at campuses offering the Business Administration (Marketing) diploma program.**

**Semester 7**
- EP2250 Small Business Development 4 3 2
- FN2110 Business Finance 4 3 2
- MN2600 Strategic Management 3 2 2
- MR2450 Services Marketing 3 2 2
- MR2800 Business-to-Business Marketing 3 2 2
- Elective (minimum 3 credits) 3 0 0

**Semester 8**
- EP2200 Business Planning 4 2 3
- MR2620 Sales Management 4 3 2
- MR2700 International Marketing 4 0 0
- MR3100 Current Topics in Marketing 3 3 1
- PS2340 Organizational Behaviour 4 0 0
- SD2351 Student, Career & Portfolio Development IV 1 1 0
- Elective (minimum 3 credits) 3 0 0

**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. (BM only).
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.

**ACCRREDITATION**

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.

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- International Personnel Management Association - Canada
- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada
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.

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 Certificate (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)
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.

COURSES

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Students must achieve a typing speed of 30 net words per minute at the end of Semester 2 in order to be eligible for an Office Administration Certificate from the college.
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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Students must achieve a typing speed of 40 net words per minute at the end of Semester 5 in order to be eligible for an Office Administration (Executive) Diploma from the college.

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 (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)
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 (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 Diploma**

**Office Administration (Legal)**

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 (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)

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**

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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.**

**Semester 4**

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Students must achieve a typing speed of 40 net words per minute at the end of Semester 5 in order to be eligible for an Office Administration (Legal) Diploma from the college.
DIPLOMA

- Two years
- September start
- Prince Philip Drive Campus and through Distributed Learning (DL)

**COURSES**

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

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Students must achieve a typing speed of 40 net words per minute at the end of Semester 5 in order to be eligible for an Office Administration (Medical) Diploma from the college.

Students are required to complete CPR and Red Cross or St. John Ambulance Emergency First Aid in Semester 3 or 4.

**BUSINESS**

**Office Administration (Medical)**

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 (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)

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.

**ACCRREDITATION**

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.
Office Administration (Records and Information Management)

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

**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.

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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 must achieve a typing speed of 40 net words per minute at the end of Semester 5 in order to be eligible for an Office Administration (Records and Information Management) Diploma from the college.
INFORMATION TECHNOLOGY
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, back-end 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:
   a. provide computer technical assistance, support, and advice to customers and other users
   b. install, modify and repair computer hardware and software
   c. support local-area networks (LAN), wide-area networks (WAN), network segments, and Internet and intranet systems
   d. design an organization’s computer system in which all of the components including computers, the network, and software, work properly together
   e. 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
- Computer Support Technician
Information Management (Post Diploma)

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.

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.
CONCLUDING REMARKS

The transformation of the business environment continues to challenge organizations to remain competitive. Business Analysts and Programmers play a vital role in the development and implementation of systems that enable organizations to respond to market and customer requirements. The Programmes in Business Analyst and Programmer focus on preparing students to enter this dynamic field and work effectively as a member of a team in the design, development, implementation, and maintenance of business application development environments.

The Programmes are designed to be flexible and accommodating to a wide range of student needs. They provide a strong foundation in computer science, mathematics, and business administration. Students will develop skills in problem solving, analysis, and communication, which are essential for success in the workplace.

The Programmes are tailored to meet the requirements of organizations and industries, and students will gain knowledge and skills that can be applied to a variety of business environments.

The Programmes are designed to be accessible and to accommodate the needs of students with different learning styles and preferences. Students will have the opportunity to learn from experienced and knowledgeable faculty members who are committed to providing a high-quality education.

The Programmes are recognized and accredited by professional bodies and organizations, which gives students assurance of the quality of their education and the value of their degree.
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:
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 co-operation 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**
   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 310A, 310B, 310C or 310A, 310B, 310C
   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

COURSES

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DIPLOMA
• Two years
• September start
• Through Distributed Learning

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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.

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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.

INFORMATION TECHNOLOGY

Web Development

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 co-operation 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 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.
COURSES

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*Admission into the appropriate Mathematics course will be decided by the grade in high school math.

EITHER

Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1700

OR

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 MA1700.

Note: Students may apply for an exemption from MA1700 provided they meet the appropriate high school level in Mathematics as noted above.

**Engineering Technology (First Year)**

The following Engineering Technology Programs are available and follow the first year of Engineering Technology:

**Burin Campus**

Electrical Engineering Technology (Industrial Control)

**Corner Brook Campus**

Civil Engineering Technology

Electronics Engineering Technology (General)

Process Operations Engineering Technology

**Ridge Road Campus, St. John’s**

Architectural Engineering Technology

Chemical Process Engineering Technology (Co-op)

Civil Engineering Technology

Electrical Engineering Technology (Power & Controls) Co-op

Electronics Engineering Technology

options in:

- Biomedical
- Instrumentation
- Software Engineering Technology (Co-op)
- Telecommunications Engineering Technology
- Geomatics/Surveying Engineering Technology (Co-op)
- Industrial Engineering Technology (Co-op)
- Mechanical Engineering Technology
- Mechanical Engineering Technology (Manufacturing) (Co-op)
- Petroleum Engineering Technology (Co-op)
- Process Operations Engineering Technology
- Safety Engineering Technology (Post Diploma) Co-op

**Selection Process**

The college offers a common first year in the Engineering Technologies. This initiative allows students to attend the first two semesters of an engineering technology program at the campus nearest their hometown. After completing the first two semesters, students then enter the campus which offers the program of their choice to complete the seven week Spring (May, June) 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, students progress to the Technical Intersession in the program for which a seat has already been reserved. Any student who, after registration, wishes to change his/her original program choice must apply for a Program Transfer (see below).

**Transfer Process**

If a student 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 student’s weighted average at the end of semester one. In cases where the student has been exempted from courses in the first semester, the mark(s) obtained by the student at another postsecondary institution or high school will be used in calculating the weighted average.
ENTRANCE REQUIREMENTS
Eligibility for admission to an Engineering Technology 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)
      Academic: 2204 (50% minimum), 3204 (60% minimum)
   iii. Science (4 credits) chosen from two of:
      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. 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 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 students 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:
      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 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.

TRANSFERABILITY
Currently there are a number of agreements in place with other colleges and Universities where students 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 – Master of Science
- Camosun College - Engineering Bridge Programs
- University of Victoria - Bachelor of Engineering
- Victoria University – 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.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).

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.
DIPLOMA
- Three years
- September start
- Ridge Road Campus (St. John’s)

COURSES

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<td>Architectural Graphics I</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.

Semester 4 |
| BU2250     | Electrical Systems             | 3       | 2       | 3   |
| BU2300     | Architectural Building Codes I | 2       | 2       | 0   |
| BU2410     | Building Science I             | 3       | 3       | 0   |
| CM2800     | Oral/Written Communication Skills | 3   | 3       | 0   |
| DR2330     | Working Drawings I             | 6       | 4       | 6   |
| EG1241     | Architectural Graphics II      | 3       | 2       | 4   |

Semester 5 |
| BU2301     | Architectural Building Codes II| 2      | 2       | 0   |
| BU2411     | Building Science II            | 3       | 3       | 0   |
| CF2611     | Building Materials II          | 3       | 3       | 1   |
| DR3111     | Working Drawings II            | 6       | 4       | 6   |
| EG2240     | Architectural Graphics III     | 2       | 1       | 3   |
| MA1200     | Mathematics                    | 5       | 5       | 0   |

Semester 6 (Technical Intersession II) |
| BU2260     | Plumbing Systems               | 2       | 2       | 1   |
| CG1700     | Environmental Design           | 2       | 2       | 0   |
| SD2100     | Service Learning               | 1       | 1       | 0   |
| CG1600     | Building Site Development      | 4       | 3       | 4   |

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 |
| BU2270     | HVAC                           | 5       | 4       | 3   |
| CF3610     | Building Materials III         | 3       | 3       | 0   |
| CG3230     | Procurement & Contract         | 5       | 5       | 0   |
| DR4110     | Working Drawings III Administration | 4   | 2       | 6   |
| MA1530     | Statistics                     | 2       | 2       | 1   |
| PR2750     | Capstone Project I (Seminar)   | P/F     | 1       | 0   |

Semester 8 |
| BU3300     | Building Specifications        | 3       | 3       | 1   |
| CF3440     | Structural Design              | 4       | 3       | 2   |
| CG3520     | Estimating for Buildings       | 4       | 3       | 3   |
| DR4111     | Working Drawings IV            | 4       | 2       | 6   |
| LW1610     | Management & Construction Law  | 2       | 2       | 0   |
| PR2751     | Capstone Project II            | 4       | 3       | 0   |

The architectural credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES
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.

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 students to carry out their projects and assignments.

ACCREDITATION
This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

A series of theoretical and practical subjects oriented toward the technical aspects of:
- Architectural Engineering Technologist
- Site Supervisor
- Project Manager
- Construction Manager
- Technical Sales Representative
- Construction / Building Inspector

EMPLOYMENT 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, construction firms, manufacturing industries, and supply and sales companies.

Engineers with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).
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 (CCT).  

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.

Practical education in various aspects of chemical process applications including process controls, chemical reactors, and separation processes.

Work exposure consisting of field experience, gained from compensated work terms, in the field of chemical processes.

CAREER OPPORTUNITIES
Graduates of the Chemical Process Engineering Technology program can expect to find employment as process operators and technologists in areas such as oil & gas extraction and refining, offshore petroleum production installations, petrochemical industries, primary metal manufacturing, thermal power plants and water and waste treatment facilities.

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 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.

COURSES
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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.

Learners in Chemical Process Engineering Technology (Co-op) will be required to complete SE2150, SD2220, SE2500, MH3401 and CI3812 prior to beginning their work term.

Semester 7 (Fall) |                                        |    |    |    |
| PR2640 | Technological Thesis I                            | 1  | 1  | 0  |
| PR3150 | Project Management and Financial Analysis         | 4  | 4  | 0  |
| CH2450 | Industrial Chemistry II                           | 4  | 3  | 3  |
| PO3100 | Oil and Gas Processing I                          | 4  | 3  | 3  |
| MH4401 | Refrigeration Systems                             | 4  | 3  | 2  |
| MH4510 | Prime Movers                                      | 4  | 3  | 2  |
| CI3200 | Statistical Process Control                       | 3  | 3  | 0  |
| Semester 8 (Winter) |                                        |    |    |    |
| WC1831 | Work Term II                                      | 5  | 0  | 0  |
| Semester 9 (Spring) |                                        |    |    |    |
| PR2641 | Technological Thesis II                           | 5  | 2  | 3  |
| EN3400 | Environment Management and Protection             | 3  | 3  | 0  |
| CF3200 | Materials and Corrosion                           | 3  | 3  | 1  |
| SE3500 | Process Safety/Risk Management                    | 5  | 4  | 2  |
| PO3101 | Oil and Gas Processing II                         | 4  | 3  | 2  |
| CI3821 | Process Analyzers                                 | 4  | 3  | 3  |

This program is currently under review and is subject to change.

DIPLOMA
- September start
- Three years
- Ridge Road Campus (St. John’s)
DIPLOMA

- Three years
- September start
- Corner Brook and Ridge Road (St. John's) 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.

Semester 4

| CBU120     | Building Codes & Services             | 4  |    | 0  |
| CF2530     | Strength of Materials I               | 4  | 3  | 2  |
| CF2710     | Materials & Testing I                 | 4  | 3  | 2  |
| CM2800     | Oral/Written Communication Skills     | 3  |    | 0  |
| MA2100     | Mathematics                           | 5  |    | 0  |
| SU1210     | Construction Surveying                | 4  |    | 3  |

Semester 5

| CA2500     | Highway Technology                    | 4  | 3  | 2  |
| CF2531     | Strength of Materials II              | 4  | 3  | 2  |
| CF2711     | Materials & Testing II                | 4  | 3  | 2  |
| DR1240     | CAD Drawings                          | 2  | 1  | 4  |
| MA1530     | Statistics                            | 2  | 2  | 1  |
| WA1160     | Fluid Mechanics                       | 4  | 4  | 0  |
| WA1230     | Hydrology                             | 2  |    | 2  |

Semester 6 (Technical Intersession I)

| FT1340     | Civil Engineering Technology          | 2  | 0  | 5  |
| WC1460     | Work Term                             | 5  |    | 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.

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

| CA2110     | Structures I                          | 4  | 3  | 2  |
| CG2320     | Urban Development I                   | 4  | 3  | 2  |
| CA2810     | Soils & Foundations I                 | 4  | 3  | 2  |
| CG2330     | Planning & Estimating I               | 4  | 3  | 2  |
| EN3110     | Environmental Engineering             | 4  |    | 0  |
| LW1600     | Construction Law                      | 3  |    | 0  |
| PR2250     | Capstone Project I (Seminar)          | P/F |    | 1  |

Semester 8

| CA2111     | Structures II                         | 4  | 3  | 2  |
| CA2221     | Urban Development II                  | 4  | 3  | 2  |
| CA2811     | Soils & Foundations II                | 4  | 4  | 0  |
| CG2331     | Planning & Estimating II              | 4  | 3  | 2  |
| EC1750     | Construction Economics                 | 3  |    | 0  |
| HR2130     | Industrial Relations                   | 3  |    | 0  |
| PR2251     | Capstone Project II                   | 4  |    | 0  |

Semester 9

| GI1400     | Work Exposure (Post Semester Corner Brook) |    |    | 3 wks |

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.

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.

EMPLOYMENT OPPORTUNITIES

The student, 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 off-shore and on-shore structures and facilities, testing and inspection of structural components, estimation, sales, construction surveying, and project management.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).

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 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.

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 Technician 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 with 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.

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 with restricted colour perception and motor skills.

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 (included by 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
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.

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.

Work exposure consisting of the development and management of a project followed by a three-week industry work exposure.

EMPLOYMENT 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 appropriate work experience may receive the designation of Professional Technologist (P. Tech).

### COURSES

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<td>Programmable Controllers I</td>
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<td>SEM 8</td>
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<tr>
<td>SEM 9</td>
<td>Work Exposure</td>
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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.
### CURRICULUM

**OBJECTIVES**

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).

**EMPLOYMENT OPPORTUNITIES**

A graduate of the Electrical Engineering Technology (Power & Controls) Co-op program can find employment in 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 appropriate work experience may receive the designation of Professional Technologist (P. Tech).

**ACREDITATION**

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

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**Note:** This program may not be suitable for applicants who do not have normal colour perception.

### ENGINEERING TECHNOLOGY

**Electrical Engineering Technology (Power & Controls) Co-op**

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 students to gain invaluable experience with installation, operation and maintenance practices. This is further supplemented with real-world experience provided by two work terms.

**Specific education in various aspects of the electrical power discipline including power systems, analysis, control systems, equipment and techniques and building electrical design.**

Practical education in various aspects of the electrical work and installation and maintenance of electrical equipment and correct application of the Canadian Electrical Code.

**General education consisting of Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Engineering Graphics and Technology Awareness.**

Cooperative education, consisting of two work terms, provides valuable industry experience that supports and enhances the in-class learning.

An applied research project is required for successful completion of the program.
Electronics Engineering Technology General

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 (AETTN), as well as any similar association in Canada. In addition, graduates can apply to Lakehead University and if accepted, receive full credit toward an engineering degree.

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 color perception.

OBJECTIVES
The student will be able to:
1. Develop a high level of skill in the application of electronic principles.
2. Analyze and design electronic systems using computer aided design software or traditional workbench.
3. Configure and design computer circuits and systems.
4. Assemble, maintain and troubleshoot analog and digital communication systems.
5. Install, configure and maintain industrial instrumentation and process central equipment.
6. Assemble, maintain and troubleshoot computer networks.
7. Work and communicate with professionals, as well as supervise the work of skilled technicians.
8. Think and work independently.

CURRICULUM
General education consisting of Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Engineering Graphics, Technology Awareness and Student Success.

Specific education in the theory and application of analog and digital electronics with a specialized emphasis on Telecommunications, Computer Programming and Networking, Microprocessor Interfacing, and Industrial Process Control.

Practical education employing labs and shops focused on installation, configuration, operation and maintenance training associated with electronic instrumentation, digital communications, wireless systems, programmable logic controllers, process control loops, transmitter calibration, microcontrollers, computer networks, and cabling systems.

EMPLOYMENT OPPORTUNITIES
The 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, NAVCAN, R&D and power companies.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).

DIPLOMA
• Three 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.

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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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</table>

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 students will work in hospital-based biomedical departments or medical equipment sales and service companies. Memberships in the Canadian Medical and Biological Engineering Society (CMBES) as well as the Association of Engineering Technicians and Technologists of Newfoundland (AETTN) 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 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.

### OBJECTIVES

1. To emphasize an awareness of and concern for patient safety in the health care environment.
2. To provide an engineering systems approach to problem solving with respect to the hospital environment, so that graduates can readily upgrade their knowledge and skills.
3. To develop proficiency in the safe use of specialized test instrumentation and troubleshooting techniques associated with electro-medical equipment.
4. To familiarize the student with a wide range of electro-medical devices including patient care monitoring systems, defibrillators, electrosurgery units, diagnostic medical imaging systems, clinical laboratory instrumentation, and numerous other diagnostic, therapeutic and patient care instruments.

### CURRICULUM

General education consisting of Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Engineering Graphics, Technology Awareness and Student 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 a Health Care environment through curriculum integrated labs and the biomedical practicum.

### EMPLOYMENT OPPORTUNITIES

The graduates of this program may enter the work force 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 appropriate work experience may receive the designation of Professional Technologist (P. Tech).

### COURSES

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Note: The final semester of year 3 is a 7 week work term. While the requirements for all Health Boards is not the same, it is standard practice for any government position to provide a letter of conduct from local law enforcement (typically RNC or RKP). 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 practicum. 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.
Instrumentation and Controls Engineering Technology

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.

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.

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.
3. Use basic engineering principles and knowledge of industrial control systems to help design the control and safety systems for an industrial process.
4. Apply principles of process control to analyze the performance of industrial processes.
5. Apply concepts of measurement and sensor selection to specify, install, configure, calibrate, troubleshoot, and maintain various process instruments commonly used in industry, including electronic transmitters, pneumatic devices, and control valves.
6. Maintain, calibrate, and troubleshoot various analytical instruments and analyzer sampling systems found in industrial process.
7. Demonstrate an understanding of industry standards, best practices, and workplace procedures related to safety and professionalism.
8. Prepare technical reports and presentations for effective communications in the workplace.

CURRICULUM
General education consisting of Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechnology, Engineering Graphics, and Technology Awareness.

Specific technical training focuses on various aspects of process measurement and control, including process control system design incorporating programmable control systems (PLC / DCS / ESD), human machine interfaces (HMI), and machine control and condition monitoring. Specific emphasis is also placed on industrial process analyzers and analyzer sampling systems.

Practical education through curriculum integrated labs employing industrial equipment, techniques and practices relating to the installation, operation and maintenance of transducers, transmitters, measurement and control instruments, and microprocessor-based instrumentation.

EMPLOYMENT OPPORTUNITIES
Instrumentation and Controls Engineering Technologist is a very multifaceted career choice. It prepares graduating students 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 Personnel
- Testing and Commissioning Technologist
- Instrument Designer
- Control Systems Technologist

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P.Tech.).

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, students 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 installations, inspection and maintenance of electrical apparatus in potentially hazardous explosive areas in the onshore and offshore oil and gas industries.

99
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. Learners 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.

**CAREER OPPORTUNITIES**

The graduate from the program will be a technologist who specializes in integrating computing technology into consumer and industrial products, who finds employment with hi-tech companies utilizing computers in new and innovative ways.

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 3-year program (resume writing, job search skills and interview preparation).
Telecommunications Engineering Technology (Co-op)

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, mechatronics, 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 (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.

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.

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 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 microprocessor or micro-controller based systems.
6. Analyze and design electronic systems using computer aided design software or traditional workbench

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 the theory and application of analog and digital electronics with specialized emphasis on Communication Systems, Computer Programming, Microprocessor Interfacing, and Networking.

Practical education employing labs and shops focused on installation, configuration, operation and maintenance training associated with electronics, digital communications, wireless communications, wireless systems, microcontrollers, computer networks, cabling systems, local area networks, wide area networks, carrier networks, and voice over IP (VoIP) infrastructure.

Work exposure consisting of laboratory and field experience, gained from compensated work terms, in the field of telecommunications.

CAREER OPPORTUNITIES
Job prospects for the telecommunications industry are expected to be strong in the foreseeable future. Past graduates of the program have found rewarding employment both in the service and support side of the industry as well as the consumer side – including the oil and gas sector.

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 3-year program (resume writing, job search skills and interview preparation.

The Department of Business, Government of Newfoundland and Labrador describes the industry as one of the leading local sectors:

“The Newfoundland and Labrador Information and Communication Technology (ICT) community is vibrant, diversified and growing. The industry consists of primarily small to medium-sized development companies that focus on delivering quality, innovation, flexibility and strategic value to their client base. The province’s ICT firms have invested in the brightest minds, the latest technologies and innovative quality control programs aimed at achieving high standards of excellence in surpassing industry norms.”

COURSES

DIPLOMA

- Three years
- September start
- Ridge Road Campus (St. John’s)

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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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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 (12 weeks minimum) | 5 | 0 | 0 |

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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.

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Semester 6

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Semester 8

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ENGINEERING TECHNOLOGY

Geomatics/Surveying Engineering Technology (Co-op)

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 student obtains considerable field and office experience during labs, field camps, and work terms.

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.

This program is also CAFCE (Canadian Association for Cooperative Education) accredited.

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. Extensive field training to provide experience with instrumentation and software, through Surveying Camps and practical lab sessions.

EMPLOYMENT OPPORTUNITIES

Graduates generally find employment with various departments of the federal and provincial government, crown corporations, utility companies, construction engineering, oil exploration and surveying companies both locally and internationally. 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 Bachelors Degree in Surveying Engineering.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).
ENGINEERING TECHNOLOGY

Industrial Engineering Technology (Co-op)

Industrial Engineering Technologists rely on strong technical ability, good business judgment, and superior people skills to improve safety, quality, and productivity in the production and service sectors. This unique combination of skills makes graduates attractive to employers in a wide variety of industries including manufacturing, food processing, fabrication, construction, government, consulting, and health care.

ACCREDITATION

This program is accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

This program is also a CAFCE (Canadian Association for Cooperative Education) accredited program.

The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

OBJECTIVES

1. To provide graduates with a strong technical education in industrial engineering principles and analysis techniques.
2. To provide graduates with the complementary business knowledge needed to achieve process designs that are both safe and productive while ensuring quality standards are met at minimal cost.
3. To provide graduates with problem solving and management strategies that are fundamental to success in various industry settings.

CURRICULUM


Generic engineering technology education consisting of computer based analysis and design, materials science, strength of materials, hydraulics and pneumatics, and shop processes.

Extensive industrial engineering technology education such as ergonomics, work measurement, plant layout, facility planning, production planning, and computer integrated manufacturing.

EMPLOYMENT OPPORTUNITIES

Graduates of this program may obtain employment in both the service and production sectors. Previous graduates have been successful in obtaining employment with such companies as Halliburton, Pratt and Whitney, Fishery Products International, Iron Ore Company of Canada, Newdock and the Health Care Corporation.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).

DIPLOMA

- 40 months
- 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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# Mechanical Engineering Technology

Mechanical Engineering Technologists develop a diverse technical background, good "hands-on" skills, and excellent people skills. These attributes make them well suited to employment in a wide variety of industries in both field and management related roles.

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

Through this program of study, graduates are equipped with the technical knowledge and "hands-on" skills required for:

1. the design, installation, 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.

### 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.

## 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.

## COURSES

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### Semester 1 and 2 - Refer to Engineering Technology (First Year)

#### 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.

#### Semester 4 (Fall)

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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 5 (Winter)

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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 6 (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.

#### Semester 7 (Fall)

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#### Semester 8 (Winter)

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This program is currently under review and is subject to change.
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.

Students in this program utilize the advanced technology resources available through the College’s Manufacturing Technology Center (MTC). The MTC is mandated to provide both direct and indirect support to industry through activities such as product and process prototyping. Students benefit from exposure to these “real-life” industry projects and also acquire valuable work experience through the completion of two Co-op work terms.

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

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 (PLC’s).
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.
7. Demonstrate an understanding of industry standards, best practices, and workplace procedures related to safety, manufacturing protocols, and professionalism.
8. Prepare technical reports and presentations for effective communications in the workplace.

CURRICULUM

A primary year technology core curriculum which includes courses in Communication Skills, Physics, Chemistry, Mathematics, Engineering CAD Graphics, Computer Applications, and Electrotechnology.


EMPLOYMENT OPPORTUNITIES

Career opportunities for graduates of this program exist with consulting firms, manufacturing firms, food processing plants, research institutions and government departments. Previous graduates have been successful in obtaining employment with such companies as Newdock, Brown Offshore, Iron Ore Company of Canada, Suncor, and Oceanic Ltd.

Graduates with two years of appropriate work experience may receive the designation of Professional Technology (P. Tech)

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.

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</table>
The reliance upon fossil fuels, particularly oil and gas, to supply Canada’s growing industrial and domestic requirements has increased rapidly during the past decade. However, the increasing world demands for these fuels and the growing uncertainty of traditional sources of supply have intensified Canada’s commitment to become self-sufficient in its fossil energy needs. With sustained discoveries of oil and gas resources, along the east coast and in the Arctic regions, and with proper management and development policies, this goal may be attainable. Continued oil and gas discoveries on the Grand Banks off Newfoundland have intensified interest and activities in the science and technology of developing these reserves. The three year program leading to the Diploma of Technology is designed to train technologists for all aspects of the oil and gas industry.

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

1. To provide a basic knowledge of the petroleum industry.
2. To introduce the special characteristics, challenges and constraints associated with oil and gas extraction.
3. To provide knowledge and skills related to all aspects of oil and gas exploration and production.
4. To provide knowledge of and experience in working with the specialized hardware and equipment associated with the oil industry.

CURRICULUM

A primary year of core technology curriculum which includes courses in Communication Skills, Physics, Chemistry, Mathematics, Engineering CAD Graphics, Computer Applications, and Electrotechnology.

An intermediate and advanced curriculum in the second and third years of study which consists of technical courses such as Mechanics, Fluids, Thermodynamics, Materials and Processes, Instrumentation and Technological Project (Design and Project). Discipline specific courses in Drilling, Production, Facilities, Reservoir and Geology.

A minimum twelve week work term which provides students the opportunity to gain valuable related work experience. To be eligible for work placement, students must be in clear academic standing with a minimum GPA of 2.00.

EMPLOYMENT 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 appropriate work experience may receive the designation of Professional Technologist (P. Tech).
ENGINERING 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.

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

Upon completion the graduates will:
1. Understand the process industries, focusing on pulp & paper, mineral processing, and petroleum refining,
2. Evaluate and apply chemistries underlying industrial processes,
3. Be able to apply the principles of process control and process optimization,
4. Demonstrate technical competence in environmental protection, balanced by an appreciation of market forces and cost control,
5. Work and communicate as members of a team with other professionals, as well as supervise the work of technical and non-technical persons,
6. Think and work independently.

CURRICULUM


The training program has a strong focus on 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.

EMPLOYMENT 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. Previous graduates have been successful in obtaining employment with Corner Brook Pulp & Paper, Voisey’s Bay Nickel Co. (Hydromet plant), Iron Ore Company of Canada, and Syncrude, as well as with mineral processing operators.

Graduates with two years of appropriate work experience may receive the designation of Professional Technologist (P. Tech).

DIPLMA

- Three 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.
**POST DIPLOMA**
- One year
- January start
- Ridge Road Campus (St. John’s)

**COURSES**

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**Engineering Technology**

**Safety Engineering Technology (Post Diploma) Co-op**

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 student conducts a comprehensive on-the-job identification, analysis and evaluation of the various stages necessary to initiate or upgrade an existing safety program.

**Objectives**

1. To provide an understanding of the methods of recognition, evaluation and control of hazards to people, facilities, equipment and the environment.
2. To provide a high level of knowledge and skill in the development and implementation of programs, systems, procedures and techniques to reduce the ever increasing losses associated with accidents and occupational disease in industry, government and health care.

**Entrance Requirements**

Applicants must have graduated with a three-year diploma from a recognized college or a degree from a recognized University or Polytechnical Institute. Applicants who have graduated with a two-year diploma may also be accepted if they have significant (5 year minimum) progressive industry experience as a safety professional.

**Curriculum**

The curriculum includes a series of theoretical and practical subjects oriented toward the technical and management aspects of Occupational Health and Safety. The subject matter consists of several fundamental courses in occupational health, safety and environment which are supplemented by in-depth specialized courses in such areas as Occupational Hygiene, Fire Protection, Risk Management and Systematic Safety Management.

**Employment Opportunities**

Graduates are prepared to take a proactive approach to occupational health and safety management. They may find employment as Safety Coordinators, Loss Prevention Specialists, Occupational Health and Safety Officers, Safety Auditors and Consultants. Potential employment opportunities include health care, construction, waste management, oil and gas, manufacturing and government.

**Transferability**

A number of courses in the Safety Engineering Technology (Post Diploma) Program can be used as credit toward other college programs.

**Notice**

The following conditions apply to work term WC1250 Safety Program Development.

**Sequence**

The work term must be completed in the sequence indicated in the College Calendar. Students will receive a failing grade if they do not comply with this requirement.

**Eligibility**

In order to be eligible for WC1250 Safety Program Development work term, a student must meet the following criteria:

1. Attain 100% credits in all subjects from the first semester;
2. Attain a cumulative G.P.A. of 2.00 or higher.

It is the responsibility of each student to obtain suitable employment for the work term. The college will assist with contacts, information and job leads.

All work term employment must be approved by the work term coordinator prior to the commencement of employment. A report must be submitted for each work term – detail and content of the report to be outlined by the Work Term Coordinator in conjunction with the WC1250 Safety Program Development instructor. This report must be submitted to the appropriate instructor on or before the deadline date. In special circumstances permission to submit a late report may be granted by the Work Term Coordinator. Late reports will not be graded unless prior permission is obtained.

When feasible, each student will be visited during the work term for evaluation of on-the-job performance.

Students who fail to honour an agreement to work with an employer, or who leave the work term employment without prior approval of the Work Term Coordinator, or who conduct themselves in such a manner as to cause their discharge from the job, will normally be awarded a failed work term.

A failed work term must be repeated to meet requirements for graduation, however, only one repeat is allowed.
# 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).

## Employment Opportunities

The successful graduate of this program will be employed in the welding industry to assume the following responsibilities:

- implement and enforce quality control
- interpret and apply specifications and codes
- determine inspection procedures
- carry out welding inspection and nondestructive testing procedures as defined by specifications and codes
- interpret and evaluate test results
- verify procedures and welder or welding operator qualifications
- verify the application of approved procedures
- prepare and maintain inspection records and reports
- set up equipment, lay out work to specifications and weld to prescribed standards.

## 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):

- **English (2 credits)** (minimum 60%) from: 3201 or 3202
- **Mathematics (4 credits)** chosen from:
  - Advanced: 2205, 3205 (50% minimum in each course)
  - Academic: 2204 (50% minimum), 3204 (60% minimum)
- **Science (4 credits)** chosen from two of:
  - 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. Comprehensive Arts and Science (CAS) Transition

Comprehensive Arts and Science (Transition) Certificate with the following courses:

- **Math MA1040, MA1041**
- **Two Science courses** chosen from one of the following three combinations:
  - a. Introductory Biology: BI1020, BI1021
  - b. Introductory Chemistry: CH1030, CH1031
  - c. Introductory Physics: PH1050, PH1051
  
  Note: It is strongly recommended that CAS students 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):

- **English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C**
- **Mathematics 1104A, 1104B, 1104C, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C**
- **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 included 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.

## COURSES

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<tr>
<td>SD1170</td>
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Notes: Admission into the appropriate Mathematics course will be decided by the grade in high school math.

**Either**

- Students who received at least 70% in level III Math 3200 and a pass in Math 3201 can be exempted from MA1700.

**Or**

- 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 MA1700.

**Note:** The student must apply for the exemption from MA1700 provided they meet the appropriate high school level Math and they receive an appropriate score on the math placement test.

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>
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<th>Semester 2</th>
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<tr>
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<td>Radiation Safety</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.

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<table>
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<td>WD2101</td>
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<td>WD2200</td>
<td>Welding Codes</td>
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<td>WD2300</td>
<td>Welding Failure Analysis</td>
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<tr>
<td>WD2400</td>
<td>Welding Metallurgy</td>
<td>4</td>
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<tr>
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<th>Title</th>
<th>Hrs/wk</th>
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<tbody>
<tr>
<td>CM1400</td>
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<td>ET1100</td>
<td>Electrotechnology</td>
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<td>MA1700</td>
<td>Mathematics I</td>
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<td>PH1100</td>
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<tr>
<td>SD1170</td>
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Notes: Admission into the appropriate Mathematics course will be decided by the grade in high school math.

**Either**

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**Or**

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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.
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/certification 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 were 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 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.
   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. 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 Ultrasonography, 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. 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).
      e. 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.
   5. Students enrolled in three-year Health Sciences programs 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 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, with the “Vulnerable Sector Check” indicating that the applicant is in good standing. 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 testing 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 recommended 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.).
Diagnostic Ultrasonography (Post Diploma)

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 Integrated 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).

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 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.

COURSES

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Note: UL4310 has a Clinical Component of 2.5 hours per week for 9 weeks.

Semester 2

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Semester 3 (22 weeks, May-Octobe)

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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.
HEALTH SCIENCES

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 of 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. Semester 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 four 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: 3201
      Physics: 3204
      Chemistry: 3202
      Earth Systems: 3209

7 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

   Comprehensive Arts and Science (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 three combinations:
      a. Biology: BL1020, BL1021
      b. Chemistry: CI1030, CI1031
      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
   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 entry 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.
**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 2011-2012 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 two of:
   - Biology: 3201
   - Physics: 3204
   - Chemistry: 3202
   - Earth Systems: 3209

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

Comprehensive Arts and Science (CAS) Transition Certificate with the following courses:

i. English (minimum 60%): CM1060, CM1061

ii. Math (minimum 60%): MA1040, MA1041

iii. Four Science courses chosen from two of the following three combinations:
   - 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

iii. Science from two of the following sections:
   - Biology 1101, 2101A, 2101B, 3101A, 3101B, 3101C
   - Chemistry 1102, 2102A, 2102B, 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.

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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.
HEALTH SCIENCES

Medical Laboratory 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

1. To provide the basic knowledge and skills necessary to perform clinical laboratory procedures.
2. To develop the ability to communicate effectively with the patient and with other members of the health team.
3. 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.

ACCRREDITATION

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 2011-2012 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.

PLEASE NOTE a change to the application process for the Medical Laboratory Sciences 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.

Note: To be employed in the Medical Laboratory Science field, one must have sufficiently strong eyesight to permit extended microscopic work, and normal colour perception.
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 Integrated 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 2011-2012 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.

DIPLOMA
- Three years
- September start
- Prince Philip Drive Campus

COURSES

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<td>PS1420</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 | Cr | Le | La |
| MX1510 | Clinical Radiography Orientation | 0 | 3 |
| SD1620 | Clinical Orientation | P/F | 0 | 3 |

| Semester 5 | Cr | Le | La |
| MX1200 | Radiographic Anatomy and Pathology | 4 | 0 | 4 |
| MX1210 | Radiographic Technique | 5 | 4 | 2 |
| MX2200 | Image Recording | 4 | 3 | 2 |
| MX2310 | Apparatus & Accessories | 3 | 3 | 0 |
| MX2410 | Patient Care & Safety | 3 | 3 | 0 |
| PH2200 | Radiation Physics | 3 | 3 | 0 |

| Semester 6 (Intersession II) | Cr | Le | La |
| SD1680 | Ethics in Health Care | 3 | 3 | 0 |

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 7 | Cr | Le | La |
| MX3250 | Clinical Radiography | 16 | 16 | wks |

| Semester 8 | Cr | Le | La |
| MX3260 | Clinical Radiography | 16 | 16 | wks |

Students rotate through the sites of the Eastern Regional Integrated Health Authority.

Students must possess a valid Emergency First Aid Certificate and Basic Cardiopulmonary Resuscitation Certificate to be eligible for a Diploma from the college.
Primary Care Paramedicine

Provision of emergency medical services (EMS) is a unique and vital community service. Paramedics are highly skilled health care professionals who function in the realm of EMS, initiating medical treatment for individuals in crisis situations. Based on sound technical knowledge, paramedics demonstrate rational problem solving abilities and excellent decision-making skills. The paramedic profession demands universal integrity, exemplary behavior, and dedication to the service of humanity. Paramedics adhere to the standards of ethical behavior, and their professional activities are characterized by honesty, empathy, conscientiousness, and reliability.

The Primary Care Paramedicine program at College of the North Atlantic provides students with the educational preparation to deliver pre-hospital care. The Primary Care Paramedicine program meets or exceeds the standards established by the Paramedic Association of Canada in its guidelines for the National Occupational Competencies Profiles for paramedicine. This is a challenging program that provides the student with extensive classroom experience as well as field and clinical learning.

Graduates of this program will be prepared as competent, skilled practitioners to provide pre-hospital patient care in accordance with the national standards for paramedics, with the associated delegated medical acts related to the respective levels of training.

OBJECTIVES

1. To provide the academic knowledge outlined in the National Occupational Competencies Profile (NOCP) for paramedicine, as outlined by the Paramedic Association of Canada.
2. To enable the student to apply the learned academic knowledge to field practice and patient care.
3. To prepare the student to meet the competencies for the Primary Care Paramedic (PCP) as described in the NOCP at the level of PCP.
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.

ACCRREDITATION

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):
     - English: 3201 or 3202 (minimum 60%)
     - Mathematics: 2 credits
   - English: 3201 or 3202 (minimum 60%)
   - Mathematics: 2 credits

2. **Comprehensive Arts and Science Science (CAS)**
   - Transition Certificate (Level III)
     - English (minimum 60%): CM1060, CM1061
     - Mathematics (minimum 60%): MA1040, MA1041
   - Four Science courses chosen from two of the following three combinations:
     - Biology: BL1020, BL1021
     - Chemistry: CH1030, CH1031
     - Physics: PH1050, PH1051
   - Note: It is strongly recommended that all CAS students who intend to enroll in the Primary Care Paramedicine program complete both Introductory Biology 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):
     - English (minimum of 60%): 3101A, 3101B, 3101C or

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**COURSES**

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Course Lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In semester 2, the Lecture and Lab hours will be adjusted to account for the clinical training component.

NOTE: Employers in land ambulance require that Paramedics have a class 04 driver’s licence which can be obtained through a Provincial Motor Vehicle Registration Office.
ii. Mathematics (minimum of 60%) 1104A, 1104B, 1104C, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C

iii. 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

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.

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.
Rehabilitation Assistant (OTA and PTA)

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 and/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 Therapist 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.

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.

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, 3205 (50% minimum in each course)
   iii. Science – (2 credits) chosen from one of: Biology: 3201

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

3. Three Science courses chosen from the following three combinations:
   a. Biology: BL1020, BL1021
   b. Chemistry: CH1030, CH1031
   c. Physics: PH1050, PH1051

4. Earth Systems: 3209

5. Electives (2 additional credits) chosen from any of the remaining 3000 level courses offered in the Senior High School Program.

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
   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 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.

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.
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 judgment 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.

Graduates of the program will be eligible to write the National Certification Examination administered by the Canadian Board for Respiratory Care (CBRC). Successful candidates earn the Canadian Society of Respiratory Therapists (CSRT) Registered Respiratory Therapist (RRT) credential. The CSRT is the national professional organization for respiratory therapists.

ACCREDITATION
The Respiratory Therapy program at the Prince Philip Drive campus is accredited by the Council on Accreditation for Respiratory Therapy Education (CoARTE).

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 from the Medical School, (Human Science) from Athabasca University.

Graduates may also pursue further studies in the areas of Anaesthesia Assistant, Cardiovascular Perfusion, or Sleep Medicine.

ENTRANCE REQUIREMENTS
For the 2011-2012 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 the 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.

CURRICULUM

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DIPLOMA
- Three years
- September start
- Prince Philip Drive Campus

For the 2011-2012 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.

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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During the third year of the program students will rotate through various training sites of the Eastern Regional Integrated Health Authority (RIHA). For the clinical elective course, students may have the opportunity to avail of training placements with other RIHAs 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 33 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 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 Education - Industrial Training Division. 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.ed.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.
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 students 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 subjects 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:
  - i. Advanced: 2005, 3205 (50% minimum in each course)
  - ii. Academic: 2004 (50% minimum), 3204 (60% minimum)

#### 2. Comprehensive Arts and Science (CAS) Transition
- Comprehensive Arts and Science (Transition) Certificate with MA1040 (Math Fundamentals I) and MA1041 (Math Fundamentals II).

#### 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):
  - ii. Graduation with a Different Profile (or equivalent): Mathematics (4 credits) chosen from:

#### 4. 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
You may find employment with fixed wing or rotary wing commercial airlines, aircraft manufacturers and repair and overhaul companies. In addition, there are opportunities with private operators, flying schools and government departments.

### COURSES

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INDUSTRIAL TRADES

Aircraft Structural Repair Technician

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. Students 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.

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
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. 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:
• Aircraft repair stations
• Aircraft manufacturing facilities
• Composite fabricators
• Composite repair stations
• Helicopter service centers
• Helicopter overhaul facilities
• Regional and national airlines

COURSES

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Students will receive Transport Canada credit towards the “S” license upon completion of the program.
INDUSTRIAL TRADES

Automotive Service Technician

This program is designed to provide the skills and knowledge required for employment in the Automotive Service Technician field. Automotive Service Technicians diagnose problems and make repairs.

You may obtain employment in all phases of the Automotive Service Technician trade, especially with garages and service stations. Additional training may lead to self-employment or employment as a foreperson, supervisor, or inspector, as well as work in the automotive sales and service area.

Note: This program may not be suitable for applicants who do not have normal color perception.

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 (Level III) Graduation with any of the following:
   i. Science 3101, 3102, 3103
   ii. Science 3107A, 3107B, 3107C
4. Mature Student Status
   Applicants who do not meet the educational 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.

EMPLOYMENT OPPORTUNITIES
The graduate may obtain employment in all phases of the Automotive Service Technician trade, especially with garages and service stations. Additional training may lead to self-employment or employment as a foreperson, supervisor, or inspector, as well as work in the automotive sales and service area.

CERTIFICATE
- Red Seal Certification
- 37 weeks
- Start date varies
- Bay St. George, Gander, Happy Valley-Goose Bay, and Prince Philip Drive Campuses

COURSES

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Block 5<br>Advanced Level | Hrs |
| SV1110 | Ozone Depletion Substance | 7 |
| SV2244 | Automotive Heating Systems | 10 |
| SV2245 | Air Conditioning Systems | 30 |
| SV2271 | Engine Diagnostics (Gasoline) | 45 |
| SV2181 | Engine Removal and Installation | 20 |
| SV2820 | Diesel Engine Principles | 30 |
| SV2830 | Diesel Engine Diagnostics | 30 |
| SV2840 | Diesel Engine Repair | 8 |
| SV2900 | Engine Rebuilding (Gasoline) | 60 |
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. Participate in menu planning.
4. Participate in production procedures.
5. Assemble and finish bakery products.

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. 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
You may find employment as a Baker in a specialty shop, hotel, restaurant, bakery manufacturing company.
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 motor over the base or previous layer, spread more motor on one end of each brick to be laid, and lay the bricks into position, remove the excess motor 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. You will probably work a five day 40 hour week however overtime may be required to meet construction schedules. You should have the physical strength and stamina required to work with heavy tools and material, manual dexterity and a good sense of balance, the ability to get along with others and an eye for color, line and proportion.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment.
3. Perform routine work practices.
4. Use scaffolding.
5. Use mortars, grouts and other bonding agents.
6. Build non-loadbearing and loadbearing 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
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. 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
You may find employment with masonry contractors as bricklayer apprentices in residential, commercial or industrial construction. Future career opportunities may lead to supervisor or inspector positions.

CERTIFICATE
- Red Seal Certification
- One year
- September start
- Carbonear Campus

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| Block 2 | Advanced Level                                      |     |
| BR1501 | Stone Facings                                   | 80  |
| BR1550 | Restoration                                    | 60  |
| BR2231 | Glass Block                                    | 70  |

| Block 3 | Advanced Level                                      |     |
| BR2401 | Conventional Fireplaces                            | 150 |
| BR2420 | Rumford Fireplaces                                | 60  |
| DR1131 | Introduction to CAD                               | 30  |

| Block 4 | Advanced Level                                      |     |
| BR1401 | Refractory Units                                  | 70  |
| BR1600 | Arches and Sculptured Masonry                     | 80  |
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OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Maintain tools and equipment.
5. Bend wood and composite materials.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
1. High School
   High School Graduation
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4. 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
You may find employment as a household furniture maker, cabinet making shops, interior finishing firms, and residential building developers.
INDUSTRIAL TRADES

Carpenter

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. You will probably work a five day, forty hour week however; overtime may be required to meet construction schedules.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret drawings and specifications.
4. Construct and install footing forms.
5. Prepare and install conventional floor framing.
6. Use various types of scaffolding.

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. Mature Student Status

EMPLOYMENT OPPORTUNITIES
You may be employed by general contractors, contractors specializing in specific aspects of the construction trade, custom woodworking shops, building suppliers and as general carpenters working in a self-employed capacity.

CERTIFICATE
• Red Seal Certification
• One year
• Start date varies
• Carbonear, Clarenville, and St. Anthony Campuses

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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. Expect to work non-standard hours, often alone and may take long distance trips requiring you to be away from home. You should be in good health and have good vision, have the ability to use on-board computer devices, the ability to remain alert and maintain a high level of concentration, have good interpersonal skills, good time management skills and the ability to react quickly in emergency situations.

Students successfully completing the program qualify for a Class 1 license with Class 3 and 9A endorsements.

**Note:** If you are under the age of 25 you may encounter problems obtaining employment because of the cost and complications of insurance experienced by employers.

**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.

**Note:** Under review by Provincial Government

**EMPLOYMENT OPPORTUNITIES**
You may find employment with a variety of trucking companies, manufacturing and distribution companies, retail outlets and moving companies.

**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. **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.

**AND**

5. **Drivers License and Medical**
   i. A valid Newfoundland and Labrador driver’s license – minimum of full Class 5. Must have been held for a minimum of 1 year.
   ii. Driver’s abstract with maximum of 4 points and no motor vehicle related Criminal Code convictions in the last 5 years.
   iii. Valid medical certificate for Class 1; completed on form required by the Department of Works, Services and Transportation. This form is available from any driver examiner.

**AND**

6. **Age Requirement**
   - Must be 18 years of age on or before course completion.
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: read and interpret electrical, mechanical and architectural drawings and electrical code specifications to 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. Install service entrance.
4. Install sub-panels, feeders and transformers; power generated systems, raceways systems and cables, power and lighting systems.
5. Install motors.
6. Install voice and data systems.

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 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. 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
You may find employment, career opportunities in residential wiring, commercial electrical installation and maintenance, and industrial electrical installation as well as in industrial control.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Install service entrance.
4. Install sub-panels, feeders and transformers; power generated systems, raceways systems and cables, power and lighting systems.
5. Install motors.
6. Install voice and data systems.

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:
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   High School Graduation
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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:
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   ii. Science 3101, 3102, 3103
4. 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
You may find employment, career opportunities in residential wiring, commercial electrical installation and maintenance, and industrial electrical installation as well as in industrial control.
COURSES

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.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Participate in menu planning.
4. Participate in production procedures.
5. Prepare stocks, soups, sauces, vegetables, fruit, pastas, meats, poultry, fish, salads, and hors-d’oeuvres.
6. Assemble and finish bakery products.

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:
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4. Mature Student Status
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EMPLOYMENT OPPORTUNITIES
You may find employment with hotels, clubs, restaurants, catering firms, cafeterias, institutions, homes, specialty food outlets, and work camps. As you gain experience you can move to more advanced positions such as: banquet manager, food service administrator or even executive chef.
INDUSTRIAL TRADES

Hairstylist

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. Sanitize work area, equipment and implements.
5. Prepare clients for services.
6. 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. 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
You may find employment in beauty salons but you could move into related work such as demonstrating new colors or permanent wave techniques at hair shows or in salons for staff or become a sales person for beauty supply houses.

CERTIFICATE
- Red Seal Certification
- 46 weeks
- Start date varies
- Bay St. George and Gander Campuses

COURSES

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• Red Seal certification
• 46 weeks
• Start date varies
• Bay St. George and Gander 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. You should have the ability to think logically and keep up to date with changes in technology.

**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**
   - Comprehensive Arts and Science (Transition) Certificate
3. **Adult Basic Education**
   - Adult Basic Education (Level III) with a Technical Diploma in Career-based Education

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### EMPLOYMENT OPPORTUNITIES

You may find employment in specialized repair shops, large fleet maintenance companies, transportation companies and construction companies.

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### COURSES

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INDUSTRIAL TRADES

Heavy Equipment Operator

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. Expect the work to be seasonal with a considerable amount of overtime during peak times and layoffs during the slower months. Employment could be project based which would require you to travel and be away from your family for periods of time. You should have excellent physical condition, good vision and awareness of depth, excellent eye, hand and foot coordinator and fast reflexes; and have the ability to work independently or as part of a team.

EQUIPMENT CATEGORIES
Tractor/Bulldozer
Front End Loader
Grader
Dump Truck (Off-Highway and Tandem)
Tractor/Loader/Backhoe
Excavator

Note: If you are under the age of 25 you may encounter problems obtaining employment because of the cost and complications of insurance experienced by employers.

OUTCOMES
1. Demonstrate the 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. 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 Adult Student Clause. AND
5. Drivers License and Medical
   i. 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.
   ii. Satisfactory medical report for Class 03 is required by the Department of Works, Services and Transportation.

EMPLOYMENT OPPORTUNITIES
You may find employment with general contractors that build highways or install water and sewer, residential and commercial projects, municipal projects, paving companies, pipeline companies, logging companies, mining companies, landscaping companies and demolition companies.

COURSES

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Three Courses from the following:

- HE1501 Bulldozers
- HE1511 Graders
- HE1521 Backhoes
- HE1531 Front End Loader
- HE1541 Tandem Dump Trucks
- HE1551 Off Highway Trucks
- HE1561 Excavators

Note: 24 weeks
Start date varies
Bay St. George and Placentia Campuses

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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 skills specific to heritage carpentry.
5. Demonstrate architectural styles of Atlantic Canada and Quebec.
6. 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. 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
You may be employed by general contractors, contractors specializing in specific aspects of the construction trade, custom woodworking shops, building suppliers and as general carpenters working in a self-employed capacity.
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 predictive 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. You need to be in good physical shape, have good coordination and manual dexterity, have the ability to visualize a layout by looking at plans and blueprints, and the ability to trouble-shoot mechanical systems. Your work environment is usually indoors and may be noisy at times.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Maintain tools and equipment.
3. Perform measurement and layout.
4. Use cutting and welding equipment.
5. Service shafts, bearings, seals, couplings, clutches, chain and belt driven systems, gears, compressors, pumps and conveying systems.
6. Prepare 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
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   Comprehensive Arts and Science (Transition) Certificate
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   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. 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
You may find employment in a variety of occupational settings including: industrial, mining, pulp and paper, oil refining, private companies, breweries, bakeries, bottling plants, construction, and fabrication and with various provincial and federal government agencies or departments.

CERTIFICATE
- Red Seal Certification
- One year
- September start
- Baie Verte, Corner Brook, Happy Valley-Goose Bay, Labrador West, and Placentia Campuses

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| Block 2 | Advanced Level |
| MW1560 | Coupling Alignment |
| MW1580 | Mechanical Installation Blueprints |
| MW1590 | Equipment Assembly Blueprints |
| MW1600 | Blueprint Reading and Sketching |
| MW1610 | Electric Arc Welding |

| Block 3 | Advanced Level |
| MW1620 | Metal Lathes |
| MW1630 | Milling Machines |
| MW2190 | Machinery Installation and Alignment |
| MW2180 | Compressors |

| Block 4 | Advanced Level |
| MW1480 | Tanks, Fans and Blowers |
| MW1680 | Dynamic Balancing |
| MW1740 | Preventive and Predictive Maintenance |
| MW2210 | Prime Movers I |
| MW2220 | Prime Movers II |
| MW2230 | Vibration Analysis |

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INDUSTRIAL TRADES
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. The work environment is usually indoors, in a sometimes noisy and cramped environment. You should have good communication skills, an interest in and aptitude for math, chemistry and physics, and have the ability to visualize three-dimensional objects from two-dimensional drawings.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Utilize drawings, codes, standards and government regulations.
3. Utilize tools and measuring equipment.
4. Facilitate new installations.
5. Maintain analyzers.
6. Maintain various types of field mounted equipment.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:
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   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:
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   ii. Science 3101, 3102, 3103
4. 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, instrument technicians are needed virtually anywhere there are control and metering systems. They are employed in the following industries:
- Pulp and Paper Processing
- Mining, Petrochemical, and Natural Gas
- Industrial and Commercial Manufacturing
- Industrial Construction
- Industrial Instrument Servicing
INDUSTRIAL TRADES

Insulator (Heat and Frost)

As an insulator, you would apply, remove and repair thermal and acoustical insulation on all types of industrial equipment. Duties vary from one position to another but in general, you would perform the following duties: read and interpret drawings and specification to determine insulation requirements, select the amount and type of insulation to be installed and a method of securing the insulation, measure and cut insulating material and coverings to the required shape and dimension, fit insulation around obstructions or shape insulation materials and protective coverings, remove or seal off old asbestos insulation. This work may be indoors or outdoors, sometimes in an uncomfortable or potentially hazardous area. The work schedule is usually a 40 hour, five day week with overtime during the busy season. You should have good manual dexterity and be able to work in cramped spaces, heights or hot and cold environments.

ENTRANCE REQUIREMENTS
Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. High School
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4. 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.

OUTCOMES
1. Demonstrate safe work practices and personal protection
2. Maintain tools and equipment
3. Install insulation for tanks, vessels and equipment and protective cladding
4. Insulates for soundproofing, marine applications, plumbing systems, mechanical piping, mechanical ducting
5. Performs asbestos abatement
6. Installs fireproofing

EMPLOYMENT OPPORTUNITIES
You may find employment with construction companies, Insulation contractors and industrial plants.

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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 machine operating 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 jobs. In job shops, you will make a wide variety of repairs 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. Shops may be noisy, dusty and have materials that are dirty. The work requires standing for long periods of time and sometimes working in a rushed environment. You will probably work a forty hour, five day week but may be required to work overtime during peak times. You should have the ability to estimate and measure sizes and distances accurately, work independently at tasks that require concentration and physical effort, and use your hands skillfully and quickly.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Read and interpret engineering drawings.
3. Select workplace materials.
4. Perform layout operations.
5. Set up, operate and maintain drills.
6. Set up, operate and maintain lathes.

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. 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
You will find employment in a variety of occupational settings including: machinery and equipment manufacturers, mining operations, aircraft and parts manufacturers, machine shops. As you gain experience, you may advance to positions such as inspector, foreman or superintendent or CNC machinist and programmer.

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<td>Quality Assurance/Quality Control</td>
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<td>MW2100</td>
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<td>Advance CNC Operation (NL Only)</td>
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CERTIFICATE
- Red Seal Certification
- One year
- September start
- Baie Verte and Placentia Campuses
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 host 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. You can expect to work fulltime, sometimes shift work and usually indoors in fabricating shops or factories.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Utilize various shop drawings, sketches and fabrication drawings.
3. Fabricate detail materials.
4. Perform welding activities.
5. Prepare final products for finishes.
6. Install on-site.

INDUSTRIAL TRADES
Metal Fabricator (Fitter)

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:
   1. Mathematics MA3107A, MA3107B, MA3107C
   2. Science 3101, 3102, 3103
4. 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
You will find employment in a variety of occupational settings: welding or ironworking companies, manufacturers of structural steel boilers, heavy machinery and transportation equipment, construction related industries, railways mining, oil and gas, aircraft contractors, ship building contractors and welding shops.
INDUSTRIAL TRADES

Mining Technician

Mining is a growing, changing industry that requires individuals to be trained in operating and maintaining mine/mill equipment. The Mining Technician functions as part of a mining team. Job duties may include operating a variety of production equipment and the performance of maintenance work. You will gain a good understanding of mining and plant processes.

You should enjoy the active lifestyle involved in this work and have an interest in the mining field.

An added bonus to completing the Mining Technician program is a Millwright certificate. This gives you the option of working as a Mining Technician or a Millwright.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Maintain tools and equipment.
3. Perform measurement and layout.
4. Use cutting and welding equipment.
5. Service shafts, bearings, seals, couplings, clutches, chain and belt driven systems, gears, compressors, pumps and conveying systems.
6. Prepare for installation and maintenance of components and systems.
7. Participate in self-managing teams and to work and learn in an “industrial laboratory”

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 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, 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. 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 one of the following three combinations:
         - Biology: BL1020, BL1021
         - Chemistry: CH1030, CH1031
         - Physics: PH1050, PH1051

3. Adult Basic Education
   - 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:
         - 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 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, 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
You may find employment as part of the Operations and Maintenance Teams in a mining environment or as a millwright apprentice. Employment rates for Mining Technician graduates have been strong with 80-90% of current graduates finding employment in the local area. This demand for workers is expected to continue.

DIPLOMA
- Two years
- September start
- Labrador West Campus

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This program exposes you to the safe and efficient operation of Mobile Cranes. Some of the duties include: service and operate booms mounted on crawlers 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 pendant 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. The work environment is outdoors, often in noisy, dusty conditions. You will probably work a forty hour, five day work week. Overtime may be required to meet construction deadlines. You should have good vision, coordination and manual dexterity, the ability to work at heights, work as part of a team, and communicate with ground crews usually using hand signals and voice communication.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Assess site hazards.
3. Operate equipment safely.
4. Inspect and maintain wire ropes, slings and hardware.
5. Prepare the site.
6. Position the crane

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. 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.

AND
5. Drivers License and Medical
   i. A valid Newfoundland and Labrador driver’s license – minimum of full Class 5. Must be held for a minimum of 1 year.
   ii. 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. Experienced crane operators may advance to supervisory positions or set up your own businesses.
Motor Vehicle Body Repairer (Metal and Paint)

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. You will probably work a forty hour, five day week with occasional overtime. The work environment is indoors and noisy. You should have the strength and stamina to handle heavy tools and parts, good manual dexterity, good eye for detail, good color vision, the ability to keep up to date with the annual changes manufacturers make in plastics, electronics, metals, supplemental restraints and paints.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment.
3. Repair and replace trim.
4. Repair and replace structural components.
5. Repair and replace panels.
6. Replace structural and non-structural glass.

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. 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
You may find employment in all phases of the Motor Vehicle Body Repairer (Metal and Paint) trade, especially with garages and service stations. Additional experience and training may lead to self employment or employment as a shop foreperson, inspector, or claims investigator, as well as to work in the automotive sales and service area.

COURSES

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<tr>
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Block 2 Advanced Level

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Block 3 Advanced Level

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<td>Non-Structural Components</td>
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<td>AB2821</td>
<td>Electrical and Electronic Repairs</td>
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<tr>
<td>AB2830</td>
<td>Damage Analysis of Conventional Frames and Unitized Bodies</td>
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Block 4 Advanced Level

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<td>AB2930</td>
<td>Conventional Frame Repair</td>
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<tr>
<td>AB2940</td>
<td>Damage Analysis and Estimating Costs</td>
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</table>
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](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. Acquire basic 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 workplace.
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:
     - Mathematics MA3107A, MA3107B, MA3107C
     - Science 3101, 3102, 3103

4. **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**
You may find employment with pipeline, refinery and other oil and gas companies, construction companies, aircraft manufacturing, metal fabrication companies.
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 tools or equipment, 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, troubleshoot and repair malfunctioning oil burners, and their components and controls, perform scheduled maintenance service on oil and solid fuel heating systems. You will probably work a forty hour, five day week. Good communication skills, good manual dexterity and the capability to keep up with new technology are assets for this program.

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. 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
You will find employment with heating-systems installation and service companies. With experience you could advance to supervisory positions.

CERTIFICATE
- Red Seal Certification
- One year
- September start
- Seal Cove Campus

COURSES

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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. You should have good physical strength, stamina and agility and have the ability to work alone or with others. The work environment varies, weather when you are roughing in, more protection for finishing and often comfortable conditions for maintenance and repair work. You will probably work a five day, forty hour week with overtime when required.

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. Prepare pipe for installation.
5. Install support systems.
6. Install private sewage 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:
   1. Mathematics MA3107A, MA3107B, MA3107C
   2. Science 3101, 3102, 3103
4. 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
You will find employment with construction contractors and plumbing repair shops. As you gain experience, you may move into a supervisory position or estimator. You also have the option of becoming self-employed.
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 procedures, maintain a daily log of operation, maintenance and safety activities, investigate and report on safety related accidents or incidents, write reports about plant operation. Your working conditions may vary considerably, you may be exposed to high noise levels, high temperatures, high humidity and all types of outdoor weather or you may work in a climate controlled environment. You should have good vision, hearing, manual dexterity and eye-hand co-ordination, good communication skills, good organizational and decision-making skills and the ability to work well with others.

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. Demonstrate the practical skills necessary for a 4th Class, Power Engineer.
2. Develop and practice proper safety procedures.
3. Demonstrate problem solving skills and good work practices.
4. Provide related skills to further enhance my learning and working abilities.

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. 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
You may obtain employment as a 4th Class Power Engineer in most large plants or buildings in both the public and private sector. These may include government buildings (Municipal, Provincial, Federal); health and educational institutions; manufacturing, production and service industries such as mining, fish plants, pulp and paper, electric utilities, refineries, bottling companies, food processing plants, etc.
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 arresters, 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. You should have good coordination and manual dexterity, good hearing and color vision, have the ability to work at heights and in extreme weather conditions and you must be able to work as a member of a team and adapt to changing tasks and locations.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Interpret occupational documents.
3. Use and maintain tools and equipment.
4. Install poles, transmission towers, overhead conductors, underground and overhead cable, lighting systems, voltage control equipment.
5. Maintain transmission and distribution 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. 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.

AND
5. Students must hold a class 5 drivers license prior to admission to the program.

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
Powerline technicians are employed by utility companies and their contractors.
Refrigeration and air conditioning mechanics plan, prepare and lay out any cooling systems or heat-cooling system that is used in a residential, commercial, institutional or industrial refrigeration setting. Some of the duties include: install and start up refrigeration and air cooling systems, connect piping and maintain service, repair and replace refrigeration and air cooling systems components and accessories, work from blueprints or verbal instructions to mount or place system components, assemble and install refrigeration or air conditioning components such as compressors, condensers, evaporators and metering devices, install and calibrate related controls (including writing), start up systems, test lines to detect leaks and record the readings taken to ensure that the system is functioning satisfactorily. In the case of a malfunction, you will be expected to diagnose the problem and fix the unit by replacing or repairing controls, electrical wiring and other parts. Your work environment depends on the job. It could be located on a roof top or in a compressor room. Good co-ordination and manual dexterity, good physical strength and stamina and the ability to work well with others are assets for this program.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Utilize mechanical and architectural drawings, acts, codes, standards, legislation, and service and operating manuals.
3. Operation and maintain tools and equipment.
4. Coordinate refrigeration and air conditioning installation and maintenance.
5. Perform system components, accessories and material acquisition and handling.
6. Plan installation of refrigeration and air cooling 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
3. Adult Basic Education

Refrigeration & Air Conditioning Mechanic

EMPLOYMENT OPPORTUNITIES
You will find employment with companies who install and service air conditioning and refrigeration systems. As you gain experience you can advance to supervisory positions or even start your own business.

CERTIFICATE
- Red Seal Certification
- One year
- September start
- Ridge Road Campus

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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. Self 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. Work with carpenter skills and knowledge in construction techniques related to building sciences, green technologies, waste management, estimation/budgeting and scheduling.
5. Make application to register as a carpenter apprentice in the province of Newfoundland and Labrador.
6. Work and 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 (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile or Degree and Technical College Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

4. 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 obtain employment as a Renovation Technician with contractors, as a self employed entrepreneur focused on residential and commercial building renovations, site supervisor, estimator, site project manager/foreperson, or as apprentice carpenters.
Sheet Metal Worker

Sheet Metal Workers 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, troughing 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. You will work both indoors and outdoors in all types of weather. You should have good eye-hand co-ordination, good eye sight and manual dexterity, be able to visualize a finished product from a drawing, be able to stand for long periods of time, do some heaving lifting and carrying, and work in high, awkward and noisy places.

**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.

**COURSES**

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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 watercraft and outboard motors, and fuel-powered tools such as chainsaws and lawnmowers. 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. Technicians usually work indoors in shops and tend to work in a standing position for long periods of time. Most times you will work a forty hour, five day work week. However, some evening, weekend or holiday work may be required during busy months.

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.

OBJECTIVES
1. To provide the appropriate learning opportunities required for employment.
2. To assist students with the development of appropriate attitudes and behaviour that are conducive to working with other persons in this occupation.
3. To develop and strengthen related knowledge and skills in subjects that complement and support the trade.

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:
   1. Mathematics MA3107A, MA3107B, MA3107C
   2. Science 3101, 3102, 3103
4. 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
You may find employment in a variety of mechanical settings, including the service, sales and/or parts departments of the many recreational vehicle and rental dealerships that exist throughout the province. In addition, opportunities exist with independent garages, service stations, and repair shops, as well as manufacturers. Additional experience and training may lead to positions such as foreperson, supervisor, or inspector. Opportunities for self-employment are quite good in this area.

CERTIFICATE
- One year
- Start date varies
- Bay St. George Campus

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| Block 2 | Advanced Level |
| SR2100 | Lawn & Garden Equipment Servicing Fundamentals | 45 |
| SR2200 | Snowmobile Servicing Fundamentals | 60 |
| SR2300 | Motorcycle & AIV Servicing Fundamentals | 60 |
| SR2400 | Marine Equipment Servicing Fundamentals | 75 |

| Block 3 | Advanced Level |
| SR1500 | Small Equipment Transmissions | 120 |
| SR2310 | Motorcycle & AIV Troubleshooting & Repair | 120 |

| Block 4 | Advanced Level |
| SR2110 | Lawn & Garden Equipment Troubleshooting & Repair | 80 |
| SR2210 | Snowmobile Troubleshooting & Repair | 80 |
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<td>PF2800</td>
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## OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Perform common installation processes.
4. Plan lifts.
5. Hoist loads.
6. Install high and low pressure process steam systems.

## ENTRANCE REQUIREMENTS

Eligibility for admission requires the applicant to meet one of the following academic criteria:

1. **High School**
   - Graduation from High School
2. **Comprehensive Arts and Science (CAS) Transition**
   - Comprehensive Arts and Science (Transition) Certificate
3. **Adult Basic Education**
   - Graduation with General College Profile or Business Related College Profile
4. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites, 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

You may find employment with pipeline construction contractors and sub-contractors, thermal or steam generating plants, manufacturers, utility companies, oil refineries, gas plants, paper mills and chemical plants. As you gain experience you can move to a supervisory position such as a foreman, sub-contractor, contractor and construction superintendent.
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 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. Your work environment will vary considerably from one job to another. You may be in a heated shop or on site working in all kinds of weather. Good vision, hearing and sense of smell to diagnose problems, strength and stamina to work in cramped or awkward positions, ability to work as part of a team and ability to think logically and keep up to date with changes in technology are assets for this trade.

**OUTCOMES**
1. Demonstrate safe work practices and personal protection.
2. Maintain tools and equipment.
3. Diagnose and service engine and support systems.
4. Diagnose and service all kinds of systems.
5. Diagnose and service electrical 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
   - Comprehensive Arts and Science (Transition)
   - High School Graduation
   - 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. **Matric 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**
You will find employment with small repair shops, large fleet maintenance companies, transportation companies and construction companies.

**CODE TITLE**
- AP1100 Introduction to Apprenticeship 15
- SV1101 Safety 30
- SV1110 Ozone Depleting Substances 7
- SV1121 Gaskets and Seals 5
- SV1131 Electrical and Electronic Principles 55
- SV1141 Introduction to Hydraulics 30
- SV1151 Service Information Systems 25
- SV1166 Tools and Equipment 30
- SV1181 Fasteners, Tubing, Hoses and Fittings 30
- SV1190 Lubrication and Fluid Services 30
- SV1201 Start, Move and Park Vehicle 5
- SV1211 Tires, Rims and Wheels 25
- SV1261 Vehicle Hydraulic Brake Systems 60
- SV1271 Basic Air Brake Systems 60
- SV1281 Drive Lines 25
- SV1301 Cutting, Heating and Welding 30
- SV1303 Engine Principles 45
- SV1310 Cooling Systems 30
- SV1331 Intake and Exhaust Systems 25
- SV1361 Diesel Fuel Supply Systems 25
- SV1365 Non-Diesel Fuel Systems 25
- SV1370 Batteries 15
- SV1401 Gauges 11
- SV1451 Steering Systems 30
- SV1491 Conventional Lighting Systems 15
- SV1501 Wiring Harness and Accessories 15
- SV1800 Hoisting and Lifting 15
- SV1810 Preventative Maintenance 5
- SV1820 Bearings 6
- SV1830 Metallurgy 5
- SV2361 Hydraulic Fittings, Piping, Tubing and Hoses 25
- SV2391 Reservoirs, Coolers and Filters 15
- TS1510 Occupational Health and Safety 6
- TS1520 WHMIS 6
- TS1530 Standard First Aid 14
- WD2330 MIG Welding 30
- CM2150 Workplace Communications 45
- MA1060 Basic Math 60
- MC1050 Introduction to Computers 30
- MR1220 Customer Service 30
- SD1780 Workplace Skills 30
- SD1790 Job Search Techniques 15
- SB1720 Entrepreneurial Awareness 15
- SP2330 Quality Assurance/Quality Control 30

**Block 1**
- **Advanced Level**
  - SV1321 Engine Lubrication Systems 15
  - SV2266 Diesel Fuel Injection Systems 45
  - SV2560 Preventative Maintenance Inspections 15
  - SV2591 Turbochargers, Blowers and Intercoolers 25
  - SV2605 Diesel Engine Overall 120
  - SV2611 Base Engine Diagnostics 20

**Block 2**
- **Advanced Level**
  - SV1291 Drive Axle Assemblies 45
  - SV1380 Starting Systems 30
  - SV1386 Starting Aids 15
  - SV1391 Charging Systems 30
  - SV1480 Heating and Ventilation Systems 15
  - SV2310 Electric Brakes 15
  - SV2400 Hydraulic Pumps and Motors 30
  - SV2661 Electronic Ignition Systems 30
  - SV2670 Air Conditioning Systems 30

**Block 3**
- **Advanced Level**
  - SV1441 Front Axles and Suspension Systems 45
  - SV1461 Rear Axles and Suspension Systems 60
  - SV1480 Dual Air Brake Systems 45
  - SV2691 Frames and Chassis 25
  - SV1245 Wheel and Axle Alignment 25
  - SV2710 Trailer Coupling Devices 20
  - SV2728 Trailers 20

**Block 4**
- **Advanced Level**
  - SV2265 Vehicle Management Systems 60
  - SV2350 Torque Converters 30
  - SV2365 Automatic/Power Shift 35
  - SV2571 Engine Brakes and Retarders 20
  - SV2651 Electronically Controlled Fuel Injection Systems 45
  - SV2771 Emission Control Systems 20
  - WD2320 SMMW Welding 30
COURSES

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OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Perform basic rigging operations.
3. Comply with codes, specifications and standards.
5. Verify material.

EMPLOYMENT OPPORTUNITIES

You will find employment as an apprenticed welder in machine shops, fabrication plants, garages, production plants, shipyards, and oil rigs, provincial, federal and municipal governments. Additional experience and training leads to employment opportunities such as foreperson, supervisor, inspector, and engineering assistant.

INDUSTRIAL TRADES

Welder

Welders join and server metal components, such as girders, vessels, piping and other metal components in beams, and servers 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, weld parts together. You will probably work a forty hour, five day work week however, overtime may be required to meet project deadlines. Your work environment could be outdoors on a construction site or in a repair shop. You should have patience, good manual dexterity, good vision, and good hand-eye coordination, and the ability to concentrate on detailed work.

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. Mature Student Status

You will find employment as an apprenticed welder in machine shops, fabrication plants, garages, production plants, shipyards, and oil rigs, provincial, federal and municipal governments. Additional experience and training leads to employment opportunities such as foreperson, supervisor, inspector, and engineering assistant.
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 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 materials required and plan the sequence of tasks.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Perform basic rigging operations.
3. Comply with codes, specifications and standards.
5. Verify material.
7. Utilize various shop drawings, sketches and fabrication drawings.
8. Fabricate detail materials.
10. Install on-site.

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 II
   - Science 3101, 3102, 3103
4. 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
You will find employment as an apprentice in machine shops, fabrication plants, garages, production plants, shipyards, and oil rigs, Provincial, Federal and Municipal Governments. Additional experience and training leads to employment opportunities such as foreperson, supervisor, inspector, and engineering assistant.

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INDUSTRIAL TRADES

[Image of a page with text and a table.]
The Adventure Tourism – Outdoor Recreation program is a comprehensive education and training program designed to prepare individuals for challenging careers in the fastest growing sector of the tourism industry. This program provides students with a solid foundation in the natural sciences and social history of the province of Newfoundland and Labrador and a strong base in outdoor leadership skills and techniques. The ability for graduates to safely deliver high quality environmental and cultural interpretation to a broad audience in an adventure setting is a fundamental goal of the program. The program addresses “excellence” by assisting students in becoming confident 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 industry.
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

Adventure Tourism – Outdoor Recreation 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 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 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

Students who have graduated from the Adventure Tourism – Outdoor Recreation program can apply for entry with...
advanced standing at a number of Bachelor of Tourism, Bachelor of Science and post-diploma programs in Canada. 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 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. Science (4 credits) (Minimum 60%) two of which must be chosen from:
      - Biology: 3201
      - Physics: 3204
      - Chemistry: 3202
      - Earth Systems: 3209
   **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 three combinations:
      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)**
   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:
      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.

**Note:** Entrance requirements for this program are currently under review and are subject to change for students being admitted to the program, September 2010. If proposed changes are approved, students may be required to provide a completed Pre-Admission College of the North Atlantic Health Assessment Form, prior to registration, verifying suitability for the program.

**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 skiing.

Students will be required to complete an informed 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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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 subjects 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, the student is required to acquire appropriate clothing for outdoor work.

Tourism & Natural Resources

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 studies and obtain a Degree 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 (Post Diploma)

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.

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.

CERTIFICATE

• Three semesters
• September start
• Bay St. George Campus

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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)
Incident Command System (ICS 200) (2 Days)
Hazardous Materials (Hazmat) Level 1 (1 Day)
Diploma

- Three years
- September start
- Corner Brook Campus

**COURSES**

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Admission into the appropriate Mathematics course will be decided by the grade in high school math.

**EITHER**

Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1100.

**OR**

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 2**

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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.

**Semester 4**

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**Semester 7**

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**Semester 8**

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**Semester 9 (Intercession II)**

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The Environmental Industry is one of the fastest growing sectors of the economy. The industry needs a supply of skilled technical people to meet the challenges of the 21st century by reducing environmental pollution and maintaining the well being of ecosystems. Students of this Environmental Technology Program will receive multidisciplinary training in chemical, biological, and engineering science focused on dealing with environmental pollution and sustainable development.

The college offers a three-year Co-operative Education diploma program in Environmental Technology. The co-operative education component affords graduates 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**

The 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**

Many graduates have gone on to pursue studies with advanced standing at a number of Canadian universities. Students who have graduated from the Environmental Technology program can apply for entry with advanced standing at a number of Bachelor of Environmental Science, Environmental Studies and post-diploma programs in Canada. 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 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)
   - 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.
With increasing emphasis on sustainable development, integrated resource policy and ecosystem based management across Canada and 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 subjects with the Forestry Resources Technician program, has been designed to enable students with a specific interest in fish and wildlife to participate in studies directed specifically towards their career goals. The program reflects the trend towards 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
Many graduates have gone on to pursue studies with advanced standing at a number of Canadian universities. Students who have graduated from the Fish and Wildlife Technician program can apply for entry with advanced standing at a number of Bachelor of Science and post-diploma programs in Canada. 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):
   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: MA1400, MA1411
   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 II) 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
      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.

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.

NOTE: Students should be aware that additional fees and expenses apply for most of these certifications and for field camps, tours and On-the-job Training.

Students graduating from the Fish and Wildlife Technician program can complete the Forest Resources Technician program with one additional year. Interested students must begin their studies in the First Technical Internship of the Forest Resources Technician program.

This program is currently under review and it is anticipated that changes will occur.

DIPLOMA

- Two years
- September start
- Corner Brook Campus

COURSES

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*Admission into the appropriate Mathematics course will be decided by the grade in High School math.

EITHER

Students who received at least 70% in Level III Math 3200 or a pass in Math 3201 can be exempted from MA1100

OR

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 2

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<td>Silvics/Dendrology I</td>
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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.

Semester 4

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CERTIFICATIONS

In addition to the formal semester courses listed in the program of studies, students in the Fish and Wildlife Technician program are required to obtain certification in the following areas over the two-year period:

- Canadian Firearm Safety Course / Hunter Education
- Paddle Canada (Introduction to Lake Canoeing)
- Coastal Navigation
- Pleasure Craft Operators Card
- Restricted Operators Certificate (Maritime) DSC Endorsement
- Standard First Aid & CPR/AED
- WHMIS/ODS
- AV Safety Training
- Wilderness First Aid
- Trapper Education Certificate
DIPLOMA
- Two years
- September start
- Corner Brook Campus

**Forest Resources Technician**

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 find 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**
Many graduates have gone on to pursue studies with advanced standing at a number of Canadian universities. Students who have graduated from the Forest Resources Technician program can apply for entry with advanced standing in a number of Bachelor of Science, Forestry and post-diploma programs in Canada. 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, 3205 (50% minimum in each course)
     OR Academic: 2200 (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:
     - 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):
     - English: 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
     - 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.

**COURSES**

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*Admission into the appropriate Mathematics course will be decided by the grade in High School math.

**EITHER**
- Students who received at least 70% in Level III Math 3200 or a pass in Math 2201 can be exempted from MA1100
- OR Students who received a combined average of 70% in 2004 and 3204, or a pass in both of 2205 and 3205 can be exempted from MA1100.

**Students must apply for the exemption.**

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<td>Wood Products</td>
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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.

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</tr>
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<td>LW2211</td>
<td>Law Enforcement</td>
</tr>
<tr>
<td>MN1800</td>
<td>Integrated Resource Management</td>
</tr>
<tr>
<td>PR2660</td>
<td>Technical Project &amp; Presentation</td>
</tr>
</tbody>
</table>

**Semester 6 (Intersession II)   |        |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Q1300</td>
<td>On-the-job Training</td>
</tr>
</tbody>
</table>

**CERTIFICATIONS**
In addition to the formal semester courses listed in the program of studies, students in the Forestry Resources Technician program are required to obtain certification in the following areas over the two-year period:

- AV Safety Training
- Canadian Firearms Safety Course / Hunter Education Paddle Canada (Introduction to Lake Canoeing)
- Pleasure Craft Operators Card
- Sailing
- Standard First Aid & CPR/AED
- WHMIS/OH&S

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 graduating from the Forest Resources Technician program can complete the Fish and Wildlife program with one additional year. Interested students must begin their studies in the first Technical Intersession of the Fish and Wildlife Technician program.
TOURISM & NATURAL RESOURCES

GIS Applications Specialist (Post Diploma)

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 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 pre-defined 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, applications 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.

COURSES

<table>
<thead>
<tr>
<th>NO.</th>
<th>TITLE</th>
<th>Cr</th>
<th>Le</th>
<th>La</th>
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<tbody>
<tr>
<td>GS1110</td>
<td>Cartographic Concepts</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<tr>
<td>GS1210</td>
<td>GIS Database Principles</td>
<td>2</td>
<td>1</td>
<td>2</td>
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<tr>
<td>GS1310</td>
<td>Principles of GIS</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>GS1410</td>
<td>Problem Solving and Programming</td>
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<td>2</td>
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<td>GS1510</td>
<td>Remote Sensing and Image Analysis</td>
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<td>GS1710</td>
<td>Web Programming</td>
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<td>GS2310</td>
<td>Project Planning and Management</td>
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<td>GS2110</td>
<td>Customization of GIS Applications</td>
<td>3</td>
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<tr>
<td>GS2210</td>
<td>Database Design and Development</td>
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<tr>
<td>GS2410</td>
<td>Spatial Analysis and Applications</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<tr>
<td>GS2510</td>
<td>Spatial Statistics</td>
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<td>GS2710</td>
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<td>GS2910</td>
<td>Advanced Remote Sensing</td>
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<td>GS3410</td>
<td>Spatial Database Applications</td>
<td>3</td>
<td>2</td>
<td>3</td>
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<tr>
<td>GS3710</td>
<td>Advanced Topics in Geomatics</td>
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<tr>
<td>GS1610</td>
<td>Surveying and Mapping</td>
<td>3</td>
<td>2</td>
<td>3</td>
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<td>GS3210</td>
<td>Major GIS Project</td>
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<td>3</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.
## Courses

<table>
<thead>
<tr>
<th>Code</th>
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<th>Hrs/wk</th>
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<tbody>
<tr>
<td>CM1450</td>
<td>Writing Fundamentals</td>
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<tr>
<td>HS1130</td>
<td>Dining Room Operations</td>
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<td>HS1340</td>
<td>Bar &amp; Beverage Operations</td>
<td>3 2 2</td>
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<tr>
<td>MC1150</td>
<td>Productivity Tools</td>
<td>4 3 2</td>
</tr>
<tr>
<td>TR1600</td>
<td>Newfoundland and Labrador Tourism Destinations</td>
<td>4 3 2</td>
</tr>
<tr>
<td>TR1610</td>
<td>Introduction to Tourism &amp; Hospitality</td>
<td>4 4 0</td>
</tr>
<tr>
<td>CM1200</td>
<td>Oral Communications</td>
<td>3 3 0</td>
</tr>
<tr>
<td>CM2100</td>
<td>Workplace Correspondence</td>
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<td>HR2400</td>
<td>Professional Development</td>
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</tr>
<tr>
<td>HS1710</td>
<td>Rooms Division Systems</td>
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<tr>
<td>MR1270</td>
<td>Customer Service in the Hospitality Industry</td>
<td>3 3 0</td>
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<tr>
<td>TR1660</td>
<td>Newfoundland and Labrador Interpretation</td>
<td>4 4 0</td>
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<tr>
<td>GJ1450</td>
<td>Field Work I</td>
<td>6 wks</td>
</tr>
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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.

**Note:** Students may qualify for a Certificate in Hospitality Services, if exiting at the end of Year I.

<table>
<thead>
<tr>
<th>Semester 4</th>
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<th>Le</th>
<th>La</th>
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<tbody>
<tr>
<td>AC1120</td>
<td>Computerized Bookkeeping I</td>
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<tr>
<td>EP1100</td>
<td>Entrepreneurial Studies I</td>
<td>4 3 2</td>
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<tr>
<td>HM2150</td>
<td>Food &amp; Beverage Management</td>
<td>4 3 2</td>
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</tr>
<tr>
<td>HM2290</td>
<td>Hospitality Supervision</td>
<td>4 3 2</td>
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</tr>
<tr>
<td>HM2420</td>
<td>Hospitality Facilities Management</td>
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<tr>
<td>Elective</td>
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</table>

<table>
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<th>Cr</th>
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<tbody>
<tr>
<td>HM2270</td>
<td>Hospitality Marketing</td>
<td>3 3 0</td>
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<tr>
<td>HM2220</td>
<td>Events Management for the Hospitality Industry</td>
<td>5 4 2</td>
<td></td>
</tr>
<tr>
<td>HR1200</td>
<td>Human Resource Management</td>
<td>3 3 1</td>
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<tr>
<td>HS1540</td>
<td>Emerging Trends in the Hospitality Industry</td>
<td>3 3 0</td>
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</tr>
<tr>
<td>LW1130</td>
<td>Tourism/Hospitality Law</td>
<td>4 4 0</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3-4</td>
<td>3-4 0</td>
<td></td>
</tr>
</tbody>
</table>

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.

### 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.

### Transferability to Other Programs

This program was designed to offer graduates many credit transfer opportunities across Canada. Students who have graduated from the Hospitality Tourism Management program can apply for entry with advanced standing for a number of Bachelor of Tourism and post-diploma programs in Canada. College of the North Atlantic has developed credit transfer agreements with several Canadian universities. 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 GJ1450. Additional expenses will be necessary for the purchase of items of clothing which are required for the program.
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 reflects the trend towards integrating a wide range of natural resources technology within government departments at federal and provincial levels. The requirement for the natural resources industry to consider its management practices within the context of levels.

The 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):

- 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 enrollment 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) OSC Endorsement
- WHMIS / 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.

This program is currently under review and it is anticipated that changes will occur.
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, resource 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.

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

2. Comprehensive Arts and Science (CAS) Transition Certificate with the following courses:
   - Math: MA1040, MA1041
   - Two Science courses chosen from two of the following three combinations:
     - Biology: BL1020, BL1021
     - Chemistry: CH1030, CH1031
     - Physics: PH1050, PH1051

Note: It is strongly recommended that CAS students who intend to enroll in the Field 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):
   - 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 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.

COURSE OUTLINE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BL1020</td>
<td>Biology I</td>
<td>3 2 3</td>
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<tr>
<td>CM1400</td>
<td>Technical Report Writing I</td>
<td>3 3 0</td>
</tr>
<tr>
<td>MA1000</td>
<td>Essential Mathematics</td>
<td>0 3 0</td>
</tr>
<tr>
<td>MC1150</td>
<td>Productivity Tools</td>
<td>4 3 2</td>
</tr>
<tr>
<td>SU1150</td>
<td>Field Navigation</td>
<td>3 2 3</td>
</tr>
<tr>
<td>EY2110</td>
<td>Basic Ecology</td>
<td>3 2 3</td>
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</table>

Two years

DIPLoma

2012 start

Happy Valley-Goose Bay Campus
COURSE DESCRIPTIONS
AC1100 Bookkeeping I
Bookkeeping I is a study of the fundamental principles, the mechanics of bookkeeping, recording, classifying, and the summarizing of financial data for a service business. It involves the control of cash, petty cash, banking procedures, and payroll accounting.

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 basic internal control of cash. This course emphasizes the national accounting standards (private enterprise GAAP in Canada).

AC1300 Accounting
This is an introductory course to accounting. Students will be introduced to accounting concepts as well as a basic integrated accounting package.

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): AC1220

AC2100 Bookkeeping II
Bookkeeping II involves the application of accounts receivable, accounts payable, and the study and application of the generally accepted accounting principles within merchandising firms using special journals, end-of-the-year adjustments for depreciation, accruals, bad debts, closing entries, and financial statements.

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 learner will explore integrated software systems, general ledger, payables, receivables, payroll and inventory. The learner will have the opportunity to apply the skills through various applications.

Prerequisite(s): AC1200 or AC1260, CP1450 or 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.

Prerequisite(s): AC2230

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. 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

AC2280 Accounting
This 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): AC3220

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

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

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

AC3220 Intermediate Accounting II
This is a continuation of the study of the principles and procedures covered in the previous semester of Intermediate Accounting. The content present an in-depth study of the liabilities and owner’s equity side of the balance sheet as well as the changes in financial position; also an in-depth study of the Statement of Cash Flows.

Prerequisite(s): AC2220

AC3230 Computerized Accounting II
This course is an advanced computerized accounting course. Students will be introduced to a computerized accounting package such as ACCPAC, Newviews, or System II.

Prerequisite(s): AC1100 or AC1260 or equivalent introductory accounting course and CP1450 or MC1220.

AC4250 Managerial Accounting II
This course is designed to build on the knowledge gained in Managerial Accounting I by taking the student’s previous knowledge of cost behaviour and applying it 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

AC3260 Payroll and Commodity Taxes
This course is designed to provide a working knowledge of the various payroll taxes and enable the students to utilize a software package to file T1, T2 returns and F-4, T-5, information slips and summary reports. The course prepares the student to account for and file required reports for commodity taxes including GST and PST.

Prerequisite(s): AC2260

AE1200 Electronic Devices
This course will include the description, operation and application of simple electronic components with particular emphasis on semiconductor theory. Analysis techniques involving diode equivalent circuits will be introduced and expanded to bipolar transistor DC biasing.

Prerequisite(s): ET1101

AE1240 Electronic Devices
This course will include the description, operation and application of simple electronic components with reference to semiconductor theory. The PN junction Diode, Bipolar Junction Transistor, MOSFET, and some other devices will be introduced. Analysis techniques will be introduced for linear power supplies and transistor amplifier circuits.

Prerequisite(s): ET1101

AE2210 Power Control Devices
This course provides a study of two-terminal devices, Schottky diodes, Tunnel diodes, IR Emitters, LCD’s, Solar
Available through correspondence

Cells, Thermostats, Photoconductive Cells; Thyristors-SCR, UJT, PUT, DIAC, TRIAC, Opto-Isolators, Phototransistors - commonly used in power control applications in the electrical and electronics industries.

**Prerequisite(s):** AE2301

**AE2260 Electronic Power Devices and Circuits**
This course will include three-phase rectification and the analysis, operation and application of op amps and power amplifiers. Power MOSFETs and various thyristors will also be introduced with applications for power control.

**Prerequisite(s):** AE1240

**AE2300 Analog Electronics**
This course involves the application of linear circuit theory to transistor circuits. The student will be introduced to linear models of discrete transistors and will learn how to use them to build up Generalized Amplifier models of complete amplifier systems.

**Prerequisite(s):** AE1200, ET2100

**AE2301 Analog Electronics II**
This course is a continuation of Analog Electronics I AE2300 and introduces the student to analog applications of transistors beyond the amplifiers. Emphasis is placed on the analysis, design and troubleshooting.

**Prerequisite(s):** AE2300, ET2100

**AE2320 Analog Electronics**
This course will include the description, operation and application of simple electronic components with particular emphasis on semiconductor theory. Analysis techniques involving diode equivalent circuits will be introduced and expanded to bipolar transistor DC biasing and amplifier systems.

**Prerequisite(s):** AE2320

**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, G1100, 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):** AE3300, 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, and S course will provide the student with the knowledge of aircraft structural design and the materials and processes used in their construction. The student will be introduced to stresses acting on aircraft structures and will be able to determine the urgency of repair when damaged.

**AF1140 Aircraft Structural Repair (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

**AF1150 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):** AF1120

**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 cold repair when required.

**Prerequisite(s):** AF1120

**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.

**Prerequisite(s):** AE1240

**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.

**AF2110 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 person health and wellness; human body systems will be examined, as well carees 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.

**AJ1110 Carpentry Fundamentals**
This course in carpentry fundamentals requires the use of basic tools and equipment and suitable facilities. It involves reading specifications and drawings, selecting materials, layout, building and clean up. It includes information on constructing wood joints, and building equipment such as sawhorses, mitre boxes, ladders, straight edges and olistone cases.

**AJ1121 Rigging for Carpentry**
This general studies course requires the use of rigging equipment, block and tackle, and safety equipment. It involves installing, testing and maintaining rigging, and tying knots and splicing rope. It includes information on safety requirements, types of ropes, types of knots and slings.

**AJ1150 Basic Drawing and Sketching**
This drafting course requires the use of basic drawings, specifications, bills of materials, drawing instruments and facilities. It involves reading basic drawings and diagrams, sketching, and interpretation of specifications. It includes information on sketching techniques and types of drawings.

**AJ1200 Layout and Footings**
This course in site preparation and formwork requires the use of tools and equipment and materials and supplies, and suitable facilities. It involves interpreting specifications and blueprints, layout, erecting formwork, installing footing forms and cleaning up. It includes information on plan plots, foundation plans, layout and construction techniques, foundation drainage.

**AJ1110, AJ1150**

**AJ1210 Wall Forms**
This course in site preparation and formwork requires the use of basic tools and equipment, materials and supplies, a surveyor's level and suitable facilities. It involves interpreting specifications and blueprints, layout, constructing foundation walls, installing access for pouring concrete, stripping forms and cleaning up. It includes information
on layout techniques, types of wall forms and construction techniques.
Prerequisite(s): AJ1200

AJ1220 Floor and Wall Framing
This course in exterior framing requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints, layout, framing and installing, and cleaning up. It includes information on floor plans, types of beams and columns, types of sheathing and construction techniques.
Prerequisite(s): AJ1110, AJ1150

AJ1230 Exterior Finish
This course in exterior framing requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, construction and installation of exterior finishes; and clean up. It includes information on blueprint sections, elevations and details; types of exterior frames and trim; and construction techniques.
Prerequisite(s): AJ1110, AJ1150

AJ1300 Roof Framing Fundamentals
This course in roof framing requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, installation and construction of basic roof frames and covers; and clean up. It includes information on types of roof frames and covers, and construction and installation techniques.
Prerequisite(s): AJ1220

AJ1400 Interior Walls and Ceilings
This course in interior finish requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, construction and installation of interior walls and ceilings; and clean up. It includes information on drywall systems and construction techniques.
Prerequisite(s): AJ1220

AJ1500 Interior Trim
This course in interior finish requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpretation of specifications and blueprints; layout, construction and installation of interior trim; and clean up. It includes information on types and purposes of trim, and construction and installation techniques.
Prerequisite(s): AJ1110

AJ1600 Stair Fundamentals
This course in stair construction requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpretation of specifications and blueprints; layout, construction and installation of basic stairs; and clean up. It includes information on stair geometry.
Prerequisite(s): AJ1110, AJ1150

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. Students’ 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 students the theory and practice of repairing, reproducing and installing architectural millwork. Students 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 students the theory and practice of repairing, reproducing and installing architectural millwork. Students 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 students the theory and practice of repairing, reproducing and installing architectural millwork. Students 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

AS2120 Aircraft Hydraulics and Pneumatics Systems (M)
This M course will enable students 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 students with the basic knowledge of aircraft hydraulic and pneumatic systems design and function. Aircraft Plumbing systems will also be covered.
Co-requisite(s): AS2120

AS2165 Aircraft Landing Gear Systems (M, E)
This is an M and E course to provide students 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 student 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 student 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 student 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 student with basic knowledge of the operation of aircraft support, environmental and safety systems.
Prerequisite(s): PE1200, GM1120, GM1130
Co-requisite(s): AS2330

AS2410 Propellers and Systems (M, E)
This M only course will provide the basic knowledge of aircraft propeller systems and maintenance.
Prerequisite(s): IT1115
Co-requisite(s): AS2415

AS2415 Propellers and Systems (M, E)
This M and E course will provide the basic knowledge in design, construction, operation and maintenance of propellers and associated systems.
Prerequisite(s): IT1115
Co-requisite(s): AS2410

AS2520 Reciprocating Engine Fuel Metering (M)
This M course will provide the student with the knowledge of aircraft fuel systems, fuel metering systems, their design, components, function, operation, and maintenance.
Prerequisite(s): IT1115

AT1100 Adventure Tourism Industry
This course provides an in-depth study of the adventure tourism industry. Terminology will be defined, tourism motivators will be identified, the economic impact of tourism will be discussed 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.

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 visitors.
Prerequisite(s): CM1400

AT1221 Heritage Interpretation II
To further the student’s knowledge, confidence and skill in all aspects of minimum impact travel, wilderness navigation and group leadership, lead a group safely and efficiently in a 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, CS1601. Any two of: BL2220, BL2230, BL2210, 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 in sustainable development, 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.

AT1500 Cross-Country Skiing
Students will acquire theoretical knowledge and personal skill in classic and skating technique, and hill maneuvers. Equipment requirements and selection, sizing, care, and waxing will also be discussed. Students will have an opportunity to be tested for Level I - Canadian Association of Nordic Ski Instructors (CANSI) certification. Students who choose to be tested for certification will be charged on certification fee.

AT1510 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. Students will be encouraged to pursue both the Bronze Cross and the Bronze Medallion following this introductory course. It is expected that students will gain knowledge and skills necessary to participate safely in water related activities.

AT1520 Canoeing
Students will acquire theoretical knowledge and personal skill in: strokes, maneuvers, 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 (CRA) certification for both flat water and moving water. Students who choose to be tested for Certification will be charged a certification fee.

Prerequisite(s): AT1510, CS1600

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.

AT2500 Back Country Skiing
Students will acquire theoretical knowledge and personal skill in Nordic (backcountry) skiing techniques. Hill maneuvers on backcountry equipment will be taught. Ski equipment and accessories will be discussed. Students will have an opportunity to be tested for Level 1 - Canadian Association of Nordic Ski Instructors (CANSI) certification. 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.

Prerequisite(s): AT1500, CS1600

AT2510 Sea Kayaking
Students will acquire theoretical knowledge and personal skill in strokes, maneuvers, 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.

Prerequisite(s): AT1510 and CS1600

AV1220 Basic Aircraft Instruments I (M, E)
This M and E course will give students 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.

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 students 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 students practical experience in installing Avionic Navigation equipment on aircraft. Students will gain procedural knowledge of the steps involved in designing, and implementing systems installation procedures, including associated regulatory supporting documentation.

Prerequisite(s): PE1200, GM1320

Co-requisite(s): AV1500

AV2170 Pulse Navigation Systems (M, E)
This M and E course will provide the students with information relating to avionic systems that employ high power pulse transmitters for navigation information gathering and display. Microwave principles and properties of UHF frequencies as relating to aircraft installations are discussed.

Prerequisite(s): AV1500

AV2180 Integrated Navigation Systems Installation (E)
This E course is designed to give students practical experience in installing integrated avionics navigation equipment on aircraft. It involves designing a system that will share a navigation display. Students will gain procedural knowledge of the steps involved in designing and implementing systems installation procedures including associated regulatory supporting documentation. Students will inspect installations and report deficiencies if any.

Prerequisite(s): AV1220

Co-requisite(s): AV2170

AV2220 Aircraft Instruments II (M, E)
This M and E course is designed to give the students an understanding of flight instruments, the typical panel layouts and installation practices associated with them. It covers air pressure- sensitive and gyro-stabilized systems, including Air Data and Attitude Reference systems. The course also utilizes synchronous transmitter theory. Practical labs include direct hydraulic pressure testing, operation and inspections of Pneumatic gyro systems, pitot-static testing & troubleshooting, and performing a compass swing.

Prerequisite(s): AV1220

AV2310 Major Communications Radio Install (E)
This E course prepares the student to inspect, install, troubleshoot, repair and Maintain electronic communication radio equipment and their systems. A major installation will be completed including all of the required paperwork/ technical records.

Prerequisite(s): AV1320

AV2510 Auto Flight Theory (M, E)
This M and E course of study will cover servo 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): AV2220

Co-requisite(s): AV2540

AV2540 Auto Flight Ramp Testing (M)
This M only course will have the students ramp test the auto pilot system in a fixed wing aircraft including the associated flight director modes.

Co-requisite(s): AV2510

AV2570 Auto Flight Troubleshooting (E)
This E only course will have the students troubleshoot various auto pilot defects on the colleges aircraft.

Prerequisite(s): AV2510

AV3110 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.

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 understanding 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 Resource 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 Resource 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 micro organisms, 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 kingdom; 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. Preerequisite(s): BL1170 or BL1500 or MUN Biology 1001

BL1260 Human Biology
This one semester 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.

BL1320 Anatomy and Physiology
The focus of this course is 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. This course will also include an orientation to all the body 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 resource references, 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.

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.

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 pro-caryotes; a study of DNA and RNA and protein synthesis; an introductory study of gene regulation in procaryotes 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

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.

BL2100 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

BL2231 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

Available through Distributed Learning
Available through correspondence
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 genito-urinary system 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 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 gastro-intestinal 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

BU2110 Building Systems and Codes
This course deals with the type of mechanical and electrical systems in buildings and how they are represented on the finished drawings. The purpose of this course is to introduce students the mechanical and electrical building systems to and all related codes. It is also meant to support material to be covered in other courses such as estimating and construction planning. This course is designed to enable students to interpret and prepare AutoCAD drawings of mechanical and electrical systems for a small commercial building. Students with this background will be able to interpret mechanical and electrical drawings for the purpose of planning, inspecting and supervising construction of small commercial buildings.
Prerequisite(s): DR1211
Co-requisite(s): DR1210

BU2200 Arch Building Services I
This course allows the types of electrical services required for buildings. It is comprised of lectures and labs designed to introduce the student to building electrical systems. Design concepts and presentation procedures are studied, with direct applications in the preparation of detailed computerized electrical services drawings.
Prerequisite(s): PH1101, ET1101
Co-requisite(s): DR3100

BU2201 Arch Building Services II
Building Services II is a course designed to introduce students 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 advances to areas of water supply and distribution, storm drainage, fire protection, and plumbing. The course includes a detailed study of code requirements and the preparation of computerized working drawings.
Prerequisite(s): PH1101, DR3100
Co-requisite(s): DR3101

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 fashioned 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): DR3100

BU2301 Arch Building Codes II
This course is a continuation of Architectural Building Codes I and deals with the safety requirements of buildings given in the National Building Code of Canada. It is designed to help students interpret and apply regulations through a series of practical exercises.
Prerequisite(s): BU2300

BU2400 Architectural 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.
Prerequisite(s): PH1101

BU2401 Architectural 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. Students 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): BU2400

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, psychometrics 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. Students 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): PR2300
Co-requisite(s): DR4100, CA3600

CAZ100 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

CAZ2101 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): CAZ2100

CAZ2300 Urban Services
This course will provide the student with an understanding of municipal water, storm, and sanitary systems. Students will acquire skills to design, construct, operate, and maintain necessary municipal services. Treatment
CA2500 Highway Design
This course covers the planning and design of a transportation system including traffic studies, route selection, and horizontal and vertical alignment. Students will design a road, prepare a plan including profiles and cross-sections, as well as calculate earth-work quantities.
Prerequisite(s): CF2420, FT1320, WA1100

CA2650 Marine Construction
This course is designed to give the student knowledge in the methods and operations related to topics in marine construction. Emphasis will be placed on the design requirements and methods of construction related to onshore marine structures. This will also involve a study of the typical marine structures used in Newfoundland. The importance of the design and construction of inshore marine structures is very relevant in connection to the Newfoundland situation. The student will be introduced to the design requirements for various marine structures such as: wharfs, piers, and breakwaters. The methods, equipment and materials used in the construction of inshore structures will be presented. Environmental requirements and their effects on design and construction will also be investigated.
Prerequisite(s): CB2420, WA1100

CA2800 Soil Mechanics I
This course will introduce the student to the fundamentals of soil mechanics. The origin and formation of soils will be addressed along with their classifications and uses in the construction environment. Emphasis will also 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): CF2700

CA2801 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 settlement and/or collapse. This course will give a 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): CA2800

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

CB2420 Construction Methods
Construction methods will help students 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 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 managing and 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.

CE1210 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 student 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 Digital 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 Digital Electronic Automation Communications
This is an intermediate level electronics course designed to provide students with an introduction to the signals and processes of analog communications.

CE2700 Antennas and Microwaves
This course provides a comprehensive study of transmission lines, waveguides, and antennas with application in radio systems. Topics covered include transmission line parameters, waveguides and components; antennas; antenna measurements; impedance matching with Smith Charts.
Prerequisite(s): MA1101 ET1200, AE1200

CE2730 Electromagnetics for Electronic Communications
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 NT installation and administration.
Prerequisite(s): CT2300; CP1150

CE2900 Human Machine Interface Development
This course provides students with a comprehensive analysis of Human Machine Interface software packages, such as Lookout, Wonderware and RTView, for monitoring and controlling automated machines and processes from custom designed graphical user interfaces.
Prerequisite(s): CE2800; DP3100

CE3100 Communications Systems
This is an advanced electronic communications course. It provides a solid background for understanding and analyzing the modern communications systems.
Prerequisite(s): CE2250, CE2700

CE3160 L2 – L4 Switching
The course will provide the student with the skills to design and configure new Layer 2 to Layer 4 (ASIC) based campus switching and its applications which are poised to improve/replace CPU based routing. The course also supplies students 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

CE3430 Network Cabling
This course will provide the student 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, i.e. TIA/EIA-568A standard, and the type of testing and documentation required to certify performance and trouble-shoot the installation. 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.

Prerequisite(s): CE1200

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

CE3640 Unified Communications
This course provides students 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 students may choose to pursue professional certification such as CCNA Voice.

Prerequisite(s): CE3160, CE1200

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 understanding 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

CF2501 Strength of Materials II
This course is a continuation of CF2500 and will provide the student with basic skills for the design of building structural components. It gives students knowledge and understanding of structural members.

Prerequisite(s): CF2500

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): CF2510

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 of courses that introduce students to the fundamentals of applied problem solving. It enables the economical 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; trusses and frames; centroids and second moments of area; shear force and moments in beams; stresses in beams and beam design.

Prerequisite(s): PH1101, MA1101

CF2600 Building Materials I
This course examines the properties, limitations, and application of a number of different building materials. It is designed to help students assess and select suitable materials for a variety of situations found in buildings.

CF2601 Building Materials II
This course examines the properties, limitations, and applications of a number of different building materials. It is designed to help students assess and select suitable materials for a variety of situations found in buildings.

CF26000 Building Materials I
This course has been designed to provide the student enrolled in the Civil Technology program with a working 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 student 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, concrete masonry 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, DR1211

CF2701 Materials & Testing II
This course has been designed to provide the student enrolled in the Civil Technology program with a working 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 CF2700, Materials and Testing I. It will provide the student with a hands on approach to the testing, selection, use and application of common construction materials such as concrete, concrete masonry, asphalt and aggregate will be tested under laboratory conditions. Where ever possible in lab work will be supplemented with field trips, videos and guest lectures.

Prerequisite(s): CF2700

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 processes in chemical industries.

Prerequisite(s): CH1121

CF3402 Structural Design
This course is a continuation of Strength of Materials CF2500 and expands on previously studied concepts of simple stress, strain and elasticity, and provides a basic for elementary calculations in engineering design.

Prerequisite(s): CF2510

CF3600 Building Materials III
This course examines the properties, limitations, and application of a number of different building materials. It is designed to help students assess and select suitable materials for a variety of situations found.

Prerequisite(s): CF3600

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

CG1210 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):** CJ3401

**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.

**Prerequisite(s):** TX1210

**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 pre-determined motion 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):** EG1430

**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):** CG1500

**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

**Co-requisite(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

**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):** DR4100, BU3200, BU3300

**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 C.P.M. and P.E.R.T. as well 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) College 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):** CH1130

**CH1031 Introductory Chemistry II**
Introductory Chemistry II is a Comprehensive Arts and Science (CAS) College Transition course. It is the second 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. Continuing the introduction to fundamentals of Chemistry started in Introductory Chemistry I, the main emphasis of this course is on solving mathematical chemical problems.

**Prerequisite(s):** CH1030

**CH1060 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:

- matter, 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

**CH1130 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 thermochrometry.

**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.

**CH1131 Introductory Chemistry II**
Transferable to MUN Chemistry 1011

This is a continuation of CH1130. 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, gaseous chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: physical properties of matter, molecular geometry, rate of reaction, gaseous chemical equilibrium, acid-based equilibria, precipitation equilibria and electrochemistry.

**Prerequisite(s):** CH1130 or MUN Chem 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.
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 Chem 1051.
This course is designed for students who may have career interests in chemistry or other fields of science. The course will develop further the fundamental concepts of chemistry, with emphasis on practical applications. It is designed to identify and apply principles as well as provide visualizing of their physical significance. Major topics are: chemical kinetics, principles of chemical equilibrium, acids and bases, addition aspects of acid-based equilibria, solubility and complex ion equilibria, spontaneous change; entrophy and free energy, electrochemistry, descriptive chemistry.

Prerequisite(s): CH1140, MA1130 or MA2100, or MUN Chem 1030, Math 1000 or 1081.

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 1010.

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

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.

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 of chemistry 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 the body fluids. Major topics studied include: carbohydrates, lipids, proteins and non-protein nitrogen compounds.

Prerequisite(s): Completion of all third semester courses. Co-requisite(s): CH2340

CH2330 Chemistry Petroleum
This is an advanced course in organic chemistry designed to give petroleum students a knowledge and understanding of the fundamental chemical concepts of organic products and derivatives which are prominent in the petroleum industry.

Prerequisite(s): CH1121

CH2331 Chemistry Petroleum
This is a course designed to give petroleum students a knowledge and understanding of physical, inorganic and analytical chemistry as applied to the petroleum industry. Emphasis will be given to the development of analytical and laboratory skills.

Prerequisite(s): CH2330

CH2340 Organic Biochemistry
This is an introductory course in biochemistry for Medical Laboratory Science students. The organic chemistry framework includes the study of the carbon atom, chemical nomenclature and the structure of organic compounds. Major focus is on the structure, properties, and metabolism of carbohydrates, proteins, lipids, nucleic acids, non-protein nitrogen compounds, and acid-base balance, body water/electrolyte balance and enzymes.

Prerequisite(s): Completion of all third semester courses.

CH2400 Organic Biochemistry
This course is designed to provide students with a foundation in the areas of organic and biochemistry. It also shows some of the useful contributions that chemistry has made in the area of health care. This is an introductory course in organic chemistry and biochemistry for biomedical students.

Prerequisite(s): CH1121

CH2450 Industrial Chemistry I
This course introduces students to industrial chemistry and concepts and terms used in industrial chemistry. The principal focus of this course is industrial chemistry as it applies to the use, analysis and treatment of water. Industrial chemical metallurgy is explored and students use pH, conductivity, dissolved oxygen and other analyzers - both laboratory and process.

Prerequisite(s): CH1121

CH2511 Clinical Chemistry
This course is a continuation of CH2250 Clinical Chemistry and consists of a 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, toxicology, 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 for Pulp and Paper Making
This is an introductory course in chemical analysis. It will introduce the students 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

CH3450 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 guidelines 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

C11100 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

C11210 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): ET2100

C11211 Instrumentation Controls and Automation
This is an introduction to process control systems, designed to provide the students with the basics of PID Control as well as an overview of more advanced sys-
tems.
Prerequisite(s): CI1210

CI1240 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 intercession. 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, ET1111

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

CI2240 Instrumentation (Hydraulics and Pneumatics)
This introductory course is designed to acquaint the student with the design and operation of industrial hydraulic and pneumatic systems. It includes a review of the selection and integration of the components used to build and control hydraulic and pneumatic circuits. Operational control and troubleshooting of basic circuits is an integral component of the course.

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, ration 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

CI2800 Process Measurement I
The purpose of this course is to introduce students to the methods used by the processing industries to measure various physical properties such as pressure, level and temperature.
Prerequisite(s): AE1200

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, 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 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 this 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, EE1101

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, MathLab) will be used to analyze/design/modify industrial process control systems.
Prerequisite(s): MA2101 & AE2301 or AE2311

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 material 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
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): CJ2821

CJ3812 Process Control IV (Advanced Process Control Strategies)

This course covers advanced PID control strategies with an emphasis on boiler control.

Prerequisite(s): CJ3811

CJ3820 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): CJ2801, CJ3821, CJ1500

CJ3821 Process Analyzers

This course involves the study of spectroscopic, chromatographic and physical property analyzers that a chemical processing technologist would be expected to routinely manage in 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): CH3811

CJ3830 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): CE2800, DP3100

CJ2110 Canada’s Justice System

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.

Prerequisite(s): CJ2110

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): CJ2110

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): CJ2110

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): CJ2110

CL1700 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

Co-requisite(s): CL1500

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

Co-requisite(s): CL1100

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 well as 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.

Prerequisite(s): CM1145

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

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.

CM1100 Writing Fundamentals

Writing Fundamentals is an introductory course designed to review writing fundamentals. It includes an introduction to reference tools and a review of 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 furthers the development of writing and analytical skills acquired in CM1120 English 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.

CJ2110 Canada’s Justice System

Available through Distributed Learning

CM1145 Critical Reading and Writing II (Context, Substance, Style)

Available through correspondence
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 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.

**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

**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 I**
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 I I**
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 and paragraphs and 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 relation 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 applied 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

**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.

**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.

**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.
CP1250 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. Topics include algorithms and problem solving strategies, syntax, and semantics of a higher level programming language (Java), variables, types, arithmetic and logic expressions, assignment statement, decision making, iteration, methods, arrays, strings, if/else and elements of event driven programming (Java applets).

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, CP1320

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 CP1310 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 students a thorough grounding on the principles of object oriented programming and modeling with the unified modeling language (UML). Additional topics include exception handling, multithreading and networking in the Java programming environment.

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 interconnections 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

CP1910 Internet Fundamentals
The Internet is today’s most powerful communication and information resource—providing to millions of people all over the world, access to information archives and to each other via a variety of protocols. The introduction to the Internet course is intended to teach students how to access the Internet as well to understand the underlying concepts and strategies for finding and using resources. An assortment of tools and protocols will be explored including E-mail, FTP, Web Browsers, and simple Web Page design providing a solid foundation in Internet access to the student, invaluable in navigating the shifting landscape of the Internet.

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, chipssets, 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 those 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 CP2130 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 introduces students to the concepts and applications of electronic spreadsheets.
Prerequisite(s): One of: CP1450, MC1050, MC1100, MC1800 or MC1220

CP2320 Micro Database Applications
This course introduces the student to the concepts and applications of database.
Prerequisite(s): One of: CP1450, MC1050, MC1000, MC1800, MC1220

CP2340 Desktop Publishing
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.
Prerequisite(s): MC1000

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 Web site 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 and Algorithms
This course builds on the foundation provided by Programming Fundamentals CP1250, Object Oriented Programming CP1340, and Discrete Mathematics MA2710 sequence to introduce the fundamental concepts of data structures and the algorithms that proceed from them. Topics include the basics of analysis and design of algorithms and fundamental data structures including stacks, linked lists, queues, hash tables, trees and graphs.
Prerequisite(s): CP1340, MA2710

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. This course 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): CP2250

CP2600 Computer Hardware Fundamentals
This course is designed to expose the student to the basic components of a computer system. It will teach the student how to evaluate, install, configure, and specify all basic computer components such as CPU, Memory, Hard & Floppy Drives, Power Supplies, Network Cards, Video Cards, Sound Cards, and Modems. It will also cover topics in PC management such as Disk Defragmentation, Disk Compression, Virus Protection, Data Recovery, Disk Caching, Memory Management, and the use of RAM Drives.
Prerequisite(s): ET1101

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 ADO.NET
This course is designed to give the student advanced skills in the computer programming process. This course uses the ADO.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 ADO.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, students 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, CP1150

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

### CP3480 Software Engineering
This course introduces students to the principles of software engineering, object oriented modeling 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 significant software system is crucial part of the course.

**Prerequisite(s):** CP2530

### CP3510 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. The theoretical concepts are put into practice using current database architectures and technology.

**Prerequisite(s):** CP2530

### 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 data 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 students a thorough understanding of Web technologies. Topics include client-server architecture, protocols, server side includes, scripting languages, security and object request broker architecture.

**Prerequisite(s):** CP3480, CP3520, CE1200

### 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 ‘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):** CP3470

### 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, CP4411

### CP4470 Emerging Trends in Industry
This course covers a selected area(s) of computing with a unifying theme to be explored in-depth. The topics 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.

**Prerequisite(s):** Depends on topics selected.

### 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 Manufacturing Operations Technology students 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 Systems.

**Prerequisite(s):** CT1150

### 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.

### 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.

### CR1520 Website Design
This course is designed to provide advanced graphic design students with the skills necessary to design and develop a web site. The course emphasizes 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.

**Prerequisite(s):** All first year graphic design courses and all semester 3 graphic design courses.

### CR1521 Advanced Website Design
This course is designed to provide students with the skills required to develop visually rich and interactive web sites. Creating vector-based animations and interactive multimedia content will be an emphasis of this course. Students should already be familiar with how to design and program a web site.

**Prerequisite(s):** Successful completion of all core Graphic Design courses in semesters 1 through 4, and the first Intercession.

### 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

### CR2160 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.

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

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 multiple-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 configuration. 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 deals 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): CR1100

CR2511 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 she/he performs on a daily basis. The student will learn how to perform these tasks using the command line and a GUI. The student will install and configure a number of the standard services that run on a Linux server. Finally, the student will learn how to secure a Linux system.
Prerequisite(s): CR2510

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 also 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, OP1600, OP1320, CP1560, PR2700, OP1401
Co-requisite(s): LW1270

CS1110 Leadership Skills I
This course introduces the concepts of group dynamics, team development, goals, group structures and communication. Conflict resolution and controversy skills are practiced, and formal theories of leadership are studied and applied. Through exercises and simulations, students integrate theoretical and practical aspects of leadership.
Prerequisite(s): CR1100

CS1120 Leadership Skills II
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): CR1100

CS1300 Wilderness Medicine
This course will provide participants with a solid foundation in wilderness first aid, trip health care and expedition long term care. Topics are covered with an emphasis on leadership, practical skills, decision-making and dealing with environmental conditions. The program is designed to accommodate the specific needs of guides and group leaders who work in remote regions. Participants will receive wilderness medicine certification recognized across Canada, and which has become a standard of training for wilderness leaders and guides. The course is conducted in a one-week intensive format requiring some evening commitments as well as a number of outdoor simulations. Students who choose to be tested for certification will be charged a certification fee.
Prerequisite(s): CS1600

CS1300 Wilderness Medicine
This course will provide participants with a solid foundation in wilderness first aid, trip health care and expedition long term care. Topics are covered with an emphasis on leadership, practical skills, decision-making and dealing with environmental conditions. The program is designed to accommodate the specific needs of guides and group leaders who work in remote regions. Participants will receive wilderness medicine certification recognized across Canada, and which has become a standard of training for wilderness leaders and guides. The course is conducted in a one-week intensive format requiring some evening commitments as well as a number of outdoor simulations. Students who choose to be tested for certification will be charged a certification fee.
Prerequisite(s): CS1600

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): CS1600

CS2170 Leadership, Field Skills & Special Topics
This module will include policy and procedures, fire safety, emergency response, cultural diversity awareness, non-violent crisis intervention, documenting incidents of crisis intervention, decision-making, conflict management, meeting management and planning.

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.

CS2600 Leadership III Wilderness Survival
This course is an advanced wilderness emergency response course which incorporates the St. John Ambulance Standard First Aid, Basic Rescuer CPR, and Wilderness First Aid courses. A leader’s response to an accident, casualty assessment, and caring for the casualty in a wilderness setting will be studied. Common wilderness injuries and the recognition of common illnesses will be identified and appropriate care will be discussed. Guides will be trained in hazard identification, avoidance, management, and emergency response techniques. The guide’s role in search and rescue management will also be discussed. Practice sessions in a wilderness setting will provide opportunities for students to practice first aid techniques, lead groups, and coordinate rescue procedures in simulated emergency situations.

Prerequisite(s): CS1600, CS1601

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

CS2630 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 wilderness survival basics, trip planning and management, emergency survival skills, wilderness hazards and ground search and rescue techniques. 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

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.

CT1120 Computer Programming (C++)
This is an introductory course which will introduce the students to the basic problem-solving and structured-programming techniques used to design computer solutions to problems.

CT2300 Applied Programming
A course designed to introduce the technology student to the concepts of problem solving using computer programming. The course will be taught using a high level language such as C or C++. Students will write programs to solve problems within their related disciplines and will learn the concepts of troubleshooting and problem solving. Structured programming concepts using C++, Data Types; Decision Statements; Loop and Interaction Procedures; Input and Output Procedures; Pointers; Structures and Files.

Prerequisite(s): AE1200, ET2100

CT2520 Operating Systems
The course introduces students to the fundamentals of operating systems. The course will survey techniques used by the various subsystems of a modern operating system. Examples will be taken from UNIX.

Prerequisite(s): CP2350, ET1200

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 for 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): DB2100

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
The 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): CS1500

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): CS1150

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): EG4130; 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): EG4130; FM3100; CT1240

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 straight copy material is developed to 30 to 40 net words per minute for three (3) minutes. The following documents are produced using Microsoft word processing software: notices and announcements, signage, basic correspondence, basic tables, and basic reports.

Prerequisite(s): CP1450

DM1201 Document Production II
This course further develops keyboarding speed and accuracy and increases proficiency in document production using intermediate word processing applications. Keyboarding speed on straight copy material is developed to 40 to 50 net words per minute for five (5) minutes. Topics covered include advanced print functions; further reinforcement of file management and skills in the production of business correspondence, tables and forms and
Keyboarding speed is developed to a minimum of 50 net words per minute for five minutes. Using Microsoft Office, students will format documents such as letters, memos, reports, tables, and news releases; composition and critical thinking skills will also be developed. They will perform tasks that require the integration of various software packages. For example, word processing, database, spreadsheets, presentations, electronic mail, and calendar.

**Prerequisite(s):** DM1200

**DM2210 Legal Document Production II**
This course combines keyboarding development, word processing concepts, and legal document processing. Keyboarding skills will be reviewed and developed in the range of 45 to 55 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 Document Production II will be further enhanced.

**Prerequisite(s):** DM1201
**Co-requisite(s):** OF2500

**DM2410 Legal Transcription II**
This course continues to increase competency in machine transcription. Emphasis is placed on accuracy and speed of transcription of business correspondence and legal documents presented in an unranged, "office-style" manner. Decision-making skills are further honed through transcription of legal documents for real estate, wills and estates, and family law. Throughout the course, the student is exposed to the practice of law and the legal profession. The 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 Document Production II will be further enhanced.

**Prerequisite(s):** DM1201
**Co-requisite(s):** OF2510

**DM3220 Legal Document Production II (Wills and Estates Law and Family Law)**
This course further develops keyboarding, word processing, and legal document processing skills for wills and estates law and family law. Through further emphasis on accuracy and speed development, the student is given the opportunity to develop straight-copy keyboarding speed in the range of 50 to 60 net words per minute for five minutes. This course is a continuation of Legal Document Production I and incorporates many of the basic legal formats learned. Students will produce, with speed and efficiency, correspondence and legal documents required in wills and estates law and family law using appropriate precedents. Students will further develop a precedent file on disk using state-of-the-art equipment and software. More word processing concepts will be reinforced through practical applications.

**Prerequisite(s):** DM2210
**Co-requisite(s):** OF2510

**DM3230 Legal Document Production III (Real Estate)**
This course will introduce students to documents required by a legal practice when handling real estate transactions for both the vendor and the purchaser. Students will produce, with speed and efficiency, correspondence and legal precedents used in current real estate practice. Using a case approach, students will follow and interpret verbal and handwritten instructions and handwritten or edited copy to produce documents; at the same time, they will use check lists to assess priorities and manage time. Students will add to their precedent file using state-of-the-art equipment and software.

**Prerequisite(s):** DM2210
**Co-requisite(s):** OF2520

**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 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

**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 and operation and ladder logic programming and troubleshooting.

**Prerequisite(s):** ET1200, 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

**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; ET1120

**DP2340 Robotics & Computer-Aided Manufacturing**
This course introduces students 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):** DP100

**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

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, 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

DP3100 Programmable Logic Control
This course introduces the student to the general concepts and programming techniques for digital, analog and peer to peer communications associated with programmable logic controllers used in the instrumentation applications.
Prerequisite(s): MP3130, CP1150

DP3200 Embedded Controller Applications
The 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 limited resources. Hands-on experience is provided for the Motorola 6811 Series of microcontrollers.
Prerequisite(s): CT2300 or CP1250, DP2410

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): CT2300, 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, CT2300

DP3410 Digital Communications, LANs and DSL
This course is designed to provide the fundamental concepts physical layer, data link layer and network and data models in CAPE and LAN environment as well as reuse of these models in DSL.
Prerequisite(s): DP1110, CE2270

DP3430 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): ET2100
Co-requisite(s): CT2330

DR1112 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.

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
This 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

DR1210 CADD Drawings
Computer Aided Drawing is a which consists of a combination of Engineering drawing practice and AutoCAD procedures. The course will follow a hands-on approach to the acquisition of drawing skills using AutoCAD.
Prerequisite(s): DR1211

DR1211 Engineering Drawing
This course will be presented during the first intersession of the Civil Engineering Technology program. Its purpose is to impart to the student a working knowledge of the requirements of Engineering drawings as applied to buildings so as to meet the requirements of the national building code.
This course is designed to enable students to interpret and prepare, by hand, sketch, engineering drawings required for medium sized houses and or small commercial buildings.
Co-requisite(s): DR1210, SU1200

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 a NDT Technician Certification. This include both in class practical training.

DR2140 Architectural Drawings
An introduction to Architectural Drawings with emphasis on applying architectural drawing conventions to actual architectural drawings.
Prerequisite(s): EG1110

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

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-Tech 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 computer-aided 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

DR3100 Architectural Working Drawings I
This course is an introduction to building construction techniques, architectural working drawings and detailing. It is designed to enable the student to become involved in the creation and proper use of working drawings. Course material takes the form of lectures, group projects, and analysis of such projects.
Prerequisite(s): EG1200, DR2100
Co-requisite(s): BU2300, BU2400, CF2600

DR3101 Architectural Working Drawings II
This is a course dealing with larger buildings of masonry construction. It is designed to enable the student 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): DR3100, BU2300, BU2400, CF2600
Co-requisite(s): BU2401, CF2601, EG2200

DR3200 Advanced Computer Aided Design
This course is designed to give the student an exposure to programming logic and data linking between graphics information and text/numerical data. After a general introduction to basic programming and use of the students 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 an introductory course in manufacturing technology. In this course, students are introduced to fundamentals of computer-aided drafting, design and manufacturing (CADD/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 tools 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 Prototype.
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 drawing 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

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 individuals, businesses, and governments. Specifically, the course examines business organizations and why the attitudes of buyers and sellers determine the prices, quantities, and distribution of the output of goods and services.

EC1140 Introduction to Microeconomics
Transferable to MUN Economics 2010. This course is intended to prepare the student to take additional courses in economics which make use of Microeconomics tools of analysis. 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. In this course the student will develop a set of tools of analysis that will provide insight into what is involved in the decision making process, realize implications that may not be readily apparent to the general public, and be situated in a position to more readily ask relevant questions concerning diverse initiatives. The course will cover the following topics: scarcity and opportunity cost, demand and supply, elasticity, household demand, marginal utility, indifference curves, production functions, short-run and long-run cost functions, perfect competition in the short-run and in the long-run monopoly.

Prerequisite(s): High School Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test of MUN Mathematics 1090.

EC1150 Introduction to Macroeconomics
Transferable to MUN Economics 2020. This course is designed to introduce students to macroeconomics. 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 national product, national expenditure components, business cycles and fiscal policy. The emphasis is on Canadian examples where possible.
Prerequisite(s): High School Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test of MUN Mathematics 1090.

EC1200 Macroeconomics
This course examines the physical and monetary aspects of international trade, money, banking, and monetary policy; the gross national product, national expenditure components, business cycles, and fiscal policy. The emphasis is on a problem solving approach and Canadian examples where this is possible.

EC1400 Newfoundland & Labrador Economy
The course objective is to develop an understanding of the structure of the Newfoundland and Labrador economy. The course applies economic theory of examination of the economic history, the economic sectors, the economic potential, and the budgetary processes associated with the economy of Newfoundland and Labrador.

EC1700 Engineering Economics
This course covers the basic principles of engineering economy with application to engineering economic decision-making. The various methods for economic analysis of alternatives are investigated as well as depreciation methods and income tax consequences.
Prerequisite(s): MA101

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, deprecia-
tions, and impact on taxes all of which apply to engineering economic decision making. Also, it gives the student an overview of management principles in the dynam-
ics of supervision that relates to individual and group behaviours in an organizational setting.
Prerequisite(s): MA101

EC1720 Construction Economics
This course will give the student the knowledge necessary to make decisions based on economic alternatives. It will introduce the student to the field of micro and macro economics as well as provide a basic understanding of the requirements needed to start and succeed in their own business related to the construction industry. This course is an introduction to the fundamental principles of engineering economics and entrepreneurship. The concepts of microeconomics and macroeconomics are presented along with applications to the engineering field. Entrepreneurship will be used to introduce fundamentals of business functions and procedure.
Prerequisite(s): CM1401, MA1101

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.

EE1150 Child 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. This course will focus on developing knowledge and skills that will enable a student 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. By the end of this course, students will be able to select appropriate observation methods, interpret and analyze their findings, and apply this knowledge to planning a developmentally appropriate program.

EE1160 Child Development I
This is an introductory course in child development. Child development terminology and basic principles are outlined as the foundation for the study of specific age categories. Students will also acquire a working knowledge of the most influential theories of child development. Growth and development during the prenatal and neonatal periods is provided.

EE1161 Children Development II
This is a course in child development that focuses on descriptions of the developmental domains, and on increasing students’ understanding of developmental milestones and growth patterns in infancy and toddlerhood.
Prerequisite(s): EE1160

EE1170 Curriculum I
This course focuses on the theory, function and value of play. Students will learn to design the play environment, plan for specific play areas and choose appropriate equipment, materials and supplies in order to foster the development, creativity and learning of children. Particular emphasis is given to the provision of developmentally appropriate programming that is based on the needs and interests of all the children in the group. Students are introduced to basic activity planning, preparation, implementation, review and follow-up.

EE1171 Curriculum II
This course focuses on the planning and development of early childhood education curriculum and programs, and provides an overview of the major theoretical models and approaches currently being used in early childhood programs. Throughout this course the unique learning styles and the individual differences and interests among children will be emphasized and used as a basis for individualizing the curriculum. The students will also have the opportunity to further develop their planning skills in specific curriculum areas.
Prerequisite(s): EE1170

EE2270 Foundations of Positive Behaviour Guidance
This course provides a foundation for understanding and guiding children’s behaviour. The purpose of this course is to provide an overview of principles and strategies needed to guide behaviour in positive ways. The focus will be on understanding behaviour and implementing
EE1280 Infant and Toddler Care
This is an introductory course in infant and toddler care. It focuses on the unique needs of infants and toddlers and how these needs can be met through a developmentally appropriate approach to programming and responsive care during the first three years of life. This approach takes into consideration the developmental needs and individual and cultural differences among very young children, as well as the critical role of the infant/toddler-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 and toddlers. The importance of establishing positive relationships and open communication patterns with parents will be highlighted in the course.
Prerequisite(s): EE1161

EE1300 Family Studies I
This course will provide the student with the awareness of the diverse needs and experiences of families. Attention will be paid to the current changes in family structure, roles, definitions, and life styles in relation to the family as a social system.

EE1301 Family Studies II
This course focuses on 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.
Prerequisite(s): EE1300

EE1450 Creative Activities I – Art
This course is designed to provide students with an understanding of how to promote creative expression in young children through a variety of art media. This first-hand experience will provide opportunity for students to explore and experiment with art media as well as prepare students to offer art experiences which are developmentally appropriate, focusing on developing children’s imagination, creativity, and representational abilities. Particular attention will be given throughout the course to the sensory and expressive qualities of each medium, the student’s individual creative response to the material, and the developmental nature of children’s art.

EE1451 Creative Activities II – Literature
This course will focus on children’s literature and its significance for emerging language, literacy, imagination, and creativity. Students will examine a variety of book types available for children and learn to choose appropriate quality literature. The use of poetry, puppets, and drama will be highlighted to emphasize the various types of activities suitable for children. Students will learn to choose materials and apply methods that meet a variety of developmental needs.

EE1720 Professional Development
This is a professional development course in early childhood education. The focus is on developing a basic knowledge of the foundation of the early childhood education field and working knowledge of the components of the field which contribute to its professionalism. The goal of the course is to increase a student’s capacity to be a professional early childhood educator through self-reflection and practical application of acquired knowledge and skills.

EE1800 Inclusion I
This is an introductory course on the philosophy, principles, and appropriate practices of inclusion in early childhood programs. The characteristics of inclusive environments, the roles of those involved, and the use of ISSPs as an inclusive support will be discussed.
Prerequisite(s): EE1150, EE1160

EE1801 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): EE1800, EE1171

EE1840 Understanding Child Maltreatment
This course provides a comprehensive overview of the four primary categories of child maltreatment: physical abuse; emotional abuse; sexual abuse; and neglect. Students will study the behavioural, emotional, and physical indicators of abuse and discuss implications for early childhood educators who recognize these indicators. The legalities surrounding the duty to report will be emphasized. The emotional and behavioural consequences for children who experience maltreatment, and the impact on group care and the overall safety needs within the early childhood setting, will be explored. Throughout the course, students will be encouraged to examine their own emotional responses to the subject of child maltreatment and consider how it will impact their practice as an early childhood educator.

EE2160 Child Development III
This course in child development focuses on the development of children in early childhood. The focus is on increasing students’ understanding of developmental milestones and growth patterns of children as they move out of toddlerhood until they reach school age.
Prerequisite(s): EE1161

EE2255 Advanced Behaviour Guidance Strategies
This course offers a more in-depth exploration of guidance theory and its application to the study of children with emotional and behavioural challenges. The possible causes and resulting challenges for children will be explored. There is an emphasis on developing practical skill in the prevention and management of challenging behaviour in a team approach. The goal is to develop the skills and an inventory of strategies such that educators are able to effectively support children with behavioural challenges.
Prerequisite(s): EE1270

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, and working in partnership with parents and the community.
Prerequisite(s): EE2270

EE2270 Curriculum III
This advanced curriculum course provides students with the opportunity to plan in three specific curriculum areas – math, science and language – and will provide them with the opportunity to relate this knowledge to the construction of learning webs.
Prerequisite(s): EE1171

EE2310 Family Studies III
Effective responses to families’ needs require an understanding of the demands and stresses on families. This course provides information on a number of family stressors, methods families use to cope, and supports that may be provided for children and families.
Prerequisite(s): EE1301

EE2360 Adult Development
This course provides a comprehensive overview of adult development. Students will explore developmental progression from middle adolescence through to late adulthood. There is an emphasis on exploring the primary developmental issues within each life stage and highlighting patterns. Students will have an opportunity to apply this knowledge when reflecting on their own personal/career development and analyzing their interactions with parents, colleagues, and the community.

EE2450 Creative Activities III – Music
This course provides the student with an introduction to the role of music in the social, physical, emotional, imaginative, and cognitive development of children. Emphasis will be given to a large repertory of songs and rhymes, basic music literacy, methodology, instruments, resource books and recordings.

EE2451 Creative Activities IV – Movement
This course is designed to teach students how to plan and provide movement experiences for all children. Such planning requires an understanding of the significance of large muscle development in children and the importance of physical activities in a child's growth. Both indoor and outdoor environments are considered in relation to the provision of movement activities.
Prerequisite(s): EE1171

EE2500 School-Age Development and Care
This is an introductory course in school-age care. The goal is to provide the early childhood education student with a foundation of knowledge and skill of 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 of school-age children.
Prerequisite(s): EE1160, EE1171

EEG1100 Engineering Graphics
This is an introductory level course in Engineering Graphics which uses CAD as a tool to produce engineer- ing 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 introduc-
tion to CAD, geometric terminology and constructions, orthographic projection, pictorial sketching, dimensioning conventions, and sectional views.

**EG1110 Engineering 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.

**EG1160 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.

**EG1210 Engineering Graphics**

This course is a continuation of Engineering Graphics EG1110 and EG1140. It is designed to provide students with a greater knowledge of advanced engineering graphics and CAD. Topics include auxiliary views, geometric applications, developments, intersections, and isometric drawing using AutoCAD and Pline and Pedit commands.

**Prerequisite(s):** EG1140

**EG1300 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

**EG1430 AutoCAD Essentials**

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 Developments, Piping Drawings, Welding Drawings and P & ID diagrams. The development and use of AutoCAD Symbol Libraries and Attribute Extraction will also be studied.

**Prerequisite(s):** EG1140

**EG2130 Engineering Graphics**

This is an advanced course in computer aided drafting and design. Parametric 3D CAD software is used for both computer 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

**EG2200 Presentation Graphics**

This course is taken concurrently with Architectural Working Drawings II and Building Services II and is designed to develop student’s presentation skills through the use of 3D CAD techniques. Students are exposed to building drawings using the interactive model format, with various 2D and 3D drawings extracted from a building database. Students are expected to produce photo-realistic colour images incorporating shadowing, diffusion, and reflection. A course designed to develop student’s presentation skills by using 3D CAD software. Projects are developed in an interactive format with the various drawings extracted from a 3D database. A variety of techniques including shadowing, light diffusion, and reflection are used to produce photo-realistic images.

**Prerequisite(s):** DR3100  
**Co-requisite(s):** DR3101, BU2201

**EH1100 Earth Systems**

Transferable to MUN Earth Sciences 1001. A survey of major earth systems, including the interior of the earth, lithosphere, hydrosphere, atmosphere, and biosphere – their structure, composition and interaction.

**Prerequisite(s):** EH1100 or MUN ES1000

**EH1101 Evolution of Earth Systems**

Transferable to MUN Earth Sciences 1001. The evolution of the earth’s structure and environment through eogological time are explored from the rock and fossil record. Particular emphasis is given to the geological history of North America, especially Newfoundland and Labrador.

**Prerequisite(s):** EH1100 or MUN ES1000

**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 ES1000

**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 Anglphone 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 basic 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.

**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. 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.

**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 only the present tense and 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 past tenses and more advanced structures. Students begin to read 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. 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.

**Prerequisite(s):** EL1430 or MUN French 1501.

**EL1500 Introduction to Linguistics**

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.

**EN1100 Environmental Science**

This is an introductory course in environmental science for Geomatics Engineering Technology. Since Environmental
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): CM2200, CM2300

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 those 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/CCME 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, BLT130

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.

EN3100 Environmental Engineering
This course is designed to acquaint the student with the major areas of pollution and control and mitigation. Students will gain an appreciation of the issues concerning sustainable development and acquire skills in the analysis and design of waste treatment systems. Basic issues in Environmental Engineering are examined. Pollution control, sustainable development and mitigation of the effects of pollution in air, on land and in the water.

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):** EO1003

**EO2002 Intermediate Speaking I**

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.

**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.

**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 II**

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. Writing 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 reading proficiency in a variety of tasks.

**Prerequisite(s):** EO4000

**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 writing proficiency in a variety of tasks.

**Prerequisite(s):** EO4001

**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 enrolment in a college credit course.**

**Prerequisite(s):** EO4003

**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 enrolment in a college credit course.**

**Prerequisite(s):** EO4004

**EP1100 Entrepreneurial Studies I**

This course is designed to develop an appreciation of small business, particularly as it relates to understanding the entrepreneurial process. The student will acquire the necessary skills and techniques to develop a sound business plan. Areas covered will include: market assessment,
financing alternatives, organizational structuring, and planning techniques. In addition, a feasibility study will be required to establish the demand for a particular growth sector in the economy.

EP1110 Introduction to Business ●
This course is an introduction to Canadian Business. The areas covered include: Canada’s business system, forms of business ownership, production, marketing, finance, personnel and labour relations, international business and small business ownership.

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.

EP2200 Business Planning ●
This is an 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 learner will also conduct a risk assessment and present their plan to a panel of industry experts. The student will apply his/her knowledge from previous terms in a practical manner.
Prerequisite(s): EP2250

EP2250 Small Business Development
This is an advanced course is the use of primary and secondary research techniques and analysis. The student will explore secondary research analysis, competition and demand analysis, project site and area evaluation, estimates of operating results, and economic feasibility study. The student will be required to produce and present a research report establishing the feasibility for an opportunity or a particular growth sector in the economy.

Topics for this report will be based on personal selection or on a mentoring process with a potential or present business owner. This plan is developed based on two prior years of Business Management education and is intended in part to prepare the student to own or operate a small business.

Prerequisite(s): CM2300, EC1110, AC2260, MA1670

EP2400 Business Solutions
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): EP1930 or EP1410; EP1130 or EP1150

ES1300 Manufacturing Processes I (Industry Overview)
This course is designed to give the beginning student a broad understanding of the scope of industrial manufacturing processes, with an emphasis on pulp and paper, mineral processing, petroleum production, and petroleum refining. The size, socioeconomic value and product range of each industry specific terminology, manufacturing methods, and the technologies used in product manufacture. Attention is given to the economics of each industry, challenges facing each industry, and future direction. Finally, students discuss the environmental abatement initiatives associated with the different industries and processes.

ES3301 Manufacturing Processes II (Pulping Processes)
In this course students are introduced to the series of processes that convert wood to pulp. Before going into the details of preparing wood for pulping, a brief study is made of the storage of pulpwod, wood handling, cleaning and debarking procedures, chip quality, chipping, and bark/wood waste disposal. After an introduction to the physical and chemical properties of wood, the processes associated with high-yield pulping methodologies are studied. Topics include groundwood techniques, chemical pulping methods and thermechanical pulping. Additional processes covered are pulp cleaning and washing, screening, bleaching, and pulp testing procedures.

ES3200 Manufacturing Processes III (Paper Making Processes)
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. Wet-end topics include pulp selection, stock preparation, stock proportioning, use of additives, approach systems, forming fabrics, sheet formation, stock dewatering, and wet-end chemical processes. Press section topics include press configurations, press roll designs and materials, and press felt design. Aspects of dryer operation encompass condensate removal, steam control, dryer ventilation, heat economy, hood designs and breaker stacks. After the dryer section, the student investigates unit processes and product qualities related to calendering, super-calendering, 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): ES1300

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 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.

ES3300 Manufacturing Processes V (Petroleum Refining Support Systems)
The purpose of this course is to introduce the student to specialized equipment, supporting refinery processes, and utilities found in a typical petroleum refining plant. Specialized equipment includes cooling towers, pressure vessels, fired heaters, heat exchangers, and storage tanks and tank farms. Supporting processes include flare and relief systems, effluent treatment, and sulphur removal/recovery. Utilities discussed consist of steam, nitrogen, instrument air, and refinery fuel systems. All processes and equipment explored will include operating principles, type, and application. The student must also be familiar with refinery safety issues, including exposure to toxic materials, special handling and safety procedures, fire hazards, fire prevention, and safe work procedures.

Prerequisite(s): ES2301

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.

ET1101 Electrotechnology
This is a continuation of the Electrotechnology course taken in the first semester. It covers the basics of A.C. theory and the application of this to solve circuits containing resistance, capacitance and inductance. An introduction to transformers and polyphase A.C. circuits is also included.
Prerequisite(s): ET1100

ET2100 Electrotechnology
This course covers advanced topics in A.C. and D.C. circuit analysis as well as an introduction to D.C. machines and transformers. It will provide the necessary background for students to enter second year Electrical and Electronics programs.

Prerequisite(s): ET1101, MA1101

EY1200 Ecosystem Ecology
This course investigates the ecological relationship of a variety of ecosystems that occur in Newfoundland and Labrador. This course will examine the ecological components and focus on identification of these components and the structure, function and adaptations of specific
organisms.
Prerequisite(s): BL1400

EY2110 Basic Ecology
This course focuses on basic ecological principles and concepts, ecological sampling techniques and field and laboratory exercises carried out in an appropriate environment. It involves significant and relevant field work, as well as the preparation of a report on terrestrial and aquatic ecosystems, populations, species interactions and ecological communities.

EY2210 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

EY2211 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): EY2210, FR1330 Co-requisite(s): FR2360, FT1401

EY2510 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.

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.

FH1320 Health, Safety, and Wellness
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. Emphasis will be placed on developing 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, safety and wellness. 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.

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 complement this program.

FH2120 Therapeutic Nutrition I
A study of diet 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): FH1121

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

FM2200 Mechanics
This is a foundation course that provides the fundamental concepts required for the understanding and development of basic engineering sciences, and builds on the principles developed in Physics PH1100. This first course in mechanics concentrates on the all important concepts of statics.
Prerequisite(s): MA1700, 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 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

FM3230 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

FM3300 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, EG1520 or DR2320

FM3320 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 experience and exposure.
Prerequisite(s): CF2540

FM3322 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

FR1230 Forest Fire Management
This course is an introductory course and will provide the student with basic information on activities concerned

Available through Distributed Learning
Available through correspondence
with the protection of forests from fire.

**FR1330 Natural Resource Measurements I**

This course is designed to introduce basic principles, skills and techniques in the sampling and measurement of natural resources with emphasis on forests and wildlife. Students will become competent in the use of the various tools and equipment used in the measurement and evaluation of natural resources. The application of map and compass, GPS, and aerial photographs through field exercises, in the evaluation of natural resources, is a key component of the course.

**Prerequisite(s):** SU1150, MA1100

**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

**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 studies.

**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 terms, environmental guidelines, and planning and operating practices. Students plan, do reconnaissance, and layout a forest road.

**Prerequisite(s):** SU1710, FT1400

**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 detail 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):** EY2211, 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

**FR2430 Wildlife Management**

An introduction to the basic Wildlife Management principles, concepts and techniques as they relate to big game, fur bearers, small game, waterfowl, 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.

**Prerequisite(s):**

**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):**

**FS1102 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 demonstrating empathy for the situations that many families are dealing with. Students will learn the roles associated with providing support to families.

**Prerequisite(s):** FS1101

**FT1240 Surveying Field Camp**

This is a one 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

**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

**FT1320 Surveying Camp**

This course has been designed to provide the student enrolled in the Civil Technology program with the opportunity to further their skills in construction surveying. Since surveying is an important job entry skill, students who have a high degree of competency in this area will have a greater chance of obtaining that all important first job.

This course will be a further application of the previous two courses in surveying. Actual work in the field will give the student greater experience in the area of construction surveying. The student will be exposed to the skills required to become competent in the area of building and highway layout. They will work in the area of building grades, location and layout; road grades, super-elevations, and horizontal and vertical curves.

**Prerequisite(s):** SU1541; SU3300; SU3500

**FT1330 Construction Camp**

This course has been included in the second technical intersession of the Civil Technology program to introduce the student, in a hands-on environment to various construction processes. In addition the course will provide the student with an insight into on-site supervision of construction.

**FT1400 Forestry Field Camp**

A two week field camp is conducted at the end of the intersession semester. This course 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

**FT1401 Forestry Tour Camp**

This five day field tour is designed to insure that students have an opportunity to visit and investigate a number of special forestry facilities and operations across the
FT1410 Fish and Wildlife Field Camp
A two-week field camp conducted at the end of the intercession 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 intercession.
Prerequisite(s): FR1330, SU1550
Co-requisite(s): RM1400, RM1500

FT1430 Fish & Wildlife Camp II
A one-week camp conducted during the third semester. This camp is designed to enable students to participate in research/project 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

FV1100 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.

FV1200 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.

FV1220 Short Film Production
This inter-sessional 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

FV1240 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): FV1200
Co-requisite(s): FV1250

FV1250 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): FV1200
Co-requisite(s): FV1240

FV1300 Language of Cinema
This course will introduce students to the grammar of cinematic language. Through lecture, discussion, historical survey and practical analysis students will gain an understanding of the way films are planned and assembled to present a coherent narrative.
Prerequisite(s): FV1100
Co-requisite(s): CM1550

FV1320 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): FV1300

FV1400 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.

FV1500 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.

FV2200 Documentary Film Production
This “project oriented” course will introduce students to the demands of development, funding, distribution and small unit / field crew film making normally associated with documentary film production.
Prerequisite(s): FV1320
Co-requisite(s): FV1400

FV2220 Final Film Production
In Final Film Production students will finalize a show reel illustrating their acquired skills.
Prerequisite(s): FV1220

FV2300 Cinematography
This course will cover the theoretical issues and practical application of the craft of cinematic photography and lighting.
Prerequisite(s): FV1300
Co-requisite(s): VA1400

FV1150 Introduction to Field Placement
This course is a pre-service orientation to field placement. Students will learn basic knowledge and skills necessary for a successful field placement experience. Field placement guidelines will be reviewed in depth. Students will participate in field placement under the supervision of an experienced early childhood educator. The weekly seminar will provide an opportunity to discuss and evaluate field placement experiences with fellow students and college faculty. There will be a focus on identifying and clarifying questions and concerns regarding practical experiences.
Prerequisite(s): CM1100, CM2100, CS1120, CS2420, HR1120, HR1210, SD1240

FW1310 Field Placement I
Students will experience an early childhood education placement which allows them to begin to link theory to practice. 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 observing, interacting and responding in positive ways to children. As the placement proceeds, students will be expected to determine individual children’s interests and begin to plan developmentally appropriate activities that relate to specific courses. Students will also participate in a weekly seminar.
Prerequisite(s): JL1827, JL1511, JL1430

FW1311 Field Placement II
During the second supervised placement in an early childhood program, the focus is on students participating fully and assisting with all aspects of the program as it relates to children and families. The focus throughout is making connections between theory and practice. It is expected that confidence is interacting with and guiding children’s behaviour is increasing. Students will begin to plan and implement a variety of developmentally appropriate activities and materials for individual children with the guidance of faculty and program staff. The importance of a quality environment and inclusive practices will be reinforced. Students are also expected to demonstrate more competence in working with staff and family/community members.
Prerequisite(s): EE1171, FW1310

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 field work training. In conjunction with a field supervisor (an employee in the placement agency), the instructor supervises and evaluates the student’s progress. 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 field work training. In conjunction with a field supervisor (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): CM1100, CM2100, CS1120, CS2420, HR1120, HR1210, SD1240

FW1451 Field Placement II
This course consists of a five-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.

**Prequisite(s):** FW1450

**FW1470 Field Placement I**
This course consists of a five-week placement in a hospital setting in a voluntary capacity. The program instructor will assist each student in securing a placement in a hospital setting which can meet the student's personal interests, goals and skill level. In conjunction with the field supervisor, the program instructor supervises and evaluates the student's progress.

**Prequisite(s):** WHMMS, NSSTP, 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.

**FW1710 Supervised Field Placement Experience I**
Supervised field placement is an integral part of the total curriculum and constitutes a basic preparation for a wide range of professional practice. Students review field placement requirements and documentation, types of placements, and professional conduct. 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).

**Prequisite(s):** Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record

**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 and constitutes a basic preparation for a wide range of professional practice. 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).

**Prequisite(s):** FW1700, Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record

**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. 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 behaviors.

**Prequisite(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 supervises and evaluates the student’s progress.

**Prequisite(s):** FW1470, WHMMS, NSSTP, 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.

**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).

**Prequisite(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).

**Prequisite(s):** FW2710, Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record, Current Resume

**GA1110 Graphic Arts History/typography**
This introductory course provides a clear understanding of the history of the Graphic Arts industry. The historical evolution of typography is studied from its beginning to its application in today's industry.

**Co-requisite(s):** MC1180

**GA1160 Graphic Arts Problem Solving**
A practical relevant mathematics course for Graphic Arts Technology, with direct application of relevant mathematics concepts. Topics emphasize problem solving skills with practical application to printing and design.

**GA1200 Post Press Operations I: Finishing and Related I**
This is an introductory course that provides the student with an understanding of the background and methods used for finishing and related activities that apply to graphic arts.

**GA1201 Post Press Operations II: Finishing and Related II**
This course provides the student with an understanding to the background and methods used for related activities that apply to graphic arts.

**Prequisite(s):** GA1200

**GA1340 Film Imposition I:**
Film Assembly/Stripping Basic
This is a basic film assembly course that will introduce the student to methods and procedures used plus the use of the required tools.

**GA1410 Page Layout I: Paste-up/Image Assembly**
This is an assembly course that provides the student with the basic technique of assembling visual elements. It is primarily a manual course that provides a foundation for electronic page layout techniques.

**Co-requisite(s):** GA1110, MC1180

**GA1411 Page Layout II: Page Layout/Image Assembly on Computer**
This is an electronic page assembly course that provides the student with the techniques of page layout software on the computer. The emphasis is on the flexibility of the page layout software as it applies to design and production for graphic arts.

**Prequisite(s):** GA1400; MC1180

**GA1510 Digital Imaging I**
This is a preparatory course in digital imaging that will give the student the foundational skills required to use equipment and software to record, store and manipulate digital images. The emphasis will be placed on an applied knowledge and understanding of both hardware and skills required for graphic arts.

**Prequisite(s):** MC1180, GA1160; GA1110

**GA1511 Digital Imaging II: Electronic Image Acquisition and Manipulation**
This course is designed to teach the student fundamentals of scanning and image manipulation. A strong emphasis is placed on both the scanner image manipulation software as it is used on Macintosh and PC/Windows Computers.

**Prequisite(s):** GA1510; GA1820

**GA1560 Publication Design**
This advanced course is designed to further develop students' abilities in publication design. Students will learn how to use industry standard illustration, digital imaging and page layout software to develop long, full colour publications. Emphasis will be placed on developing industry standard skills in design, layout, illustration and typography, as well as developing efficient production skills, students may elect to design and produce a publication on one of several topics.

**Prequisite(s):** Successful completion of all first-year graphic design courses, as well as VA2240 Graphic Design III.

**GA1600 Lithography I: Offset Press Operation**
This is an introductory course in the basic operation of small offset duplicators.

**GA1611 Lithography II: Offset Press Operation and Procedures**
This is an intermediate course in the application of the principles and practices of the offset press.

**Prequisite(s):** GA1600

Available through Distributed Learning
Available through correspondence
GA1630 Illustration I: Introduction to Illustration for Graphic Arts
This course is designed to introduce students to the basics of illustration as it is used in the Graphic Arts industry, and to help students develop their traditional and digital illustration skills. Observation and experimentation with current traditional and digital graphic arts drawing materials, and an emphasis on graphic arts projects are the focus of this course.
Prerequisite(s): MC1180

GA1631 Illustration II: Digital Illustration for Graphic Arts
This course will further develop students’ illustration skills using vector-based drawing software current in the Graphic Arts industry. An emphasis will be placed on complex projects that incorporate illustration, typographic, and layout skills.
Prerequisite(s): GA1160; VA1230; GA1110; GA1410; MC1180; GA1630

GA1800 Multimedia I: Introduction to Multimedia Design
This course is designed to develop students understanding of and ability in developing multimedia presentations at an introductory level. Students will develop an interactive multimedia presentation incorporating visuals, audio and text elements using image editing and multimedia presentation software. Students may elect to develop a multimedia presentation for a number of possible clients, including those that specialize in the marketing of products, services, or ideas.
Prerequisite(s): Successful completion of first-year Graphic Design courses.

GA1820 Colour Theory for Graphic Arts
This introductory course provides students with the skills necessary to effectively manage and use colour in a digital graphic arts environment. It introduces students to effective colour management principles on both Apple Macintosh and PC platforms, and covers colour systems and translations between colour gamuts in detail. The course also 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 images in graphic arts projects.
Prerequisite(s): MC1180

GA1840 Digital Output & Calibration: File Preparation and Output to Digital Devices
This course teaches the skills necessary for the student to output files to various digital devices such as: computer to film recorder, computer to polyester plate, and various digital printers. For optimum output conditions, each device requires maintenance and calibration.
Prerequisite(s): GA1510; GA1611 and completion of year one.

GA1870 Business Practices for Graphic Design
This course is designed to develop students’ understanding of common business practices in the Graphic Design industry. A specific focus of the course is to introduce students 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.
Prerequisite(s): Successful completion of all first year Graphic Design courses.

GA1875 Business Practices for Graphic Production
This course is designed to introduce the students to common business used in Graphic Production. Students will be introduced to all aspects of competitive job pricing as it applies to a variety of different types of work.
Prerequisite(s): Successful completion of all first year courses.

GA1930 Introduction to the Photographic Darkroom
This course will introduce the student to basic principles and procedures of the darkroom.

GA2230 Digital Printing
This course will give the student hands on skills in printing to digital devices. The demand for short run, full colour documents and on-demand printing requires the student to be proficient in these skill areas.
Prerequisite(s): Successful completion of semesters 1 through 4.

GA2360 Production for Graphic Designers
This course is designed to provide students with the skills necessary to prepare digital files for graphic design projects for production. Students will learn how to prepare electronic files for delivery to printers or service bureaus. An emphasis of the course is teaching students how to design work to avoid problems in the production process.
Prerequisite(s): Successful completion of all core Graphic Design courses in semesters 1 through 4, and the first intersession.

GA2410 Page Layout III: Page Layout/Image Assembly on Computer
This is an advanced electronic page assembly course that provides the student with the techniques of page layout software on the computer. The emphasis will be on advanced features of the software plus the exploration of different types of software for page layout.
Prerequisite(s): GA1410; GA1411; MC1180 and successful completion of year one.

GA2460 Production Practicum: Practical Job Experience and Speed Building
This is an advanced practical course that will help the student gain experience by combining all of their skills and applying them to practical jobs. An emphasis will be placed on production speed quality. It is intended that this course will bridge the gap between the work term and entry to the job market.
Prerequisite(s): GA1511; GA1611; GA2410; GA1840; GA2610; GA1201; WT1360 and successful completion of year 1

GA2470 Offset Press Production Practicum: Practical Job Experience and Speed Building
This is an advanced practical course that will help the student gain experience by combining all of their skills and applying them to practical jobs. An emphasis will be placed on production speed quality. It is intended that this course will bridge the gap between the work term and entry to the job market.
Prerequisite(s): GA1511; GA1611; GA2410; GA1840; GA2610; GA1201; WT1360 and successful completion of year 1

GA2560 Production Workflow & Quality Control
This is an advanced course that delivers the skills required to develop workflow methods while maintaining quality control. These methods will be achieved with the help of computer software and workflow devices developed by the student. Students will develop estimate sheets, quotation sheets, job dockets, and tracking system.
Prerequisite(s): GA1611; GA2610; GA1840 and successful completion of year one.

GA2610 Lithography III: Offset Press Operation and Procedures
This is an advanced course in the application of principles and practices of the offset press.
Prerequisite(s): GA1611

GD1100 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 both 2D and 3D games.

GD1101 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 2D and 3D environments. Terrain creation, object creation, lighting and texturing are among the topics focused on in this course.
Prerequisite(s): GD1100

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 Illustrator through a project driven curriculum.

GD1250 Interactive Narrative
Interactive Narrative studies the introduction 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.

GD1500 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): GD1101, GD1301

GD1501 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 these 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 of sound effects, interactive music, movement, and dialogue are also covered.

GD1600 Business of Gaming
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.
Co-requisite(s): CS2500

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): GD1301

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 Engineering Technology
This is an introductory course in physical geology and exploration geophysics designed for students in the Geomatics 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): GE1120

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): FM2110

GI1100 Historical Geography – Pre-history
This course begins with an overview of the geographic location, climatic conditions of the island of Newfoundland and the mainland Labrador, since the last glaciation. A study of the indigenous peoples of our province beginning with the 7,500 year old Maritime Archaic tradition, followed by the Paleo-Eskimo tradition, the Beothucks, the Naskapi-Montagnais, the Thule Eskimos, the Labrador Eskimos, and the Micmac tradition. 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.

GM1120 General Maintenance Procedures (M, E, S)
This M, E, and S course is to inform the student of the responsibilities and safety requirements when working in an aircraft environment. This course will also enable the student 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 student to work safely and efficiently in an aviation maintenance environment. This is to enable students 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 students entering into the Aviation Programs. This course enables the student 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 student with an in depth knowledge of Aircraft Weight and Balance. Students will be required to differentiate between fixed wing and rotary wing weight and balance, as well as longitudinal and lateral centre of gravity. Students 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 student with an in depth knowledge of Nondestructive testing techniques. Materials and equipment will be discussed.
GM1550 Maintenance Regulations (M,E,S)
This M, E, S course will provide the student 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 student 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.

GM1600 Structural Damage Repair & Assembly
This is an advanced course in aircraft sheet metal repair that will develop the student’s knowledge and skill to assess damaged structures, procure and repair aircraft components without a certified repair that meets airworthiness requirements.

Prerequisite(s): AF1201

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 students will compute 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
This 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.

GS1210 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.

GS2310 Project Planning and Management
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 acquisition, 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 the 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
This course introduces the student to the fundamentals of statistical methods relevant to geographic 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’s 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

Available through Distributed Learning
Available through correspondence
**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 food-service 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 influences 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.

**HM2380 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**
The course provides the student with an introductory approach to planning and executing meetings, special events and conferences for the hospitality industry. The course examines practical advice on every aspect of organizing and managing events, such as how to choose the best venue; preparing and managing the budget; scheduling, coordinating food and beverages, selecting décor, themes 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. 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.

**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.

**HN1400 Occupational Health & Safety**
This is an introductory course in the fundamental principles and practices 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 agree-
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/biyscott; 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

**HN2110 Dispute Resolution**

This course will examine in some depth the current processes, 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; staffing evaluation; and emerging trends in staffing. Students will have the opportunity to apply various staffing techniques and practices using case studies and application assignments. **Prerequisite(s):** HN1100, HN2120

**HN2130 Recruitment and Selection**

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 practices and procedures. **Prerequisite(s):** HN2140 and HN400

**HN2140 Attendance and Disability Management**

This course will examine in some depth the current processes, issues and practices involved in the training and development function. The students 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):** HN2140

**HN2150 Training and Development**

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):** HN2140

**HN2200 Strategic Compensation and Benefits**

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):** HN2140

**HN2110 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 seminar/paper on selected issues/topics/trends from among the following areas explored in this course: the field/practice of human resource management; the filed/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, HN2120, HN2130, HN2140, HN2200 **Co-require(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 helping 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**

The study of communication as it relates to effective human relations involving staff, children and parents. This course will include effective listening, oral and written skills as well as non-verbal communication.

**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 student with an introduction to the complexities of human interaction with respect to the work place. It is also the attempt that the course material will contribute to a better understanding of subject matter studied in other courses such as, construction law and construction management. A basic course in Human/Labour relations with emphasis on the role of the individual within an organization. Topics to be covered 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 management, prejudice, discrimination, and sexism. Students will be required to submit a term paper on a suitable topic as partial fulfillment of requirements of the course.

**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 NSFIP (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, sandwiches, meats and poultry, fish and seafood, dairy and beverages, bake shop, 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 practice 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. 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 supervisory role in order to practice the skills of planning, organizing, directing, controlling and evaluating the production and service.

Prerequisite(s): HS1151

HS2151 Food Preparation IV
This course is designed to give advanced practical experience in high quality quantity foods. The course builds upon fundamental concepts from previous courses and provides the student with supervisory experience of a dining room. Students will be placed in a supervisor role in order to further practice the skills of planning, organizing, directing, controlling and evaluating (PODCE) the production and service. Throughout the course, students will receive practical experience in preparing and serving meals suitable for restaurant dining service. Planning special meals and receptions is a function of every food-service. This includes coffees, teas, buffets, banquets and catered events. Students will develop menus for special functions and plan the layout.

Prerequisite(s): HS2150

HY1100 Art History I
This course covers Western Art History to the twentieth century. The course is designed to introduce students to the basic art-historical concepts. Topics include major art movements and artists, the cultural and social meanings and relevance of art, and discussion of crucial terminology such as quality and beauty.

Prerequisite(s): HY1100

HY1101 Art History II: Modern Art History
This is a survey course covering Western Art History of the twentieth century. The course is designed to introduce students to the basic art-historical concepts. This introduction includes major art movements and artists, the cultural and social meanings and relevance of art, and discussion of crucial terminology such as quality and beauty.

Prerequisite(s): HY1100

HY1200 Craft History
This course is designed to introduce students to crafts of the past while also exposing them to contemporary craft. Topics covered include concept, functions and origins of craft; techniques, technologies, and culture of craft; major craft movements; and historic craft works. Students will develop an appreciation of craft through participation in field trips and attending lectures from visiting artists.

Prerequisite(s): HY1100

HY1300 Newfoundland 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.

HY1320 Newfoundland History in the Twentieth Century
This course is a general survey of Newfoundland and Labrador in the twentieth century. The course begins with an examination of the major economic and political issues around the turn of the century, including construction of the railway, the First World War, political corruption and economic deprivation. It then focuses on major issues such as the Commission of Government, Confederation, and on the policies of subsequent governments. The course also examines the history of major industries and the emergence of major political and social movements and institutions.

HY1400 Architectural History
A brief architectural history course covering the period from ancient Egypt to modern day. Emphasis is placed on the factors which shape and influence architectural styles. The course discusses the impact of political, religious, climatic, economic, line of progression, and other factors on the thinking of designers. The relationship of design in related fields is also discussed. Students are expected to analyze present day buildings and identify the factors which influence their design.

HY2100 Art History III: Modern Art History
This survey examines the roots of modern art and the artists who broke new ground in visual explorations of the work around them. This survey will emphasize several significant landmark periods such as the Renaissance, the Rococo, Neo-Classicism, Romanticism and Impressionism.

Prerequisite(s): HY1101

HY2101 Art History IV: Modernism/Post-Modernism
This fourth semester art history course examines well-known movements associated with the 60’s, 70’s and early 80’s. 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 news worthy story ideas and develop them. The role of journalism and the journalist in society is examined through lectures, group discussions and written assignments.

JL1120 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.

JL1410 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 resumes, 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.

Prerequisite(s): JL1110

JL1580 Internet 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, prepare video and audio clips for streaming; prepare graphics and pictures for the Internet, and produce their own journalism website with the aid of user-friendly software.

JL1820 Newsroom I
Newsroom I is primarily a practical course in which students apply the journalistic principles they have learned in theory. The course seeks to mirror as closely as possible a newsroom setting, complete with story meetings, assignments and deadlines. The students help produce a youth website, a provincial youth newspaper, a weekly radio show and various video projects. Emphasis is placed on establishing good journalistic habits such as meeting
deadlines and meeting editors’ expectations. Students are expected to apply the principles they are learning in Reporting and News Writing I, Photojournalism I and Broadcast I.

JL1821 Newsroom II
Newsroom II is primarily a practical course in which students apply the journalistic principles they have learned in theory. The course seeks to mirror as closely as possible a newsroom setting, complete with story meetings, assignments and deadlines. The students help produce a youth website, a provincial youth newspaper, a weekly radio show and various video projects. Emphasis is placed on establishing good journalistic habits such as meeting deadlines and meeting editors’ expectations. Students are expected to apply the principles they are learning in Reporting and News Writing II, Photojournalism II, Broadcast II, and Layout and Design.

Prerequisite(s): JL1820

JL1830 Newsroom I (Post Diploma)
This is an accelerated version of the Newsroom I & II courses in the 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 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.

Prerequisite(s): JL1830

JL2120 Reporting and News Writing I ●
Journalism students learn how to cover major journalism beats such as politics, business, sports, entertainment, and lifestyles. The course also covers advanced principles of reporting and feature writing.

Prerequisite(s): JL1120

JL2270 Special Project(s)
Students will produce a major piece of public service journalism in either print, broadcast or Internet media. The resulting product must meet professional standards and be suitable for publication, broadcast or website posting. The project may be completed with an outside agency or as an independent project, subject to the instructor’s approval.

Prerequisite(s): JL2120; JL1511; JL1580

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 news website for Newfoundland and Labrador youth, a provincial youth newspaper, a weekly radio show and various video projects.

Prerequisite(s): JL1821

JL2821 Newsroom IV
Students will apply print, broadcast, photojournalism and Internet techniques. They will produce a provincial youth newspaper, 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.

Prerequisite(s): JL2820

LW1100 Business Law
This course is an introduction to the legal system; the Canadian and provincial judicial system; civil law, tort law; and introduction to contract law (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.

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 course has been designed to provide the student with a background in the tort law and contract laws of Canada. Its purpose is to familiarize the student with the responsibilities required of them under the law. Also, to relate to students how the law applied to the construction industry. Students will be given the opportunity to analyze the various documentation required for the legal operations of a construction project.

An introductory course dealing with the application of tort and contract law as applied to the construction environment. Topics to be covered include but are not limited to a study of various acts, provincial, federal and municipal that affect the construction phase of project development, the law of contract, insurance and bonding, the law of torts, construction claims, CCDC documents, ethics, etc. Lecture material will, as far as possible illustrate the application of the law using selected Newfoundland and Canadian court decisions.

LW1610 Management Construction Law
This is a course dealing with management principles and various laws applicable to the design and construction industry. It is designed to enable the student to become familiar with a number of generic management systems 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 peace officer and the proper investigation, recording and reporting of natural resource infractions. It includes information on patrolling, covert operations, use of decoys, powers of arrest, search and seizure, and interviewing techniques, as well as preparation for court proceedings and sentencing.

**Prerequisite(s):** LW2210

**LW2300 Officer Safety**
The student will be able to defend against most attacks, control and arrested person, 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 implications of using same.

**Prerequisite(s):** FH1250

**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

**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

**MA1040 Math Fundamentals I**
Math Fundamentals I is a Comprehensive Arts and Science (CAS) College 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) College 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 sin 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):** MA1100, 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.
Available through Distributed Learning

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 early childhood 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
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 merchandising.

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.

MA1670 Statistics
This course is designed to introduce the student to the basic principles of probability and 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 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

MA2710 Discrete 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

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 understanding of, computer systems and their operation; popular software packages and their applications; security issues of computers.

MC1080 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 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.

MC1180 Computer Systems for Graphic Arts
The introduction to basic computer operating systems and its various versions, and Apple/Macintosh with its icon operating system of graphical interface. A comparison will include the PC operating with Windows as compared to the Macintosh operating system. Students receive exposure to a cross platform networked environment with a variety of printers and peripherals.

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
The course is designed to expose the student to software packages that can be used to create spreadsheets and
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 windows 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.

ME1120 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.

Prerequisite(s): MH1200

MH2801 HVAC Systems
This course will introduce the fundamentals of H.V.A.C. It will provide students with an understanding of the methods of recognition and evaluation of various aspects related to H.V.A.C.

Prerequisite(s): MH1110

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.

Prerequisite(s): MH2330

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.

Prerequisite(s): MH2801

MH4301 Power Plant Design Calculations
In this course the students will apply the legislation and codes necessary for Power Engineers. The course also covers welding procedures, as well as the choice and design of piping and steam traps needed for the operation of a power plant.

Prerequisite(s): MH2330, MH1200

MH4401 Refrigeration Systems
This course provides the student with the necessary theory, knowledge and practical experience to understand the operation of refrigeration systems. The operation of heat exchangers and fired heaters is studied and the students learn to apply knowledge of preventative maintenance procedures.

Prerequisite(s): MH1200

MH4500 Prime Movers
This is a course designed to develop the basic skills needed to operate and maintain a process plant system.

Prerequisite(s): MH1110 or PO1100

MH4510 Prime Movers
This course provides the student with the necessary theory, knowledge and practical experiences to understand the operation of turbines, and internal combustion engines.

Prerequisite(s): MH1200, MH2330, MH2820

MH4600 Plant Systems Design
This course will introduce the student with the understanding and knowledge of acoustic, fire protection and smoke management, testing, adjusting and balancing of HVAC systems, equipment and ancillary schedule, cost estimate, mechanical specifications and detailed plant system design.

Prerequisite(s): MH2801

ML1000 General Laboratory Knowledge
Students will apply basic principles of mathematics, chemistry and physics to prepare reagents, to perform simple laboratory procedures, and to properly use and maintain basic laboratory equipment.

ML1010 Orientation and Medical Laboratory Skills
This course provides an orientation to the role and responsibilities of the Medical Laboratory Assistant in the health care field. Students will define the term professional and examine the desired characteristics of a health care worker. Ethics and liabilities of this career will be explored. Students will be introduced to accepted safety procedures for handling specimens, reagents, and equipment (includes WHMIS training). The laboratory sessions will introduce students to selected manual skills that are an integral part of medical technology.

ML1020 Basic Laboratory Calculations
This course will provide students with the mathematical skills required to prepare solutions, to read and record laboratory results, and to monitor quality control and quality assurance testing in the laboratory.

ML1030 Practical Clinical Chemistry
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, BL1260ML1040 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 histotechnolgy 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 uroanalysis, 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, antigen 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 microtome 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 artefacts. 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 provides students with a fundamental knowledge of transfusion from both the donor and patient perspective. Using the knowledge and skills obtained in ML2400, blood donation, blood component preparation composition and uses, donor and patient testing, adverse effects of transfusion, haemolytic disease of the fetus and newborn as well as autoimmune haemolytic diseases will be examined. Associated laboratory testing will be introduced in laboratory sessions.

Prerequisite(s): ML2400

ML2210 Hematology
In a simulated hospital laboratory setting, this course requires students to apply their pre-requisite knowledge of Hematology. Emphasis is on routine Hematology tests, procedures and venipuncture as well as interpretation, documentation and reporting of laboratory results. Additionally, safe work practices and quality control principles are reinforced. It also introduces students to automated hematological analysis.

Prerequisite(s): Successful completion of semester 5.

ML2211 Hematology
This is a comprehensive course in Hematology, encompassing the fundamentals and application of information acquired to date in this discipline. Emphasis is on normal and abnormal blood cell morphology, routine coagulation testing as well as interpretation, documentation and reporting of laboratory results. It also introduces the student to a working theory of special hematology stains.

Prerequisite(s): Successful completion of semester 7

ML2310 Histology
The student will be engaged in a laboratory simulation that will require them to apply all the knowledge they have gained. This course concentrates on the improvement of laboratory skills through practice.

Prerequisite(s): Successful completion of semester 5

ML2311 Histology
Students who successfully complete this course will perform processing, embedding, decalcification, section cutting biological staining and coverslipping working independently and as part of the laboratory team. The student will critically evaluate the blocks and slides produced and repeat those which are not of diagnostic quality.

Prerequisite(s): Successful completion of semester 7

ML2400 Introduction to Blood Group Systems
The course of study will provide students with a fundamental knowledge of the common human blood group systems. The implications of the immune system, human genetics, class of antibodies, and antigens will be examined. Common testing methodology will be introduced in laboratory sessions.

Prerequisite(s): Successful completion of all third semester courses.

ML2510 Transfusion Science
This course will introduce students to a simulated clinical experience in a Transfusion Science laboratory. The knowledge and skills obtained in ML2400 and ML1500 are applied to “real-life” situations. Prenatal and pre-transfusion testing is performed along with associated investigations of atypical human blood group antibodies.

Prerequisite(s): ML1510

ML2511 Transfusion Science
The 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

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
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 photograph, text and graphics acquisition and editing.

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-prerequisite(s): VA1100

MM1950 Workplace Professionalism
This course is designed to provide students with 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 how video works, broadcast video standards, integrating computer and television, shooting and editing video, recording formats, video tips, and video compression.

Prerequisite(s): MM1300

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, colour balancing and palette matching, bitmaps and scanned image editing.

MM2550 3D Texture and Digital Paint
Using standard image processing programs, 3D Texture and Digital Paint will introduce students to the artistic approach and technical aspects of custom texture generation, digital painting and application techniques for 3D.

Co-prerequisite(s): MM2600

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-prerequisite(s): MM2500

Available through Distributed Learning
Available through correspondence
MM2610 Introduction to 3D Animation
Introduction to 3D Animation will introduce students to the fundamentals of 3D animation. The course will include a general knowledge of the history, and potential applications of the medium, the basics of workflow organization and specific tool use.
Prerequisite(s): MM2610

MM2680 3D Character Animation
3D Character Animation will expand on the fundamentals of digital character animation covered in Introduction to 3D Animation. Practical exercises in a variety of animation scenarios, and essential editing and control features will be explored.
Prerequisite(s): MM2550

MM2700 Multimedia Lab I
This lab course will provide students with the opportunity to work on their multimedia applications with formal lab assistance and supervision. In this course students will apply principles and practices covered in the program to practical applications.
Prerequisite(s): MM2100

MM2710 Multimedia Lab II
This lab course will provide students with the opportunity to work on their multimedia applications with formal lab assistance and supervision. In this course, students will apply principles and practices covered in the program to practical applications.
Prerequisite(s): MM2101

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
Animation Design Project is offered during the intersession. This course will expose students to the rigors of the 3D production design environment. Through research and design assignments the students will be expected to produce a fully developed dossier of production documentation, subject to the instructor’s approval.
Prerequisite(s): MM1800

MM2830 3D Post-Production and Visual FX
Using an industry standard animation package 3D Post-Production and Visual FX will explore the concepts and techniques used to digitally create realistic simulations of various environmental conditions and natural phenomenon.
Prerequisite(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, collate, and present a body of work that best represents core strengths with a view to identifying and achieving career objectives.

MM1410 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.

MM1800 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 sustainable strategic forest ecosystem management plan for an assigned forest.
Prerequisite(s): FR1331, LW2210

MM1810 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.

MN2600 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. The student will explore the role of strategic management, external environment analysis, internal resources analysis, functional areas strategies, competitive strategies, corporate strategies, and strategic management in other organizations.
Prerequisite(s): Completion of all Second Year courses.

MN3100 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 in this course: 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, PS2340

MN3200 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, 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

MP2100 Electrical Machines and Devices
This is an intermediate level electrotechnology course designed for industrial instrumentation technology students. It is intended to familiarize the student with the construction, connection, operation and maintenance of rotating electric machines. Additionally, this course should expand the student’s understanding of electro-mechanical conversion principles. The laboratory work is included to reinforce theoretical concepts and enhance skills in the use of measuring instruments.
Prerequisite(s): ET1210

MP2140 Circuit Analysis I
This course covers advanced topics in A.C. and D.C. circuit analysis as well as an introduction to Two Port Networks. It will provide the necessary background for students to enter second year Electrical and Electronics programs.
Prerequisite(s): ET1101, MA1101

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 these concepts to analyze and solve advanced electrical circuits.
Prerequisite(s): MP2140, MA2100

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): EN2100, MA1101

MP3250 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

MP4200 Network Analysis  
This is an 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): MA2100, AE2301

MP7200 Electrical Power Sources  
A 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): ET1100

MP9290 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): ET1200

MP9290 AC Machines  
This course follows DC Machines MP9290 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): MP9290, MP2300

MP3130 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): ET1200, 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

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

MP3220 Power Systems: Analysis and Operation  
This course covers advanced topics related to electric energy systems, from both system analysis and system operation perspectives. Major topics include unit and plant scheduling, fault calculations, stability analysis, power flow calculations, as well as principles of protection and control. The student is also introduced to high voltage direct current (HVDC) transmission technology.  
Prerequisite(s): MP3215

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): MR2100

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.  
Prerequisite(s): CM1241, CM2200, MR2100

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.  
Prerequisite(s): CM1241, CM2200, MR2100

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.  
Prerequisite(s): CM1241, CM2200, 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 video-taped 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): CI1241, 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): MR2100, CM1241

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 assignment applications, 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 student 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 students 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, 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 it relates 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, 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

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 understand foreign markets, and to apply marketing concepts relevant to strategy development in foreign markets identified by exporting and transnational 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 understand 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

MS1230 Hand Tools
Upon successful completion of this unit, the apprentice will be able to develop safety practices in the use and care of hand tools; select, operate and maintain hand tools properly. Prerequisite(s): TS1510, TS1520, TS1530

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.

MT2400 Mineral Processing I
This course is designed to train the student to function efficiently in an ore concentration facility. The subject matter consists of sampling methods and procedures, flow-sheets, screens and screen analysis, pulp density, calculations, grinding-crushing equipment and size reduction calculations, classification, concentration and tailings disposal.
Prerequisite(s): MA2100

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 palletizing.
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.
skils. 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.

**MU2110 Instruments**
This introductory course explores the families of instruments used in all civilizations. Students will use a classification system to categorize instruments and to identify common operating principles.

**Prerequisite(s):** MU1100

**MU2120 Music Genres: Traditional**
This course provides a more detailed analysis of musical genres introduced in the Music and Culture course. Specifically, this course will address traditional genres that have greatly influenced the development of the traditional Newfoundland genre.

**Prerequisite(s):** MU1110

**MU2130 Music Genres: Popular**
This course explores the origins of popular music, the evolution of media and mass distribution, and traces the impact of popular music upon society

**MU2410 Performance III**
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.

**MU2411 Performance IV**
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, 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 MU2102, 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):** MU2102

**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 technologist responsibility. 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, MX2410, 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 present day sophisticated equipment safely, effectively and efficiently. The student will be taught the physics of operation of advanced imaging modalities such as computed tomography and digital fluorographic units, as well as mammographic and bone mineral densitometry units.

**Prerequisite(s):** MX2200, MX2310

**MX2310 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): MX2110, 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 interna-
tional, 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 ion-
izing 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, pathol-
ogy, radiation protection and patient care and safety will
be reinforced. Emphasis will be placed on intensive dem-
onstrations and application of clinical skills in profession-
all 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 disci-
plines in order to review patient data such as images and
reports from other studies through research and observa-
tion of other imaging and therapeutic modalities.
Prerequisite(s): Successful completion of Semester 5

MX3260 Clinical Radiography
This course is designed to provide extensive clinical expe-
rience to students. Applied knowledge of anatomy and
physiology, radiographic technique, pathology, radiation
protection and patient care will be reinforced. Emphasis
will be placed on intensive clinical demonstrations and
application of skills necessary for the student to become
competent in performing radiographic examinations in
the following areas: Vertebral Column, Pelvic Girdle/Upper
Femora, Shoulder Girdle, Upper and Lower Extremities,
and Operating Room/Mobile Radiography. The student
will also acquire clinical experience in Mammography
and Pediatrics. This course will take place over 15 weeks
under the direction and supervision of a clinical instructor
or designate.
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 fluorescent
dye bleeds out of the component to reveal a crack in its
surface. This course provides learners training for a 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): TS1520
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, mechan-
ical, and magnetic properties of metals. This course
provides learners training for Materials and Process
in preparation for national Non-Destructive Technician
Certification through Natural Resources Canada. This train-
ing 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 pro-
vides learners training for a Magnetic Particle Inspection
in preparation for national Non-Destructive Technician
Certification through Natural Resources Canada. This train-
ing will include both in class and practical training.

ND1310 Industrial Ultrasounds I
This course trains students to use high frequency sound
energy to conduct examinations and make measurements
in materials to detect flaws in the structure. This course
provides training in a Level I Industrial Ultrasound NDT Technician Certification.
Prerequisite(s): ND1130, TS1520, MA1080

ND1311 Industrial Ultrasound II
This course provides training for a Level II Industrial
Ultrasound’s NDT Technician Certification. Ultrasound’s trains
students to use high frequency sound energy to conduct
examinations and make measurements in materials to
determine flaws in the structure. Prerequisite(s): ND1310

ND1410 Industrial Radiography I
This course provides training for Level I Industrial
Radiography NDT Technician Certification. It also trains
students to send radiographic energy through a material
enabling a negative (Photo) to be produced of that mate-
rial 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
students to send radiographic energy through a material
enabling a negative (Photo) to be produced of that mate-
rial 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 students to radiation safety tech-
niques, 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 pro-
vide students an opportunity to become nationally certi-
fied 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 is designed to acquaint students with the
significant role of the office employee in business, the
importance of effective communication and the various
communications methods used, and to enhance desirable
personality traits and attitudes.

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 infor-
mation are also explored.

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 suc-
cessful and professional employee.
Prerequisite(s): OF1100, OF1101
Co-requisite(s): DM1201

OF2101 Office Management IV
Students will complete an office simulation which will
require them to perform research, make decisions, and
apply time management skills.
Prerequisite(s): DM2200

OF2300 MCP Billing
This course is designed to emphasize the preparation of
MCP claim forms relating to various medical procedures
in accordance with the guidelines established by the
Newfoundland Medical Care Plan.

OF2400 Medical Office Management I
This course is designed to acquaint the student with the
role of the secretary 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 func-
tion efficiently in a medical environment. Topics include
medical ethics and medical law, current medical issues,
records management, and planning and organizing meet-
ings and conferences. As well, 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 acquaints the student with the role of the
legal secretary and in particular educates the student in
such areas as sources of law, memoranda of law, diaries
and client records, the Newfoundland and Labrador court
system, civil litigation, and incorporation procedures for
Newfoundland and Labrador. In addition, emphasis is
placed on personal development of the student in areas
such as tact, confidentiality, personality development,
human relations, and personal appearance.
Prerequisite(s): OF1101
Co-requisite(s): DM2210
OF2510 Legal Office Procedures II (Wills, Estates Law, and Family Law)
The student is informed of the legal procedures in Newfoundland and Labrador regarding wills, the probate and administration of estates, and family law. Emphasis is also placed on office management skills and further personal development in areas such as human relations, current issues at work, and pose. The student is also exposed to a legal or quasi-legal work environment through a four-week work exposure program.
Prerequisite(s): OF2500
Co-requisite(s): DM3220

OF2520 Legal Office Procedures III (Real Estate)
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 also exposed to mortgage for purchasing and refinancing real property and to procedures for the purchase and sale of condominiums.
Prerequisite(s): OF2500
Co-requisite(s): DM3230

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 one of 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 workplace exposure.

OJ1100 Work Exposure
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

OJ1110 Work Exposure – (Certificate)
The work exposure is a required portion of the program and provides a unique learning experience in a real workplace setting. Work exposures must be program relevant and three weeks in duration. Students will complete three 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 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 Office Administration Certificate program with a minimum Grade Point Average of 2.00

OJ1160 On The Job Training
This six week unpaid workplace exposure program is designed to ensure that a graduating student has the opportunity to apply the knowledge gained in all courses previously completed. Students are expected to learn, develop, and demonstrate the high standards of behavior and performance expected in the work environment.
Prerequisite(s): Successful completion of all courses within the academic program.

OJ1180 On the Job Training, Northern Natural Resources
This three week unpaid workplace exposure program is designed to ensure that a graduating student has the opportunity of functioning with a real world employment setting. Students are placed with one of the many natural resources related agencies and their performance is evaluated by the employer.
Prerequisite(s): Successful completion of all program-related courses prior to work term

OJ1250 Work Exposure – Office Administration
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 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 Diploma program. They will further enhance their personal growth by developing employability skills such as team-building, customer service, work ethic, attitude, accountability, and the ability to work independently.
Prerequisite(s): Successful completion of all courses in the Office Administration Diploma program with a minimum Grade Point Average of 2.00

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 Forestry program (must be eligible to graduate).

OJ1301 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 world 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 for the Civil Engineering Technology 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): Successful completion of all courses in Semesters 1 to 5 of the HRM diploma program with a minimum GPA of 2.0

OJ1420 Work Exposure
Learners will gain an appreciation of the real world 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, accountability, further enhancing their personal growth.
Prerequisite(s): Clear academic standing for graduation

OJ1480 Hospitality Tourism Management Field Work I
This field related course is designed to assist students in obtaining occupational 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 the primary work experience for students in a position directly related to the field of study. The instructors will supervise and evaluate the students’ progress and provide feedback on their performance. The students will also be expected to complete assigned tasks and to attend all required meetings and workshops.

Prerequisite(s): Successful completion of all courses in Semesters one and two.

OJ153x 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. The 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 gained 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 1 to 5 of the Marketing Diploma program with a minimum GPA of 2.0

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 1 to 5 of the HRM diploma program with a minimum GPA of 2.0
QJ1580 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.
The student will complete six weeks in industry where she/he is 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. As well, she/he 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): Successful completion of all courses in semester 1 to 5 of the Accounting diploma program with a minimum GPA 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.
Prerequisite(s): OP1400

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 physiolo-

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 medico-legal concepts pertaining to prehospital care, and to the practice of the paramedic. In addition, the student will learn techniques of therapeutic communication, and develop an awareness of the ethical issues of providing care in the prehospital setting. The student will also learn about the role of the paramedic in EMS, and how the paramedic functions as a team member in the primary health model. Concepts of medical control, accountability and written and verbal documentation are introduced in this course. The student will learn their role in the development of personal and career professionalism. The student will be instructed in the theory related to safe defensive driving of an ambulance and the legalities related to operation of an emergency vehicle. A hands-on practical component of this training will introduce the student to safe defensive driving techniques and avoidance maneuvers on a controlled road surface with a simulated patient and caregiver on board a functional ambulance. The student will develop an understanding of the conditions that quality for removing an ambulance from service, and will learn the standard equipment and vehicle check that should be performed prior to putting an ambulance in service. The student will learn techniques for effectively communicating with a patient for general interactions and gathering history from the patient, bystanders, or significant others in the prehospital setting. The student will also learn effective methods and language used to interact with EMS personnel, and will develop a working knowledge of common communications systems and devices used in EMS. In addition, the student will develop skills in verbal and written documentation of prehospital patient care on both the student Patient Care Report (PCR) form and the provincial PCR. The student will be introduced to electronic documentation during their field and clinical practicum. In addition, the student will be provided written exercises to practice documentation, and perform verbal reports in the simulated and clinical setting.
Prerequisite(s): None
Co-requisite(s): PA1110, PA1150, PA1170, PA1310, PA1600

PA1150 Pathology of Disease/Injury
The student will learn the pathophysiology and signs and symptoms of common medical emergencies including: pulmonary (asthma, acute and chronic lung diseases, anaphylaxis, ARDS, hyperventilation syndrome, respiratory infections, carcinoma, and others), cardiac (atherosclerosis, angina, myocardial infarction, cardiac arrest, aneurysms, deep vein thrombosis, thrombotic emboli, hypertension and others), endocrine (diabetes mellitus), neurologic (brain attack, seizures, meningitis and others), gastrointestinal, urologic, gynecologic and obstetric (including neonatal resuscitation). Simulated patient assessments and skills labs will reinforce theoretical concepts related to these conditions. Interaction, and communication with patients with the above described medical emergencies or conditions will be introduced in this course. The student will apply the basic life support skills learned in PA1310 related to assessment and management of the medical patient, including the neonate and mother. The student will learn techniques for assessment and management of common trauma emergencies for the pediatric age group. The student will learn assessment and management strategies for common toxicologic emergencies, and theory related to common communicable diseases, including appropriate application of precaution and prevention of contamination or infection.
Co-requisite(s): PA1110, PA1130, PA1170, PA1310, PA1600

PA1170 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 provide practical assessments on health 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 monitoring, 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, PA1150, 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 further studies on drug administration in the second semester. The student will learn the concepts of Medical Control, Delegated Medical Acts, ethical behavior, protocols, scope
of practice, and accountability related to administration of medications.

Co-requisite(s): PA1110, PA1130, PA1150, PA1170, 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 to use during patient assessment. Although the didactic exercises in this course will focus on simulated situations, the student will be expected to apply the skill of Lead II EKG interpretation in the clinical and field practicum during the second semester.

Prerequisite(s): PA1110, PA1130, PA1150, PA1170, PA1310, PA1600

Co-requisite(s): PA1350, PA1510, PA1390, PA1500, PA1410, PA1610

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.

Prerequisite(s): PA1110, PA1130, PA1150, PA1170, PA1310, PA1600

Co-requisite(s): PA1510, PA1390, PA1330, PA1500, PA1410, PA1610

PA1390 Advanced Therapeutics
This course is designed to enable the student to acquire knowledge of theory related to peripheral intravenous access and intravenous therapy in preparation for applying the skill in the clinical and field settings. The student will learn about intravenous solutions commonly used in the field, as well as those solutions that are usually relegated to in-hospital care. The student will learn when crystalloids and colloids are used in fluid resuscitation. The student will develop an understanding of the rationale for intravenous therapy in the prehospital setting, and will learn guiding principles in the appropriate circumstances for starting IVs for select patient conditions, and for various patient age groups. In addition, the student will learn the theory behind intravenous medication administration, and key formulas for determining flow rates and how to calculate medication concentrations in intravenous fluid admixtures. Patient safety and the safety of the paramedic are paramount when invasive procedures such as intravenous therapy are used. The student will learn accepted methods of body substance isolation, and safe techniques for initiating intravenous and intravenous therapy, as well as accepted practice for disposal of sharps. In addition, the student is introduced to common drugs either used by patients or administered by the PCP. The student will learn the indications, and contraindications, complications, and appropriate administration of a select number of these drugs encountered in EMS, using various routes of administration including oral, subcutaneous, intramuscular, inhaled, and intravenous. The scope of practice of the PCP for the province of Newfoundland and Labrador supports the administration of seven drugs at the discretion of the paramedic, following protocols set down by medical control officers for ambulance services, or provincial medical control officers, in a skill set commonly referred to as the Symptom Relief Program (SRP). The student will learn, in detail, the indications and contraindications for administration of these medications. The student will learn the concepts of Medical Control, Delegated Medical Acts, ethical behavior, protocols, scope of practice, and accountability related to administration of medications. In addition, the student will learn the appropriate techniques for administering drugs through injection, inhalation, and oral routes. The student will learn methods for calculating drug dosages, quantities and amounts based on prescribed orders. In the Feeding and Drainage Tube Lab, the student will be introduced to various tubes that the patient may have in situ, including in body orifices, or through surgical openings. The scope of practice of the PCP is limited to being aware of these devices, and general information regarding supportive care for a patient with these devices implanted. In this course, the student will be provided the opportunity, in simulated scenario settings, to assess and care for the patient utilizing BLS skills including but not limited to: stethoscope, Sphygmomanometer, Cardiac Monitor (Lead II), Blood Glucose Monitor, Pulse Oximetry, AED, CPR, Intravenous fluid resuscitation, Symptom Relief Drug Administration, immobilization, patient positioning, and appropriate transport decisions. The student will also be tested in the simulated setting as part of the formal testing process prior to entering the second and third semester clinical and field practicums.

Prerequisite(s): PA1110, PA1130, PA1150, PA1170, PA1310, PA1600

Co-requisite(s): PA1350, PA1510, PA1330, PA1500, PA1410, PA1610

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 services, and in hospital, scheduled over the final 6 weeks of the second semester. The purpose of the first semester practicums 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 initial assessment, and provide basic care to patients at the Basic Life Support level. In the first semester, students will be placed with preceptors in Geriatrics for 16 hours, Emergency for 50 hours and on ambulance for 84 hours. In all three semesters, the preceptors will assist the student to apply theory and didactic content to the real world. Students will be provided a competency checklist for their Clinical (hospital) practicum. The competencies for the Field (ambulance) practicum are recorded on Palm pilots. The student will be provided these devices, and trained on the use of the electronic 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 healthy and unhealthy responses to stress. In this course, the student will develop skills in relating to and dealing with the suicidal patient, and will learn therapeutic interventions for patients in crisis in the two-day Therapeutic Crisis Intervention Workshop. Mental Health Assessment applies to all patients, and is particularly valuable to those patients who demonstrate emotional instability or disrupted thought processes characterized by some mental illnesses. The student will learn to differentiate between the patient displaying neuroses and psychoses.

PA1510 Special Populations
The student will learn 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 abuse and neglect of the person who depends on others for care.

Prerequisite(s): PA1110, PA1130, PA1150, PA1170, PA1310, PA1600

Co-requisite(s): PA1350, PA1390, PA1330, PA1500, PA1410, PA1610

PA1600 Clinical and Field Practicum 1
The clinical practicums for the Primary Care Paramedicine program are integrated into the first two semesters of the program, and comprise the entire third semester. The first semester involves rotations on ambulance and in hospital that are scheduled over the last 4 weeks of the first semester. The second semester involves rotations on ambulance and in hospital, scheduled over the final 6 weeks of the second semester. The learning objectives for field (ambulance) and clinical (hospital) practicums are based on the National Occupational Competencies Profile for paramedicine, which was developed by the Paramedic Association of Canada, and is used by the Canadian Medical Association Subcommittee on Accreditation of programs. Additional competencies beyond the minimum competencies stated in the NOCP are included as learning objectives to meet the needs of the provincial ambulance industry. The purpose of the first semester practicums 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 initial assessment, and provide basic care to patients at the Basic Life Support level. In the first semester, students will be placed with preceptors in Geriatrics for 16 hours, Emergency for 50 hours and on ambulance for 84 hours. In all three semesters, the preceptors will assist the student to apply theory and didactic content to the real world. Students will be provided a competency checklist for their Clinical (hospital) practicum. The competencies for the Field (ambulance) practicum are recorded on Palm pilots. The student will be provided these devices, and trained on 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. Faculty 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, PA1150, PA1170, PA1310

**PA1610 Clinical and Field Practicum II**
The clinical practicums for the Primary Care Paramedic program are integrated into the first two semesters of the program, and comprise the entire third semester. The first semester involves rotations on ambulance, and in hospital that are scheduled over the last 4 weeks of the first semester. The second semester involves rotations on ambulance and in hospital, scheduled over the final 6 weeks of the second semester. The learning objectives for field (ambulance) and clinical (hospital) practicums are based on the National Occupational Competencies Profile for paramedicine, which was developed by the Paramedic Association of Canada, and is used by the Canadian Medical Association Subcommittee on Accreditation of programs. Additional competencies beyond the minimum competencies stated in the NOCP are included as learning objectives to meet the needs of the provincial ambulance industry. The purpose of the second semester practicum is to provide the student the opportunity to continue applying all skills learned in the first and second semesters, primarily on ambulance, working alongside paramedic preceptors. During the third semester placement, the student is expected to clearly demonstrate that he/she is consistently proficient in all field competencies, performs in a professional manner, demonstrates initiative, and leadership in taking charge during the final weeks of the third semester field preceptorship. Students will be scheduled for a minimum 262.5 hrs on ambulance with field preceptors during the seven weeks of this semester. Additional time may be arranged if required for the student to meet incomplete competencies. Students will be provided a competency checklist for any of the outstanding clinical competencies not completed in their first and second semester Clinical (hospital) practicum. The competencies for the Field (ambulance) practicum will continue being recorded on the student’s Palm pilot. It is the responsibility of the student to ensure all competencies are met by the end of this semester. Students who have not met competencies within the accepted timelines for the semester, will meet with faculty to discuss remedial actions. Following remediation, sufficient additional placement time will be arranged based on the individual needs of the student. Faculty will review competency checklists on a frequent basis to ensure the student is progressing and meeting required competencies. Third semester placement is a continuation of the second semester placement. Students will receive a mid rotation evaluation near the end of the second semester, or at the beginning of the third semester. The mid rotation evaluation will identify student strengths and weaknesses, as well as clarify any outstanding competencies that are required to be met.

**Prerequisite(s):** PA1110, PA1130, PA1150, PA1170, PA1310, PA1600, PA1350, PA1510, PA1390, PA1610, PA1330, PA1500, PA1410

**PA1620 Clinical and Field Practicum III**
The clinical practicums for the Primary Care Paramedic program are integrated into the first two semesters of the program, and comprise the entire third semester. The first semester involves rotations on ambulance, and in hospital that are scheduled over the last 4 weeks of the first semester. The second semester involves rotations on ambulance and in hospital, scheduled over the final 6 weeks of the second semester. The learning objectives for field (ambulance) and clinical (hospital) practicums are based on the National Occupational Competencies Profile for paramedicine, which was developed by the Paramedic Association of Canada, and is used by the Canadian Medical Association Subcommittee on Accreditation of programs. Additional competencies beyond the minimum competencies stated in the NOCP are included as learning objectives to meet the needs of the provincial ambulance industry. The purpose of the third semester practicum is to provide the student the opportunity to continue applying all skills learned in the first and second semesters, primarily on ambulance, working alongside paramedic preceptors. During the third semester placement, the student is expected to clearly demonstrate that he/she is consistently proficient in all field competencies, performs in a professional manner, demonstrates initiative, and leadership in taking charge during the final weeks of the third semester field preceptorship. Students will be scheduled for a minimum 262.5 hrs on ambulance with field preceptors during the seven weeks of this semester. Additional time may be arranged if required for the student to meet incomplete competencies. Students will be provided a competency checklist for any of the outstanding clinical competencies not completed in their first and second semester Clinical (hospital) practicum. The competencies for the Field (ambulance) practicum will continue being recorded on the student’s Palm pilot. It is the responsibility of the student to ensure all competencies are met by the end of this semester. Students who have not met competencies within the accepted timelines for the semester, will meet with faculty to discuss remedial actions. Following remediation, sufficient additional placement time will be arranged based on the individual needs of the student. Faculty will review competency checklists on a frequent basis to ensure the student is progressing and meeting required competencies. Third semester placement is a continuation of the second semester placement. Students will receive a mid rotation evaluation near the end of the second semester, or at the beginning of the third semester. The mid rotation evaluation will identify student strengths and weaknesses, as well as clarify any outstanding competencies that are required to be met.

**Prerequisite(s):** PA1110, PA1130, PA1150, PA1170, PA1310, PA1600, PA1350, PA1510, PA1390, PA1610, PA1330, PA1500, PA1410

**PE1100 Basic Electronics (M, E)**
This M and E course is an introduction to electrical theory covering the basics 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.

**Prerequisite(s):** PD2110

**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.

**Prerequisite(s):** PE1100

**PE1300 Battery Maintenance (M, E)**
This M and E course is designed to have the student deep cycle an Aircraft Ni-Cad battery and charge an aircraft Lead acid battery.

**Prerequisite(s):** PE1200

**PE1350 Electrical Power Systems (M)**
This M only course 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

**PE1500 Electrical Machines**
This course introduces the student to electrical machines and transformers. It covers theory, typical configurations and operating parameters for both rotating machines and transformers. The students gain an appreciation of the machine types, circuit arrangements, and operating characteristics through lab exercises.

**Prerequisite(s):** ET1200

**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

**PE2100 Analog Electronics (M, E)**
This M and E course is an introduction to analog applications. The student will cover all basic theory in power supply, amplifiers, radio receivers and transmitters. In labs the student will identify symptoms in malfunction-
This course covers the care and use of hand tools, safety, PE2500 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): PE1140

Prerequisite(s): PE1101

Prerequisite(s): PE1101

Prerequisite(s): PE1101

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

Prerequisite(s): ET1101

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): CI1310, 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

PE2700 Industrial Instrumentation Practices

This course is designed to provide the instrumentation technologist with the knowledge and skills necessary to implement safe systems in an industrial environment. Emphasis will be on safe working practices and equipment installations in hazardous locations, instrument wiring and grounding considerations, tube and fitting installations, safety systems, and instrument air supply considerations.

Prerequisite(s): CI1310

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, FM2320

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.

PH1103 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.

Prerequisite(s): MA1700, PH1100

PH1120 Introductory Physics I

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 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 MA1104 or (MUN Mathematics 1090). MA1104 (MUN Mathematics 1090) may be taken concurrently.

Co-reqquisite(s): First semester pre-calculus Mathematics.

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 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 3204 in high school and enrolment in Mathematics 1130 (MUN Mathematics 1000) concurrently.

Co-reqquisite(s): Mathematics 1130 (MUN Mathematics 1000), which may be taken concurrently.

PH1131 Physics I

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. Computer will be used to collect and analyze data on simple physical systems.
Physics 1130 (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.

**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.

### PH1200 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

### PH1201 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):** PH1200

### PH1300 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):** PH1201

### 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 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):** MA1670, PM2220

### PM2310 Reservoir I

A first of two courses designed to provide an introduction to the principles and practices 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):** MA1670, TD2100

### PM2301 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):** MA1670, PM2310

### PM2400 Logging & Formation Evaluation

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 is a course in interpretation. It will cover production logging tools and the interpretation of the data obtained from those 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. The course has a project component where course work is related to the development of an oil field.

**Prerequisite(s):** CF2540, FM2100, 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 LIX and indirect fired heaters, condensate stabilization, acid gas treating, gas dehydration, gas compression, 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):** PM2211

### 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 (P&ID) 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):** EL1500
**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, CP3360, 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 interactivity 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

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 required courses prior to Semester 7.

PR2201 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.

PR2211 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.

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 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): PR2350

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. 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): PR2270

PR2300 Major Technical Project

This course exposes students to a major technical project that will be continued and developed in subsequent semesters. It is also designed to provide students with the opportunity to apply knowledge and skills gained in previous semesters to this project. Topics covered are broken down into the following areas: Architectural Working Drawings, Building Services, and CAD. It is intended that students develop a preliminary data base of their projects and to extensively address site development problems. Individual student presentations will be made.

Prerequisite(s): DR3101, BU2401, CF2601, BU2301, BU2201, BU2200, DS2200

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 a presentation of their solution.

Prerequisite(s): CP1950, CP4411, one of CM2300, CM1401, CP4411, one of CP2560, CP2130

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 project, 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 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

PR2561 Technical Thesis II

This 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 super-
vision 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. 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): PR2650 and all courses in previous academic semesters

PR2650 Technical 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.

Prerequisite(s): Successful completion of semester 6 & GPA = 2.00

PR2651 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): PR2650 and all courses in previous academic semesters

PR2660 Technical 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.

Prerequisite(s): Successful completion of semester 6 & GPA = 2.00

PR2661 Technical 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. 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): 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 their field of study. The student will carry out an in-depth study of a problem, design, or technical 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 supervisor.

Prerequisite(s): CM1401

PR2680 Technical 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 select project topics, in consultation with instructors and industry contacts. Students will carry out an in-depth study of a problem, design, or technical 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

PR2681 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. 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.

PR2700 Project Management
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 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): CM1401

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. 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.

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 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.

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.

Prerequisite(s): CM1401

PR3150 Project Management and Financial Analysis
This course introduces students 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 depreciation. Students are introduced to the use of project management software.

Prerequisite(s): PR2730 and all courses in previous academic semesters

PR3500 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): MA1101

PR3560 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): CM1401

PR3723 Technical Thesis
The technical thesis enables the student completing a Diploma in the Petroleum 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

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) psychology as a science, (2) learning, (3) perception, (4) sensation, (5) personality, and (6) human development.

PS1101 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.

PS1120 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.

PS1121 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

PS1150 Introduction to Psychology I
Transferable to MUN Psychology 1000.
This course introduces students 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.

PS2200 Developmental Psychology
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 students with the basic knowledge of the operation of aircraft reciprocating engines and engine components. Students 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 students with the basic knowledge of the design, construction and theory of operations of aircraft reciprocating engines.

Prerequisite(s): GM1120, GM1130

Co-requisite(s): PT1110

PT1210 Reciprocating Engine Systems (M)
This M course will provide the student with knowledge of reciprocating engine internal systems, their design, construction, operation, and maintenance.

Prerequisite(s): PT1115, AS5250

PT2121 Reciprocating Engine Overhaul (M)
This M course will provide the student with the knowledge of reciprocating engine inspection removal, installation, overhaul and maintenance procedures, so that he can develop sound maintenance practices.

Prerequisite(s): PT2120

PT2210 Turbine Engine Maintenance (M, E)
This M and E course is designed to provide the student with a comprehensive knowledge of turbine engine design and operation. Students will be disassembling a turbine engine and required to identify each component.

Prerequisite(s): GM1120, GM1130

PT2240 Turbine Engine Systems (M)
This M course will provide the student 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

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.

PY1101 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.

Prerequisite(s): PY1100

PY1320 Photожournalism 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 Photожournalism II
Building upon the technical foundation acquired in Photожournalism I, students will learn the principles of news and feature photography.

Prerequisite(s): PY1320

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, identification of landforms and environmental conditions.

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, size, sex 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, sizing techniques, maturity scales/indexes, preservatives, collecting methods, species identification and safety precautions.

Prerequisite(s): BL1120

Co-requisite(s): BL1400

RM1301 Fish and Wildlife Management Methods II
This course requires the use of traps, firearms, immobilizing and laboratory equipment, and a suitable

Available through Distributed Learning
Available through correspondence
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 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, and special media.

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 and procedures and career opportunities in the discipline.

RP1300 Active and Semi-active Records
This course involves a detailed examination of active, semi-active and non-active 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 the 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. 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 recognition of the planning and the human life stages to aid in understanding the resources required to provide programming. Students will learn about the 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.

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.

**Prerequisite(s):** RS1250

**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 the framework necessary to design recreation programs for older adults.

**RS1520 Risk Management and Legal Liability**

This course will overview the various forms of business and legal issues concerning recreation administration and operation of organizations and facilities operated by recreation practitioners. Students will review the components of the Canadian legal system. The area of risk management in recreation management will also be examined.

**RS1530 Principles and Procedures of Therapeutic Recreation**

This course introduces students to a number of key principles and procedures that are paramount in the development and delivery of comprehensive therapeutic recreation services and programs. Course material will focus on the importance of therapeutic recreation programming and various other theoretical and philosophical foundations for therapeutic recreation services.

**Prerequisite(s):** RS1450

**RT1610 Respiratory Therapy Clinical Orientation**

This course is a clinical review of respiratory therapy procedures, equipment, hospital policies and clinical skills prior to entering the RT III clinical year (Clinical Practicums I and Clinical Elective). This course is a mandatory requirement prior to entering the RT III clinical year.

**Prerequisite(s):** Successful completion of second year of Respiratory Therapy Program

**RT2200 Gas Supply and Control**

A study of the administration of medical gas therapies with the primary emphasis on the principles of operation of the various types of equipment utilized in the delivery of respiratory therapy.

**Prerequisite(s):** Successful completion of semester 3.

**RT2220 Mechanical Ventilation**

This course focuses on the physiological implications of instituting, maintaining, and discontinuing mechanical ventilatory support. Emphasis is placed on patient monitoring and evaluation of mechanical ventilatory techniques.

**Prerequisite(s):** Successful completion of semester 4

**RT2230 Mechanical Ventilators**

This course is a detailed technical analysis of mechanical ventilators. Major topics include systems of classification, functional analysis, the internal and external circuit, ventilator modes and controls, and quality control. Specific mechanical ventilators are analyzed in detail.

**Prerequisite(s):** Successful completion of semester 4

**RT2300 Pharmacology**

This is an introductory course in Pharmacology as applied to Respiratory Therapy. General principles relating to drug administration are studied. Emphasis is placed on drugs affecting the cardiovascular, respiratory and central nervous systems.

**Prerequisite(s):** Successful completion of semester 3

**RT2310 Anesthesia**

This is an introductory course in the principles and practices of anesthesia pertinent to the respiratory therapist. Major course topics include anesthesiology, vaporizers, breathing circuits, anesthetic ventilators, preoperative procedures, monitoring the anesthetized patient and complications of anesthesia.

**Prerequisite(s):** Successful completion of semester 4

**RT2450 Respiratory Therapy Procedures**

This course introduces students to the theory and application of clinical assessment and management skills requisite to the practice of respiratory therapy.

**Prerequisite(s):** 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 cardiopulmonary pathophysiology, neonatal ventilation.

**Prerequisite(s):** Successful completion of semester 4

**Co-requisite(s):** RT1220

**RT2452 Neonatal/Pediatric Respiratory Care II**

This course introduces the student to 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 5

**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 EKG strips; clinical significance; and basic treatment of arrhythmias is also studied.

**Prerequisite(s):** Successful completion of semester 4.

**RT3401 Comprehensive Respiratory Care**

This course is designed to assist the student with the integration of knowledge obtained in the previous semesters 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 III**

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 the various healthcare sites/areas including: Emergency Rooms, Intensive Care Units, Anesthesia Rooms, Cardiopulmonary Laboratories, and other locations. By rotating through various adult, pediatric and neonatal clinical areas, the student will acquire the necessary competencies and clinical proficiencies in respiratory care to successfully complete this practicum.

**Prerequisite(s):** Successful completion of the 2nd year of studies of the Respiratory Therapy program and mandatory completion of RT1610.

**RT3520 Clinical Practicum II**

This clinical practicum is a continuation of RT3510. As with the previous clinical course, students will have 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

**RW3140 Rotary Wing Aircraft (M)**

This M course is to introduce the student to the helicopter and the helicopter industry. Its aim is to provide students with knowledge of helicopter fundamentals, theory of flight and the different main rotor systems. This is to enable students to perform maintenance functions on a helicopter main rotor and associated systems.

**Prerequisite(s):** GM1120, GM1130
This course is to provide the students with knowledge of the basic systems found on a helicopter. This will enable the student to perform maintenance inspections and repairs on the complete aircraft.

**Prerequisite(s):** RW3140

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### 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.

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### SC1140 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.

**Prerequisite(s):** SC1120

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### 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.

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### 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.

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### 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.

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### 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.

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### 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 addictions, and women's health issues.

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### 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 examining and analyzing issues and concerns facing women in contemporary society from a feminist perspective, students will gain a better understanding of their own society and culture.

**Prerequisite(s):** SC1140

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### 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 documentaries attention will center on specific cultural groups/traits within Labrador, as well as their interrelationships, which constitute Labrador society.

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### SD1050 Personal Skills Development I

This course is aimed to examine and promote living skills necessary for aboriginal student success in post-secondary environments. This 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.

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### 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

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### 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.

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### 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.

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### SD1180 Field Placement Preparation I

This course is designed to prepare students for their first 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 1 and 2 courses

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### 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

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### 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, will 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.

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### 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 review ethical and legal guidelines to prepare them for placements with human service agencies.

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### 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 courses and begins the development of a career portfolio that the student will continue to work with and maintain throughout their program of study.

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### 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 courses designed to develop a career portfolio that the student will continue to work with throughout their program of study.

**Prerequisite(s):** SD1340

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### SD1420 Workplace Skills

This course develops sound customer service skills in the student and assists the student 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.

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### 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 co-operative 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.

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### 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.

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### SD1530 Change in the Workplace

Students examine the concepts of change in the workplace. Historical aspects of the Canadian Health Care...
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 accordance 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 accordance 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.

SD1640 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.

SD1660 Clinical Practicum I
This course allows the student to develop technical competence in pre-analytical procedures while reviewing theoretical material from previous semesters. The two week hospital rotation will emphasize the pre-analytical phase of the testing process and acquaint the student with the hospital operation and policies.
Prerequisite(s): Successful completion of all Semester 6 courses

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 work 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 work with throughout their program of study.

SD1860 Portfolio Development
This course is designed to provide students with the skills necessary to develop a professional portfolio and resume for employment in the Graphic Design industry. Students will learn how to assemble a professional looking portfolio, how to edit their work for a portfolio, how to design and prepare a resume, how to act in a job interview and job search techniques. It is expected that students in this course will already have developed a substantial body of their own work.
Prerequisite(s): Successful completion of Graphic Design core courses in semesters 1 through 4; all Graphic Design core courses in Intersession 1.

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

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 stu-
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 student will discuss 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

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 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

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 review and to complete the career portfolio started in the first semester of their program.

Prerequisite(s): SD2410 and 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.

SE1400 Auditing Occupational Health, Safety and Environmental Management Systems (HSEMS)
Hazard 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 students 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.

SE1440 Business Side of Occupational Health and Safety
The 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 from 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.

SE2100 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

SE2140 Safety & 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.

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 form the oil and gas industry, and the chemical process industries, will be used to demonstrate the necessity for a comprehensive Risk Management Program.

SE2500 Occupational Health & Safety Program Elements
This course will introduce the student to the key elements of an occupational health and safety program. The role of a Behavior-Based Safety Approach in the establishment of a strong safety culture will also be addressed. 

Prerequisite(s): SE1500

SE3300 Process Safety/Risk Management
The course is designed to enable the student to utilize industry-recognized standards and methodologies to assess risk, measure its 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

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. This course is divided into two parts, the first part focusing on the Earth and sky, and the second part focusing 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 on soils. Atmosphere and soils will lead into the second half which will concentrate on living systems with emphasis on ecology and elementary cell biology.

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 in 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 eat 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 extent 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 uses 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 and production 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 regulations pertaining to and the safe practices to be followed while carrying out radiographic testing. Health effects from radiation, monitoring radiation, controlling dose, standard operating procedure, regulations.

**SP1400 Facilities Engineering**  
This course is designed for Mechanical, Mechanical (Manufacturing) and Industrial Engineering Technology students. Development and application of preventive and predictive maintenance programs for industrial equipment and facilities is emphasized. Condition monitoring of equipment, preventive techniques including vibration analysis and fluid sampling are explained with practical applications and related exercises. A preventive and predictive maintenance program is developed as a project, using industry-recognized methods.

**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-Aided Manufacturing (CAM) software. It is delivered using computers to produce CAD/CAM programs that are applied through shop floor exercises with CNC Machining Centers. Instruction 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):** SP2310

**SP2330 Quality Assurance / Quality Control II**  
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

**SP2400 Safety Engineering**  
This course will provide the student with an overview of the fundamentals of occupational health and safety in the workplace.

**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**  
This 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 realistic situations. Further, since any proposal for innovation or change must be analyzed and described thoroughly, this course also emphasizes development of competencies in CAD and communications, with emphasis on the written report.  
**Prerequisite(s):** GE1430

**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):** VA1301

**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 while 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 techniques and materials and techniques. Specific print techniques include line and tonal etching processes, basic color 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): TX1500, 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, VA2250

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 quilt techniques, and implement the project.
Prerequisite(s): ST2300, VA2250

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 II
In this course students will learn more advanced apparel construction techniques. Topics include intermediate sewing techniques and draping techniques. Students will also be introduced to the CAD system to construct intermediate flat patterns. Students will construct a blouse and skirt using the CAD system.
Prerequisite(s): TX1400, VA1201

ST2401 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

ST2500 Design Studio
This course is designed to provide advanced graphic design students with the opportunity to investigate a design project of their choosing, in consultation with the instructor. Students may choose to partner with a private, government or non-profit organization in developing a joint project or they may choose to pursue a self-directed area of exploration. It is expected that students taking this course will be completely familiar with the design process, as well as with the tools of the design industry.
Prerequisite(s): Successful completion of all core Graphic Design courses in semesters 1 through 4, and Intersession 1.

ST2600 Knit II
In this course students will learn more advanced knitting techniques in addition to learning introductory machine knitting techniques and skills. Basic computer skills in knit will also be reviewed. Students will continue to maintain records of their work.
Prerequisite(s): TX1500, VA1201

ST2601 Knit 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 knit techniques, and implement the project.
Prerequisite(s): ST2600, 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.

SU1200 Plane Surveying
Plane Surveying is an introductory surveying course for technologists. Topics studied include, but are not limited to: measure of angle, direction and distance with appropriate instruction in the corresponding areas of traverse and coordinate computation. Included also are differential, profile, cross-section levelling. Field labs will emphasize use and care of surveying equipment, note taking and interpretation and plotting of field notes.
Prerequisite(s): MA1101
Co-requisite(s): DR1211

SU1210 Construction Surveying
This course is the second course in surveying being offered to students in the Civil Technology Program. Its purpose is to strengthen the surveying skills of students enrolled in the third term of the program, to teach them new skills in surveying that are directly related to the construction of buildings, roads and municipal services and to provide them with the required skills to successfully complete the construction camp to be offered in the second technical Intersession.
Prerequisite(s): SU1200, DR1211

SU1220 Surveying
This course is an introductory course designed to provide students with a basic understanding of the various types of surveys commonly used in the design and construction industry. This course deals mainly with surveys of relatively small areas such as building construction sites.
Prerequisite(s): MA1101, EG1110

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 levelling, 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.

Available through Distributed Learning
Available through correspondence
SU1440 Geographic Information Systems (GIS) I
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) II
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.

SU1441 Geographic Information Systems (GIS) III
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 operations on raster data. Spatial analysis will be taught with a focus on single and multiple layer systems and their use in marine engineering projects. 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.

SU2500 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.

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.

SU2530 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.

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 accuracies of the various GPS methods such as Static, RTK and Post processed solutions. Determination of position by use of the classical astronomic means is also addressed. Alternate satellite systems, Glonass and Galileo are presented.

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.

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 modelling and measurement in a 3D global context. This course expands on map projections and develops higher order corrections to positioning problems.

SU3540 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.

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. (A pass must be achieved in both the practical skills exam and the theory component in both Human Movement and Kinesiology and Introduction to Clinical Skills prior to starting Clinical Placement I.)

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. (A pass must be achieved in both the practical skills exam and the theory component in both Human Movement and Kinesiology and Introduction to Clinical Skills prior to starting Clinical Placement I.)
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 an Occupational Therapist Assistant or Physiotherapist Assistant.
Prerequisite(s): IA1611, 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): BI1350

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): BI1350, 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): BI1350

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 various 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

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.
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.

**TX1610 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.

**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 labelling 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 designed 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 labelling and other forms of warning, and introduce material safety data sheets (MSDS).

**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 switch 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.

**UL4210 Obstetrics**
This course is designed to enable students to acquire a comprehensive knowledge of obstetrics. The didactic phase will include instruction in normal pregnancy / fetal growth and development from fertilization to parturition. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal / abnormal sonographic appearances.

**Prerequisite(s):** Successful completion of semester 1

**Co-requisite(s):** UL4230, UL4311, UL4610

**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 abdominal and vascular examinations.

**UL4311 Basic Scanning II**
This is a comprehensive course designed to provide students 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.

**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

**Co-requisite(s):** UL4430

**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

**Co-requisite(s):** UL4420

**UL4510 Superficial Structures**
This course is designed to enable students to acquire a comprehensive knowledge of superficial organs and structures. The didactic phase of the program will include instruction in thyroid, parathyroid, scrotal, testes and musculoskeletal and salivary gland anatomy. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol and normal / abnormal sonographic appearances.

**Prerequisite(s):** Successful completion of 2nd Semester.

**UL4610 Clinical Training**
This phase of the program 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

**Co-requisite(s):** UL4210, UL4230, UL4311

**UL4611 Clinical Training**
This phase of the program is designed to enable the student 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

**Co-requisite(s):** UL4210, UL4230, UL4311
scans in all general and most specialty areas in an efficient and effective manner.

**Prerequisite(s):** Successful completion of semester 2

**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, techniques, and compositional studies are stressed in relation to developing the drawing. Particular individual attention is paid to drawing problem areas to ensure that the student develops strong drawing skills.

**Prerequisite(s):** VA1100

**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

**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.

**VA1230 Graphic Design I: Design Fundamentals**
This introductory course provides a clear introduction to the elements and principles of design, and how they can be utilized for basic graphic arts tasks. It also introduces students to the role of the Graphic Designer in the Graphic Arts industry, and exposes students to the basic operation of a design studio environment.

**VA1231 Graphic Design II: Design for Business**
This course is designed to further develop students’ 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 stationery, signage and display advertising.

**Prerequisite(s):** VA1230, GA1110, GA1410, MC1180

**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 that particular medium. Media covered include painting and ceramics.

**VA1301 Materials & Techniques II**
This is the second 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 that particular medium. Media covered include metal jewellery/sculpture and printmaking.

**Prerequisite(s):** VA1300

**VA1350 Animation 3D Modelling**
This course provides students with the skills to produce original pieces from clay or plastacine. 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):** VA1300

**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.

**VA1500 Photographic Illustration I**
An introduction to the basics of photography as applied to graphic art and design applications. The visual aspects and rendering of graphic information photographically reproduced towards enhancement of visual and graphic perception.

**Prerequisite(s):** VA1100

**VA1501 Photographic Illustration II**
A continuation of Photography I. This course stresses the importance of photographic insight as applied to the advertising industry. The reproduction of the photographic image as an intrinsic part of an overall design, and specifically as a design anchor point, will be especially emphasized.

**Prerequisite(s):** VA1500

**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

**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

**VA2231 Graphic Design IV: Corporate Identity Systems Design**
This course is designed to give advanced graphic design students an understanding of and experience with developing complex identity systems for the private, governmental and non-profit sectors.

**Prerequisite(s):** Successful completion of all first-year Graphic Design courses; GA1870; VA2240; GA1511; GA1800

**VA2240 Graphic Design II: Packaging Design**
This course is designed to introduce students to the theory and practice of package design. Students will be exposed to a variety of packaging concepts and options, and will apply their knowledge to the development of several packaging projects that incorporate their own ideas. Students will develop packaging solutions that meet clients’ needs using industry standard software on the Apple MacIntosh and PC platforms.

**Prerequisite(s):** Successful completion of all first-year Graphic Design courses.

**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

**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 and Peer Critique**
This course provides students with an opportunity to 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 allowing the opportunity to learn from the creative applications of those same peers.

**VA1100 Hydraulics**
This course is included in the Civil Engineering Technology program as an engineering science to provide the student...
with a knowledge of the principles of fluid mechanics and the application of these principles to practical applied problems. Students completing this course should have the ability to design and analyze practical fluid flow systems and continue learning other applied courses such as hydrology, urban services design, urban planning, etc.  

**Prerequisite(s):** MA1101, PF1101

**WA1120 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

**WA1200 Hydrology**  
This course is designed to serve as an introductory course, one that includes the major concepts and principles of hydrology.

**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 1. 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 students, 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 7 in the Electrical Engineering Technology (Power and Controls) program. Students are expected to learn, develop and demonstrate the high standards of behaviour and performance normally expected in the work environment. Students will be evaluated by their employer and submit a work term report within four weeks of returning to classes.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar

**WC1201 Work Term II**  
The second work term provides students possessing significant knowledge from the Electrical Engineering Technology (Power and Controls) Co-op program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 8. Students 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, students are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously assess the various opportunities relative to their individual interests. 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

**WC1250 Safety Program Development**  
This work term course is designed to allow students who have completed several specialty courses in Safety and Occupational Health, to undertake in-depth, on-the-job analysis and for development of a viable safety program. It follows the successful completion of academic semester one.

**WC1300 Work Term I**  
This work term follows the successful completion of Semester 5 (Academic Term). For most students, it represents their first professional work experience in a Surveying environment and, as such, represents their first opportunity to evaluate their choice of pursuing a career in Surveying. 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 semesters 1 - 5.

**WC1301 Work Term II**  
This work term follows the successful completion of Semester 7 (Academic Term). Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to undertake increasingly complex surveying tasks. Students should conscientiously assess the various opportunities relative to their individual interests.  

**Prerequisite(s):** Successful completion of semesters 1 - 7.

**WC1400 Co-Op Work Term I**  
This work term follows the successful completion of academic semester 6. 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 Industrial Engineering. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.  

**Prerequisite(s):** Eligibility according to co-op regulations in current college calendar

**WC1401 Co-Op Work Term II**  
This work term follows the successful completion of academic semester 6. Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to deal with increasingly technical industrial engineering principles and analysis techniques. Students should conscientiously assess the various opportunities relative to their individual interests.  

**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

**WC1521 Co-operate Work Term II**  
This work term follows the successful completion of Semester 3 in the Environmental Technology program. Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously assess the various opportunities relative to their individual interests. 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

**WC1700 Work Term I**  
For most students, this work term represents their first experience in an information technology 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. Students are expected to learn and develop and demonstrate the high standards of behaviour and performance normally expected in the work environment.  

**Prerequisite(s):** Successful completion of Semester 4 and GPA of 2.00

**WC1701 Work Term II**  
The second work term provides students with a substantial degree of academic achievement with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 5. Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the student demonstrating competence in both technical content and communication skills.  

**Prerequisite(s):** Successful completion of Semester 5 with GPA of 2.00

**WC1830 Work Term I**  
For most students, this work term represents their first experience in a processing 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 Chemical Process Engineering Technology Program. Students are expected to learn, develop and demonstrate the high standards of behaviour and performance normally expected in the work environment. Students will be evaluated by their employer and submit a work term report within four weeks of returning to classes.
Prerequisite(s): Eligibility according to Co-op regulations in current college calendar

WC1831 Work Term II
The second work term provides students possessing significant knowledge from the Chemical Process Engineering Technology program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 8. Students 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, students are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously assess the various opportunities relative to their individual interests. 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

WC2400 Co-Op Work Term III
This work term follows the successful completion of academic semester 8. 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. Students 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 their assigned work functions. 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 3, and WC1510 Work Term I and WC1520 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 fabrication 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 SMAW 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 SMAW as it relates to weld faults, causes for weld faults and means of prevention. Learners will also perform basic SMAW welds.

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, WD1110, WD2100, WD2101, 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 terms
WT1190 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. The College will attempt to find a suitable work term placement for the student; however, if the College cannot find a suitable work placement, it is the responsibility of the student to find a suitable work placement. 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 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. 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 students, this work term represents their first experience in an 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) program. Students are expected to learn, develop and demonstrate the high standards of behavior and performance normally expected in the work environment. Students will be evaluated by their employer and submit a work term report within four weeks of returning to classes.
Prerequisite(s): FT1620 and 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, setting. 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 engineering 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.

XD1350 Environment & Ethics
This course introduces students to the legal and ethical rights, obligations and responsibilities of the engineering profession. Through the use of readings, case studies and debates, students 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 student to solid state electronics in motor controls. It includes coverage of power electronic devices, solid state relays and protection devices, and drive electronics.
Prerequisite(s): DP1100; AE2301; XD2300

XD2300 Electromechanical Motor Controls
This course introduces the student to motor control concepts and electromechanical control devices. The students become familiar with control diagrams, techniques, and methods. It provides the students with knowledge and background to support the more advanced control concepts presented in later courses.
Prerequisite(s): PET500, PE1510

XD2500 Programmable Controllers I
This course introduces the student to programmable logic controllers. It covers PLC concepts and applications. The students become familiar with PLC types, wiring details and programming techniques. Actual programs and system operation are introduced through lab exercises.
Prerequisite(s): DP1100; XD2300

XD2900 Programmable Controllers II
This course is a continuation of XD2500. It extends the students knowledge of PLC control through advanced instructions and practical exercises with industrial control trainers.
Prerequisite(s): XD2500