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Thank you for your interest in College of the North Atlantic and welcome to our existing learners.

I invite you to explore our 2013-2014 Academic Calendar to see what we have to offer and/or to discover what CNA can do to help you shape your future career. Our programs and training have helped thousands of our learners achieve rewarding and wonderful careers regionally, nationally and internationally and they can do the same for you.

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

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

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

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

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

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

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

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

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

About the College

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

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

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

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

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

BAIE VERTE CAMPUS
- Home Support Worker/Personal Care Attendant
- Industrial Mechanic (Millwright)
- Office Administration
  - Certificate
  - Executive
- Welder

BAY ST. GEORGE CAMPUS
- Automotive Service Technician
- Baker
- Business Administration
  - Accounting
  - General
  - Human Resource Management
  - Marketing
- Commercial Driver
- Community Studies
- Comprehensive Arts & Science (CAS)
  - Transition
- Conservation Law Enforcement
- Construction/Industrial Electrician
- Cook
- Digital Animation
- Film and Video Production
- Hairstylist
- Heavy Duty Equipment Technician
- Heavy Equipment Operator
- Heavy Equipment Operator (Jan. 2014 Intake)
  - Dual campus offering with St. Anthony
- Journalism
- Journalism (Post Diploma)
- Mobile Crane Operator
- Music Industry and Performance
- Office Administration
  - Certificate
  - Executive
  - Records & Information Management
- Primary Care Paramedicine
- Recording Arts
- Small Equipment Service Technician
- Truck and Transport Mechanic
- Video Game Design

BONAVISTA CAMPUS
- Construction/Industrial Electrician
- Cook
- Office Administration
  - Certificate
- Plumber

BURIN CAMPUS
- Comprehensive Arts & Science (CAS)
  - Transfer: College-University
- Construction/Industrial Electrician
- Cook
- Instrumentation and Control Technician
- Metal Fabricator (Fitter)
- Office Administration
  - Certificate
  - Executive
- Sheet Metal Worker
- Welder
- Welding Engineering Technician

CARBONEAR CAMPUS
- Business Administration (Next intake is 2015)
  - Accounting
  - Human Resources Management
- Carpenter
- Community Studies (Next intake is 2014)
- Comprehensive Arts & Science (CAS)
  - Transfer: College-University
  - Transition
- Construction/Industrial Electrician
- Engineering Technology (First Year)
- Heritage Carpentry

CLARENVILLE CAMPUS
- Business Administration
  - Accounting
- Human Resources Management
- Carpenter
- Comprehensive Arts and Science (CAS)
  - Transition
- Office Administration
  - Certificate
  - Executive
- Practical Nurse
- Steamfitter/Pipefitter

CORNER BROOK CAMPUS
- Business Administration
  - Accounting
  - Marketing
- Civil Engineering Technology Co-op
- Comprehensive Arts & Science (CAS)
  - Transition
- Computer Systems and Networking
- Construction/Industrial Electrician
- Early Childhood Education
- Engineering Technology (First Year)
- Fish and Wildlife Technician
- Forest Resources Technician
- GIS Applications Specialist (Post Diploma)
- Home Support Worker/Personal Care Attendant
- Industrial Mechanic (Millwright)
- Office Administration
  - Certificate
  - Executive
- Power Engineer (4th Class)
- Practical Nurse
- Process Operations Engineering Technology
- Software Development (Next intake is 2014)
- Welder

GANDER CAMPUS
- Aircraft Maintenance Engineering Technician
- Aircraft Structural Repair Technician
- Automotive Service Technician
- Comprehensive Arts and Science (CAS)
  - Transition
- Engineering Technology (First Year)
- Hairstylist
- Instrumentation and Control Technician

GRAND FALLS-WINDSOR-WINDSOR CAMPUS
- Business Administration
  - Accounting
  - Human Resource Management
- Business Management
  - Accounting
  - Human Resource Management
- Community Studies (Next intake is 2014)
- Comprehensive Arts and Science (CAS)
  - Transition
- Medical Laboratory Assistant
- Office Administration
  - Certificate
  - Executive
- Practical Nurse
- Renovation Technician (Next intake is 2015)

HAPPY VALLEY-GOOSE BAY CAMPUS
- Aboriginal Bridging
- Carpenter
- Community Studies (Next intake is 2014)
- Comprehensive Arts and Science (CAS)
  - Transfer: College-University
- Happy Valley-Goose Bay Campus
- In Transition

LABRADOR WEST CAMPUS
- Comprehensive Arts and Science (CAS)
  - Transfer: College-University
- Conservation Law Enforcement
- Construction/Industrial Electrician
- Industrial Mechanic (Millwright)
- Mining Technician
- Office Administration (Next intake is 2015)
  - Certificate
  - Executive
- Welder

PLACENTIA CAMPUS
- Heavy Duty Equipment Technician
- Heavy Equipment Operator
- Home Support Worker/Personal Care Attendant
- Industrial Mechanic (Millwright)
- Machinist
  - Certificate
  - Dual campus offering with Prince Philip Drive
- Process Operator
- Welder

PORT AUX BASQUES CAMPUS
- Business Administration
  - General
- Cabinetmaker
- Non-Destructive Testing Technician
- Office Administration
  - Certificate
  - Executive
- Welder
  - Metal Fabricator (Fitter)

PRINCE PHILIP DRIVE CAMPUS
- 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 Communications (Next intake is 2014)
- Graphic Design
- Hospitality Tourism Management (Next intake is 2014)
- Machinist
  - Dual campus offering with Prince Philip Drive
- Medical Laboratory Sciences
- Medical Radiography
- Motor Vehicle Body Repairer (Metal and Paint)
- Office Administration
  - Certificate
  - Executive
  - Legal
  - Medical
Campus Directory

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

Bay St. George Campus
DSB Frowlow Building
432 Massachusetts Drive
P.O. Box 5400
Stephenville, NL A2N 2S6
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
165 Main Street
P.O. Box 370
Burin Bay Arm, NL A0E 1G0
tel: (709) 891-5600
fax: (709) 891-2256

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

Clarenville Campus
69 Pleasant Street
Clarenville, NL A5A 1V9
tel: (709) 466-9900
fax: (709) 466-2771

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

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

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

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

Labrador West Campus
1600 Nichols-Adam Highway
Labrador City, NL A2V 0B8
tel: (709) 944-7210
fax: (709) 944-6581

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

Port aux Basques Campus
59 Grand Bay Road
P.O. Box 760
Port aux Basques, NL A0M 1C0
tel: (709) 695-3582
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 4S0
tel: (709) 466-9850
fax: (709) 466-2004

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
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 6 (Tuesday)
Registration begins for Distributed Learning - Fall Semester

September 2 (Monday)
Labour Day, College CLOSED

September 3 (Tuesday)
Registration begins - Fall Semester
Orientation/First day of Fall Semester classes

September 9 (Monday)
Distributed Learning - Online Classes Start – Fall Semester

September 17 (Tuesday)
Last day to add courses – Fall Semester

September 24 (Tuesday)
Last day to opt out of the Health and Dental Plan – Fall Semester

October 1 (Tuesday)
Fees Due – Fall Semester

October 14 (Monday)
College CLOSED – Thanksgiving Day

October 29 (Tuesday)
Last day to drop courses without academic prejudice – Fall Semester

November 11 (Monday)
College CLOSED – Remembrance Day

December 3 (Tuesday)
Registration begins for Distributed Learning – Winter Semester

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

December 19 (Thursday) – January 5 (Sunday)
Christmas Break

January 6 (Monday)
Registration/Classes begin – Winter Semester
Distributed Learning/Online Classes Begin – Winter Semester

January 20 (Monday)
Last day to add courses – Winter Semester

January 27 (Monday)
Last day to opt out of the Health and Dental Plan for new learners – Winter Semester

February 3 (Monday)
Fees Due – Winter Semester

February 28 (Friday)
Last day to drop courses without academic prejudice – Winter Semester

March 3 – 7 (Monday – Friday)
Winter Semester Reading Break

April 8 (Tuesday)
Registration begins for Distributed Learning - Intersession

April 18 (Friday)
College CLOSED - Good Friday

April 21 (Monday)
Easter Monday (Classes – not a holiday)

April 29 (Tuesday)*
Last day of classes/examinations - Winter Semester

April 30 (Wednesday)
Registration/Classes begin – Intersession, Continuing Programs
Registration begins – Spring Semester

May 7 (Wednesday)
Registration/Classes begin - Technical Intersession
Distributed Learning/Online Classes begin
Intersession Semester
Registration/Classes begin – Technical Spring Semester
Last day to add courses – Intersession, Continuing Programs

May 13 (Tuesday)
Last day to add courses - Technical Intersession

May 14 (Wednesday)
Fees Due – Intersession, Continuing Programs
Last day to add courses - Spring Semester
Last day to drop courses – Intersession, Continuing Programs
Last day to opt out of the Health and Dental Plan for new learners – Intersession, Continuing Programs

May 19 (Monday)
College CLOSED – Victoria Day

May 20 (Tuesday)
Fees Due – Technical Intersession
Last day to add courses – Technical Intersession
Last day to drop courses – Technical Intersession
Last day to add courses – Technical Spring Semester

May 21 (Wednesday)
Last day to opt out of the Health and Dental Plan for new learners – Spring Semester

May 27 (Tuesday)
Last day to opt out of the Health and Dental Plan for new learners – Technical Spring Semester

May 28 (Wednesday)
Fees Due – Spring Semester

June 3 (Tuesday)
Fees Due – Technical Spring Semester

June 13 (Friday)
Last day for classes/examinations – Intersession – Continuing Programs

June 20 (Friday)
Last day for classes/examinations – Technical Intersession

June 23 (Monday)
College CLOSED - Discovery Day

June 25 (Wednesday)
Last day to drop courses without academic prejudice – Spring Semester

June 30 (Monday)
Last day to drop courses without academic prejudice – Technical Spring Semester

July 1 (Tuesday)
College CLOSED – Canada Day

August 15 (Friday)
Last day of classes/examinations – Spring Semester

August 22 (Friday)
Last day of classes/examinations – Technical Spring Semester

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

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

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

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

Academic and Learner Services
Cyril Organ, Vice President – Academic and Learner Services
Elizabeth Chaulk, Associate Vice President – Learner Services
Tammy Gale, Executive Assistant
Bryan Tobin, Director – Academic Programs & Institutional Research
Chris Mercer, Registrar (Acting)

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

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

Human Resources
Mary Tait, Acting Executive Director
Debbie White, Executive Assistant

Qatar Project Office
Kevin Deveau, Project Manager – Qatar Project
Vivienne White, Executive Assistant

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

CAMPS ADMINISTRATORS
Baie Verte Campus
Emily Foster

Bay St. George Campus
Chris Dohaney
Brian Foley
Darlene Oake

Bonavista Campus
Marilyn Coles-Hayley

Burin Campus
Stephen Warren

Carbonear Campus
Gary Myrden

Clarenville Campus
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
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
Conrad Maillet

Ridge Road Campus
Paul Forward
Gary Tulk

Seal Cove Campus
Chris Patey

St. Anthony Campus
Cecil Roberts
Admissions Regulations

ACCESS TO INFORMATION AND PROTECTION OF PRIVACY ACT (ATIPPA)

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

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

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

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

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

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

It is the policy of the college to maintain an “open admission policy”. Learners will be admitted into a program on a first-come, first-served basis as assessed by the date of receipt of their application and on the proviso that the candidate learners meet the minimum qualifications prescribed. Applications may be submitted at any time. Students currently in high school must be in their final year of high school at the time of application submission.

ENTRY INTO FULL-TIME PROGRAMS

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

HIGH SCHOOL DEFINITION

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

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

HIGH SCHOOL EQUIVALENCY

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

Persons holding certificates as listed in 1, 2, or 3:
• will be accepted into certificate programs without further evaluation.
• may be required to report for further evaluation before acceptance into diploma programs is established; and upon being accepted, those applicants may be required to complete additional courses before entering the diploma program of their choice.

MATURE STUDENT REQUIREMENTS

Applicants who do not meet the educational prerequisites for the program they wish to enter may be considered for admission on an individual basis provided the following conditions are met:
1. Applicants are at least 19 years of age at the time of application.
2. Applicants have been out of high school for at least one year.
3. Applicants present a certified copy of grades for the highest educational level attained.
4. Applicants complete the standardized assessment instrument at a level approved by the college.

SPECIAL ADMISSIONS

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

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

Applicants with disabilities, who do not meet program entrance requirements, will undergo further review to determine eligibility for admission. This may include:
1. Reviewing the applicant’s supporting documentation.
2. Reviewing the recommendation of the sponsoring or supporting group (if applicable).
3. Summarizing the applicant’s strengths and abilities.
4. Determining the need for supports required to facilitate the integration of the applicant.
5. Identifying necessary resources/equipment required to facilitate the training.

HOME SCHOOLING ADMISSION GUIDELINES

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

ADMISSIONS PORTFOLIO GUIDELINES

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

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

General Guidelines:
1. All work in the portfolio should be clearly labeled with the prospective applicant’s name, title of the work, number of pieces, date created and materials used;
2. The college will only accept portfolios in a proper portfolio folder or case;
3. Portfolios should include a printed listing of the contents of the portfolio;
4. All works should fit into a standard size portfolio case and may be presented in their original form;
5. Large scale, fragile or 3-dimensional work should be submitted in 35 mm. color slide form, as digital images at a resolution of 150 dpi or as color 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:
1. Applications will be processed on a “first-come, first-served” basis. All applications are processed on a first-come, first-served basis. Candidates will be admitted into the first class eligible to begin classes. A learner who does not expect to attend classes immediately should mail all required documentation to the college’s registrar before the end of the existing eligibility list.

2. Learners who have been academically dismissed from the college on a second semester have reached the end of the existing eligibility list.

3. Learners who are required to withdraw from the college prior to the end of the existing eligibility list.

4. All fees and deadlines for regularly admitted learners are satisfied and all necessary documentation is received.

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 CDN $100 (non-refundable)
4. proof of proficiency in English

**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.

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**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 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 formally recognizing both institutions may be awarded. This parchment would recognize both institutions and may contain the signatures of duly authorized officers of both institutions.

Parchments for Workforce Development
1. Diploma in Skill Development
   Awarded upon completion of a program that is at least two years in duration for which learning is measured and evaluated.
2. Certificate in Skill Development
   Awarded upon completion of a program that is normally one year in duration but not less than one academic semester for which learning is measured and evaluated.
3. Certificate of Achievement
   Awarded upon successful completion of a program of less than one academic semester or upon completion of an academic course for which learning is measured and evaluated.
4. Continuing Studies Certificate (Certificate of Participation)
   Issued upon completion of a non-formalized course, workshop, seminar or program, for which specific learning or performance is not measured or evaluated.

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

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

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

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

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

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

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

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

QUALIFICATIONS FOR A DIPLOMA, AN ADVANCED DIPLOMA, A POST DIPLOMA OR A CERTIFICATE
To qualify for a diploma, an advanced diploma, a post diploma or a certificate, learners must meet the following requirements:
1. Meet all the requirements as prescribed in the program of studies;
2. Obtain a mark of not less than 50% in every course in the program unless otherwise specified;
3. Achieve 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); and
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.
- 11 – 14 hours of lab/week/semester is equivalent to four credits

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

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

<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 Ultrasoundography, 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, learners to the end of the first two semesters 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
Health Sciences programs include mandatory clinical training rotations. Learners must successfully complete all previous courses and have a minimum G.P.A. of 2.00 to be promoted to the clinical training component of their program.

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. The work term report is validated by the employer and graded by faculty/coordinators.

Learners who receive a passing grade 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-117-PR.

Supplementary Exams

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

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

The following conditions must be met in order to qualify for a rewrite:

1. A score of 60% on the original exam
2. Attendance of 90%

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

Deferred Exams

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

Incomplete

The Incomplete regulation does not apply to Industrial Trades.

TRANSFER OF CREDIT STATUS

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

EXEMPTION STATUS

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

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

REGISTRATION

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

Date of Registration

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

Late Registration

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

ADMISSION TO CLASSES

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

COURSE LOAD

The number of courses constituting a normal semester workload for a learner is specified in the outline for each program as published in the College Calendar.

Extended Course Loads

Learners who wish to register for extra courses must make application to the program administrator or designate.

REPEATING COURSES

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

INDEPENDENT STUDIES

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

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

CHANGE OF REGISTRATION

Adding Courses

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

Withdrawing

Courses may be dropped without academic prejudice up to the end of the eighth week from the scheduled date of registration for a semester (or the end of the second week in the intersession/summer session). 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 campus Learner Services 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 campus Learner Services Office by February 15.
2. Transfers are granted based on (a) space availability and (b) the learner's weighted average at the end of semester one. In cases where the learner has been exempted from courses in the first semester, the mark(s) obtained by the learner at another post-secondary institution or high school will be used in calculating the weighted average.
PROGRAM TRANSFER

Learners wishing to change their program of studies must apply for a Program Transfer. Program Transfer Request applications are available from the campus Learner Services Office. Transfers will be approved provided the following conditions are met:

a. The learner is enrolled at the time of the transfer request;

b. The learner meets the entrance requirements for the program requested;

c. Space (i.e. a seat) is available in the program requested;

d. The appropriate counselling process has been followed;

e. The learner has received the Counsellor’s written recommendation supporting the program transfer.

Learners must complete the following steps to apply for a program transfer:

1. Complete and sign the applicable section of the Program Transfer Request application.
2. Complete a counselling process with the campus Counsellor regarding the requested transfer.
3. Receive a written recommendation from the Counsellor supporting the transfer request.
4. Receive written approval from the Campus Administrator(s) or designate at the campus of origin for the recommended transfer.
5. Submit completed Program Transfer Request application with appropriate signatures to Learner Services for processing.

The Registrar’s designate at the sending campus will contact the Campus Administrator (or designate) at the receiving campus for appropriate approval and to determine appropriate transfer time frame and program start date.

Program transfers will be processed by date of receipt of the learner’s application to the program for which they are currently enrolled.

EXAMINATIONS AND TESTS

Dates of mid-terms, final, and supplementary examinations will be scheduled for a learner on any one day.

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

Instructors shall not be permitted to give quizzes worth more than 10% of the total final mark in the two week period prior to the start of semester examinations. As well no previously unassigned work may be assigned in the last two weeks of the semester.

This regulation does not apply to:

1. Courses with block teaching.
2. Laboratory examinations.
3. Self-directed and modular courses.
4. Courses with block teaching.
5. Assignments given prior to the 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 examinations 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 campus Learner Services Office must be contacted for permission and guidelines prior to the examination period. All costs associated with the administration of off campus supplementary examinations will be borne by the learner.
7. Academically dismissed learners are not eligible to write supplementary examinations.
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.
10. 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(s) must be signed/dated by the learner, the Counsellor of the course and the Campus Administrator. Copies should be kept by the instructor and Campus Administrator, and a copy must be placed in the learner’s file in Learner Services.

DEFERRED EXAMS

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

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

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

INCOMPLETE

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

REASSESSMENT OF GRADES

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

RE-READ OF FINAL EXAMINATIONS

Learners may apply to have a final examination paper re-read.

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

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

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

AEGROTAT STATUS

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

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

ACADEMIC DOCUMENTATION

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

Grade Reports

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

Transcripts/Records of Achievement

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

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

LEARNER APPEALS (ACADEMIC)

All registered learners of the college have the right to appeal decisions or rulings that affect them and which pertain to academic matters.

LEARNER APPEALS (NON-ACADEMIC)

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

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

DEFINITION OF AWARDS

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

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

Distinction Award
An award given in recognition of a variety of qualities. Some examples would be but are not limited to: passion for learning, demonstrated initiative, significant contribution to class, good work ethic, positive attitude, willingness to help others and/or a strong desire to succeed.

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

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

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

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

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

APPLICATION PROCESS

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

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 and College website but is generally mid-October. Please see application for exact date.

CRITERIA FOR AWARDS

Achievement Award

• No achievement award, 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.
• To be eligible for renewal of an achievement award, scholarship or bursary the learner must maintain full time status in their recognized college program and continue to meet eligibility requirements of the award.

The eligibility criteria for awarding an achievement award or a scholarship:

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

The eligibility criteria for awarding a bursary, distinction award or a prize:

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

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

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

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

DOCUMENTATION

Awards administered by the college shall be recorded on the recipient’s academic record.

Learners who have achieved honour society status will have their names posted at their campuses and on the college website at the end of the semester.

COLLEGE AWARDS PUBLICATIONS/ OPT OUT FORM

If you do not wish to have your personal information (name, photo, program of study and community) published by the college please complete an Awards Publications “opt out” form, available in the Student Awards Handbook or on the college website at www.can.nl.ca/awards, and submit it to the Learner Services Office at your campus.

OUTSTANDING FEES

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

PRIVACY DISCLAIMER

As part of the Scholarship/Awards process, your personal information (name, photo, program of study and community) may be shared with our donor to advise them of how their scholarship monies have been distributed. If you do not wish to have this information shared, please e-mail sonya.smith@cna.nl.ca.

Note: All learners who are selected for an award/scholarship/bursary will be required to provide their Social Insurance Number so that a T4A may be issued for income tax purposes. If you have not previously provided your Social Insurance Number to the college, we will contact you specifically for this purpose.

Note: College of the North Atlantic recommends that learners who are receiving funding and/or sponsorship contact their funding/sponsoring agency for clarification of whether receiving an award may affect their funding/sponsorship status.
## Fees and Charges

### 1.0 REGULATIONS GOVERNING PAYMENT OF FEES & CHARGES

- **a.** All learner fees must be paid by the date specified in each term. The dates are listed in the Calendar of Events. Learners receiving Student Aid must present their notification of Student Aid form at registration. These learners are permitted to have fees outstanding after registration. Upon receipt of the Student Aid, these learners must pay their accounts in full. Learners who have not paid all fees within the time limits given in these regulations may have their registration cancelled by the college.

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

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

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

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

- **f.** 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 DL. Learners enrolled in these programs are therefore required to do courses via DL. These learners will pay the regular program tuition fees. No additional DL tuition fee or DLS technology fee will be charged.

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### 2.0 FEES AND CHARGES

#### 2.1 FULL-TIME LEARNERS

Learners enrolled in four (4) or more courses:

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Fee Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application fee per program</td>
<td>$30.00</td>
</tr>
<tr>
<td>(Non-refundable)</td>
<td></td>
</tr>
<tr>
<td>Application fee for International learners</td>
<td>$100.00 (Non-refundable)</td>
</tr>
</tbody>
</table>

- **b.** Registration fee
  - **$95.00**
  - Learner must pay a non-refundable registration fee on confirmation of acceptance to each program at the college. The fee covers registration and student association fees and is paid annually for the duration of the program.

- **c.** Tuition
  - **i.** Term-based programs:
    - **Regular Term (15-weeks):** $726.00
    - **Intersession (up to 7-weeks in duration):** $343.00
  - **ii.** Continuous in-take programs:
    - **$49.00 per week**
  - **iii.** Trade programs
    - **$49.00 per week**

- **d.** Equipment/Materials fee per term (intended to help offset material costs of program; excluding DLS learners)
  - **i.** Term-based Programs:
    - **Regular Term (15-weeks):**
      - **Applied Arts:** $110.00
      - **Business:** $55.00
      - **College Transfer:** $110.00
      - **CAS Transition:** $110.00
      - **CAS Trades:** $110.00
      - **Aboriginal Bridging:** $110.00
      - **Engineering Technology:** $165.00
      - **English as a Second Language:** $55.00
      - **Health Sciences:** $165.00
      - **Information Technology:** $55.00
      - **Natural Resources:** $165.00
      - **Tourism Studies:** $110.00
  - **Intersession (up to 7-weeks in duration):**
    - **Applied Arts:** $35.00
    - **Business:** $27.50
    - **College Transfer:** $55.00
    - **CAS Transition:** $55.00
    - **CAS Trades:** $55.00
    - **Aboriginal Bridging:** $55.00
    - **Engineering Technology:** $82.50
    - **English as a Second Language:** $27.50
    - **Health Sciences:** $82.50
    - **Information Technology:** $27.50
    - **Natural Resources:** $82.50
    - **Tourism Studies:** $55.00
  - **ii.** Continuous in-take programs:
    - **Business Programs ($55.00 per 15-week term)**
      - **Fees are pro-rated on the number of weeks in attendance.**
  - **iii.** Trade Programs
      - **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.**

- **e.** DLS technology fee
  - **$50.00 per course**

- **f.** Work Term Fee (Co-op and Non Co-op)
  - **$363.00 per term**

- **g.** On the job (OJT) fees or Work terms
  - less than 7 weeks: **$49.00 per week**

- **h.** International Learners
  - Please refer to the International Learners section of the calendar for fees information pertaining to International learners.

#### 2.2 PART-TIME LEARNERS

Learners enrolled in three (3) or less courses.

- **a.** Tuition fee per course
  - **$230.00**

- **b.** Technology fee per course (DL courses)
  - **$50.00**

#### 2.3 GENERAL STUDIES LEARNERS

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

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

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

#### 2.4 COMMUNITY EDUCATION

Contact local campus for course fees.

#### 2.5 RESIDENCE FEES

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

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

- a. **Fees applicable to all campuses**
  - **Residence Application fee**
    - **$25.00**
    - (These are annual fees and are non-refundable)
  - **Residence Registration fee**
    - **$50.00**
    - (These are annual fees and are non-refundable)
  - b. **Daily Room Charges**
    - **Single** $15.00
    - **Double** $10.00
  - c. **Rooms and Meals**
    - **Bay St. George Campus**

Room and 10 meals weekly N/A $127.12
Room and 14 meals weekly N/A $142.85
Room and 19 meals weekly N/A $167.05

Burin Campus
Room and 5 meals weekly $107.19 $87.19
Room only weekly $60.00 $40.00

Happy Valley Campus
Room and 14 meals weekly $162.85 $142.85

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

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

3.0 REFUNDS
a. Application fees are only refundable if program does not go ahead and the applicant does not want to transfer the application to another program.
b. Registration fees will be refunded only to individuals who were conditionally accepted and upon receipt of High School marks did not meet the academic entrance requirement to the program.
c. Tuition and Equipment/Materials Fees
i. Term-based (15-weeks)
A learner who withdraws within the first four weeks of any term will receive a full refund. If the withdrawal takes place within the fifth or sixth week, the refund will be prorated and the learner will be liable for the number of weeks enrolled. No refund will be made after the sixth week of classes.
ii. Intersession (up to 7 weeks)
A learner who withdraws within the first two weeks of Intersession will receive a full refund. If the withdrawal takes place in the third week, the refund will be prorated and the learner will be liable for the number of weeks enrolled. No refund will be made after the third week of classes.
iii. Continuous in-take programs
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. Trade programs
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.
v. International learners
Please refer to the International learners section of the calendar for refund information pertaining to International learners.
d. Refunds for Contract Training/Continuing Education
i. Contracted programs of 15 or more weeks duration
A learner who withdraws within the first four weeks of any term will receive a full refund. If the withdrawal takes place within the fifth or sixth week, the refund will be prorated and the learner will be liable for the number of weeks enrolled. No refund will be made after the sixth week of class.
ii. Contracted programs of 6 to 14 weeks duration
A learner who withdraws/cancels within one week of a training program start date will receive a full refund upon written request. A learner who withdraws/cancels within two weeks of the start date of a training program will receive a 50% refund upon written request. No refund will be made after the second week of the program start date.
iii. Contracted programs of 2 to 5 weeks duration
A learner who withdraws/cancels after one day of a course program start date will receive a full refund upon written request. A learner who withdraws/cancels 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)
Learners must notify Continuing Education of their intent to withdraw or cancel at least 5 days prior to the start date of a course to be entitled to a full refund. If the learner notifies the office with the intent to withdraw or cancel less than 5 days prior to the course start date, the learner will receive a 50% refund. A learner who registers for a course, does not notify the college of their intent to withdraw, and does not attend any classes, will be deemed a “no show” and will forfeit their tuition fees. In the event the college cancels a course offering, learners will receive a full refund. Special circumstances may apply to any of the above conditions, in which case supporting documentation is required.
v. Client Contracts
The refund policy for client contracts is set out in the College’s standard Contract Training Agreements.
e. Textbooks
Refunds may be given for returned textbooks under the following conditions:
i. Books are unmarked and in saleable condition
ii. Books are returned within the first three weeks after the commencement of classes
iii. Original receipts are presented before a refund is issued.

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

4.0 FINANCIAL CREDIT
Deadline for payment of specified fees is 28 days from registration date. The College may grant credit to learners to cover tuition and/or materials fees only (credit is not available to cover books or residence fees). The College may, from time to time, institute equipment lease/purchase programs for which credit may be granted. Learners applying for financial credit must meet with a Learner Services Representative for assessment of their request. Credit will not be granted to learners with outstanding fees from prior semesters.

Financial Contract
If financial credit is recommended, the learner must complete a Financial Contract in consultation with a Learner Services Representative. The Financial Contract will specify what is covered and for what period of time. The completed Financial Contract must be reviewed and signed by a Campus Administrator or an approved designate. The learner is subject to collection action if the account is not paid.

Learners Receiving Student Loans
Learners with confirmed Student Loans are eligible for credit. When the student loan is issued, the amount owing will be deducted by the College as specified in the Financial Contract.

Learners Receiving External Funding
Learners with documentation confirming external funding will be granted credit and are expected to pay their fees once they are in possession of their funding as agreed to in the Financial Contract.

Learners Not Receiving Student Loans or External Funding
Learners seeking financial credit who do not meet the above criteria will only be granted financial credit in extenuating circumstances and upon written approval by the Campus Administrator.
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 establishing a college environment that fosters engagement, persistence, growth and development, and academic success.

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.

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

STUDENT DEVELOPMENT SERVICES
Student Development Officers (SDO) provide 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. SDOs may also be involved in coordinating peer tutoring, organizing social and recreation activities, awards programs, graduations, assisting learners with financial aid information and serving as a contact for employment-related issues. SDOs may also be involved in campus Career Employment Services including delivering job-search seminars, promoting graduates to potential employers, and gathering information related to learner and graduate employment opportunities. The SDO is also responsible for organizing and conducting recruitment liaison initiatives including participation in career fairs, school visits and trade shows.

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

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

STUDENT GOVERNMENT
College of the North Atlantic supports the activities of the student body through campus Student Representatives Councils (SRC) and provincially through the College of the North Atlantic Student Union (CNASU). 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 (SRC) aim to address the issues of the learners locally, provincially, and nationally. In September of each year, elections are held at each campus to elect members of the 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

College of the North Atlantic Student Union (CNASU) provides a provincial forum for representatives from the various campuses Student Representatives Councils to work cooperatively in advancing the interests of the learners they represent. The CNASU 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.

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.

For more information please contact 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 important information and useful tips for learners 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, fellow learners, 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. Contact the campus Student Development Officer or Counsellor.

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

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

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

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

Learner 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 and should apply directly to the Residence Office of the appropriate campus.

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

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

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

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

CUSTOMIZED TRAINING – ON-SITE, ONLINE, ANYTIME
College of the North Atlantic can develop customized training options for small businesses, corporations, governments, individuals and communities from an 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 each with a Business Development Officer and six learning centres. In fact, Contract Training and Continuing Education served over 15,000 learners last year alone.

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

Inquire about our Advanced Certifications and Post Diploma, Post-Journey training.

Call 1.888.982.2268 or visit www.cna.nl.ca/corporate to reach a Business Development Officer near you.

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

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

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

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

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

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

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

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

Safety Training
Businesses are required by law to meet the Occupational Health and Safety standards of the workplace. Safety training and certification is essential to ensure a healthy and productive workplace. In order to remain competitive, employers and employees need access to quality training. CNA is committed to providing comprehensive support to all of the province’s sectors with quality safety training. CNA is an approved WHSCC provider of Fall Protection, Traffic Control Person, Powerline Hazards and Confined Space Entry training.

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

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

Agrifood/agriculture training and activity:
• Food Processing
• Food Sanitation
• HACCP Training
• Kitchen Helper
• Meat Cutting
• National Food Safety Training (NFSTP)
• Nutritional Analysis and Labeling
• Test Market Analysis

Business and Information Technology sector training:
• ArcGIS
• AutoCAD
• Business Wings for Small Business
• Customer Service Excellence
• Fibre Optics
• Front Line Supervisory Skills
• HR for Small Business
• Microsoft Office Suite Retail Skills
• Computerized Accounting
• Start Up for Small Business Owners
• Supply Management Training
• Business Writing

Construction Sector training:
• Air Brake Endorsement
• Specialized Welding
• Blueprint Reading
• GIS/Map and Compass
• Boom Truck Evaluation
• Canadian Electrical Code
• Excavator Training
• Grader Training
• Heavy Equipment Operator
• Mobile Crane
• NDT (Non destructive testing)

Energy Sector training:
• Alberta B Welding Supervisory Skills Development for Production Supervisors
• Cultural Diversity
• Drill Rig Safety Inspection
• H2S Alive (ENFORM Certified)
• Hazardous “EX” (CAPP Standard)
• Hoisting, Rigging and Slinging
• Hydraulic Safety and Testing Procedures
• Well Control (ENFORM Certified)
• Power Engineering (3rd and 4th Class)
• Pre-employment Floorhand (Roughneck)
• Primavera (Project Management Software)
• Project Management
• Tractor Trailer Endorsement (Class 3)

Recent Health Sector training:
• Changing Minds (Mental Health Awareness)
• Emergency Medical Responder (EMR) via Distance
• Home Support Worker/Personal Care Attendant
• Intravenous Therapy (IV) and Symptom Relief
• Introduction to Home Care
• Medical Device ReprocessingTechnician
• Medical Laboratory Assistant Bridging
• Medical Terminology
• Paramedics

Recent Mining Sector training:
• Leadership Development
• Computer Skills Training
• Customized Mill Operator
• Heavy Equipment Operator
• Industrial Mechanic
• Machinist
• Mining Technician
• Prospectors Training
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

Business Development Offices:

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

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

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

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

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

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

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

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

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

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

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

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

Port aux Basques Campus
P: 709/695-3582
F: 709/695-2963

Prince Philip Drive Campus
P: 709/758-7259
F: 709/758-7297

Ridge Road Campus
P: 709/758-7554
F: 709/758-7059

Seal Cove Campus
P: 709/744-6846
F: 709/744-3929

St. Anthony Campus
P: 709/457-2719
F: 709/457-2163

Natural Resources Sector:
• Conservation and Law Enforcement Training Program (CLET)
• Quality Compliance Enforcement Program (QCEP)
• Law Enforcement - Level 1
• Security Services
• Environmental Monitor

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

Training for Professional Designations:
• Certified Sales Professional
• Maintenance Management Professional (MMP)
• Payroll Practitioner
• Supply Chain Management Professional
Continuing Education

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

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

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

* Print-based distance education refers to correspondence courses.

Post-Diploma Program (Post-Graduate)
Ask about our post-diploma diploma programs for those who have graduated from a 3-year diploma program or a university degree. These programs include:
- Diagnostic Ultrasoundography
- 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 retire, the nation faces major labour shortages, including administration and management positions. We must plan for that shortage now by training our existing workforce in leadership, management and supervisory skills. College of the North Atlantic offers management and supervisory courses scheduled every semester. Choose timeslots during evenings or business hours.

Personal Interest Courses
Whether you want to learn a foreign language or you want to make a gourmet dish, Continuing Education offers many personal interest courses to suit your needs:
- Arts and Crafts
- Belly Dancing
- B.O.A.T.
- Cooking / Baking
- Firearms Safety Courses
- Language Training
- Matting and Framing
- Photography
- Welder Testing (CWB)
- Welding Courses
- Yoga

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

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

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

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

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

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

This flexible approach allows learners to balance the demands of work, family and learning. 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, video and web conferencing tools are also used in some courses.

Distributed Learning is technology-mediated and learners must become familiar with using computers that are Internet ready. Before registering for a course, potential learners should take responsibility for learning about the technology, and ensuring 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.

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

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

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

Note: The following list of courses is subject to change.

DISTRIBUTED LEARNING COURSES

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International Learners

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

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

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: 709 758-7304
E-mail: internationalweb@cna.nl.ca
Web: www.cna.nl.ca

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

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

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

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

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

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

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

ACADEMIC PREREQUISITES
Entrance requirements for each program are set out in the program description. For most programs the entrance requirement is graduation from secondary school with marks equivalent to 60% or better in the Canadian system. Certain programs require achievement in specific subject areas, such as Mathematics, English Language, Physics, Chemistry or Biology. Applicants from British-oriented educational systems should present the General Certificate in Secondary Education. All applicants should submit the latest transcript of marks which will be assessed on an individual basis.
AGE OF LEARNERS
The minimum age accepted by College of the North Atlantic is 17 years.

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

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

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

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

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

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

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

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

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

Hospital Insurance Plan Regulations will be accessible for international learners.

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

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

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

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

Tuition Fees:
- Regular-Full-time programs CAD $3300 per semester (15 weeks - Fall or Winter Semester)
- Intersession CAD $1650 per semester (7 weeks - Intersession)
- In-class course - Part-time learners CAD $825 per course
- DL courses CAD $660 per course + $50 Tech Fee
- Co-op work term CAD $1650 per semester (12-16 weeks)
- On the Job Training CAD $220 per week
- Equipment/Materials CAD $55-$165 (varies from program to program and some exceptions may apply)

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

Registration Fee:
- All programs CAD $95 per academic year (September to August)
- Other Costs (Note: these are estimations of expenses, not exact figures)
  - Textbooks CAD $500-1000 per semester
  - Health Insurance CAD $500-550 per year

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

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

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

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

LIVING EXPENSES
An average monthly estimate of living expenses (not exact figure):
- Housing: $400.00-500.00
- Meals: $200.00-300.00
- Transportation: $70.00-100.00
- Total Average $900.00

RESIDENCE
The College maintains residence facilities at the Bay St. George, Burin and Happy Valley-Goose Bay campuses. Fees for room and board at the residences range between $350 and $650 per month with optional meal plans. Learners wishing to apply for residence should apply directly to the Residence Office of the appropriate campus.

OFF-CAMPUS HOUSING
Newfoundland and Labrador also has many off-campus housing options including renting a single room in an apartment or house, rental apartments, rental houses, and boarding houses (which often include meals). 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 information and advice regarding off-campus housing options. Depending on the type of accommodation and location, the cost of off-campus housing can range from $400-$800 and up.
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 has the expertise to ensure quality programmes and services. Training expertise at College of the North Atlantic exists in a wide range of sectors:
- Petroleum/Oil & Gas
- Safety & Construction
- Tourism & Hospitality
- Health Sciences
- Engineering Technology
- Industrial Trades
- Business
- Information Technology
- Management & Leadership
- English as a Second Language
- Distance Learning Systems
- Natural Resources

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

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

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

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

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

Elizabeth Vincent
Business Development Manager
International Services
College of the North Atlantic
1 Prince Philip Drive
P. O. Box 1693
St. John’s, NL
Canada A1C 5P7
tel: +1 709 758-7261
fax: +1 709 758-7222
e-mail: international@cna.nl.ca
web: www.cna.nl.ca

International Contracts
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:

**Manager, Alumni and Advancement**
College of the North Atlantic
1 Prince Philip Drive, Room # L202
P. O. Box 1693
St. John’s NL A1C 5P7
tel: 709 758-7515
fax: 709 758-7222

Reconnect to the college
Visit: www.cna.nl.ca/alumni
Applied Research and Innovation

OFFICE OF APPLIED RESEARCH

Applied research and innovation is an important part of the College’s mission and mandate. 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. With a demonstrated capability in several areas of technology, trades, natural and social sciences, the college furnishes the necessary building blocks for an applied research and innovation structure. This includes a modern infrastructure, state-of-the-art equipment and a cadre of individuals committed to innovation and research. The college has a strong association with the community and good working relationships with industry.

The college’s Office of Applied Research (OAR) works toward fostering a spirit of research creativity among its faculty, staff and students. An important area of our responsibility is to support researchers in the creation of new knowledge as well as in the development of innovative products and services. We are connected with local business and industry and respond to their needs in problem solving, product development, patents and licenses. Our current 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

Our researchers in engineering and manufacturing sciences utilize the latest technologies in design software, 3-D printing, laser scanning, vacuum forming, injection molding, etc. Researchers are provided with 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. Information on current and past projects can be found on our website. http://www.cna.nl.ca/office-applied-research/default.asp

In addition to its regular staff, the office oversees several campus based positions such as post-doctoral fellows, research technologists, and work term students across the province. The timing and role of these positions vary according to the research needs and the availability of funding.

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, N.L., CA
A1C 5P7
Tel: 709 758-7474
fax: 709 758-7327
e-mail: oar@cna.nl.ca
SCHOOL OF

ACADEMICS,

APPLIED ARTS AND

TOURISM
Aboriginal Bridging Program

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
High School - Provincial High School Graduation Certificate, or equivalent,
Adult Basic Education (ABE) - Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile).
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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CERTIFICATE

- One Year
- September
- Burin, Carbonear, Grand Falls-Windsor, Happy Valley-Goose Bay, and Labrador West Campuses

ACADEMICS

Comprehensive Arts & Science Transfer: College-University

**COURSES**

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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**

To enhance student access to courses that earn both University and college credits.

To provide an opportunity for students to gain University course credit at locations close to their home communities.

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
   **Note:** Commencing Academic Year 2014-2015:
   Advanced: 2200, 3200
   Academic: 2201,3201
   iii. Science (4 credits) two of which must be selected from the following:
      Biology 3201
      Chemistry 3202
      Physics 3204
   iv. Earth Systems 3209
   The remaining two credits may be selected from
   2000 level courses in the above noted subject areas or from Science 1206.
   v. Two credits at the 3000 level in a Social Science or a Modern/Classical language. This category includes the following subject areas: History, Geography, Religious Studies, French, Spanish, other Modern/Classical Languages.
   vi. 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) Transfer

   **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 has been completed.

4. Mature Student Status

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

**REQUIREMENTS FOR COMPLETION**

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

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

**Maximum number of CAS Transfer: College-University courses per semester (i.e. Fall; Winter) is five.**
ACADEMICS

Comprehensive Arts & Science Transition

ENTRY 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 prerequi-
   site(s) 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 immedi-
ate 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 post-
pone 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 1 and II,
a minimum of 20 credits from Core Program courses,
and a minimum of 6 credits from Electives. Students
must also meet all qualification requirements for the
awarding of a Certificate from the college. (Note:
Students may qualify for exemption and attain credit
for graduation for Essential English I or II and/or
Math Fundamentals I or II provided the necessary
requirements are met. Only Essential English and
Math Fundamentals can be considered for exemption
within the CAS Transition program using the program
specific exemption form. Factors affecting the
decision for Exemption include: previous high school
course(s) completed and grade attained, assessment
scores, subsequent program choice and advisor
recommendation.)

OBJECTIVES

1. To provide the opportunity for secondary level
   graduates to meet entrance requirements for other
   college programs.
2. To provide secondary level graduates and mature
   students with the opportunity to strengthen aca-
   demic 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.
CERTIFICATE
• This program will operate with continuous intake / exit from September to June.
• Varies
• Prince Phillip Drive Campus

COURSES

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| EO1001 Beginner Listening  | 150    |
| EO1002 Beginner Speaking   | 90     |
| EO1003 Beginner Reading    | 75     |
| EO1004 Beginner Writing    | 60     |
| Level II
| EO2001 Intermediate Listening I | 120 |
| EO2002 Intermediate Speaking I | 120 |
| EO2003 Intermediate Reading I | 75  |
| EO2004 Intermediate Writing I | 60  |
| Level III
| EO3001 Intermediate Listening II | 90  |
| EO3002 Intermediate Speaking II | 90  |
| EO3003 Intermediate Reading II | 120 |
| EO3004 Intermediate Writing II | 75  |
| Level IV
| EO4001 Advanced Listening I | 75   |
| EO4002 Advanced Speaking I  | 30   |
| EO4003 Advanced Reading I   | 120  |
| EO4004 Advanced Writing I   | 105  |
| Elective #1                 | 45   |
| Level V
| EO5001 Advanced Listening II | 75 |
| EO5002 Advanced Speaking II | 30 |
| EO5003 Advanced Reading II  | 90 |
| EO5004 Advanced Writing II  | 90 |
| Elective #2                 | 45 |
| Elective #3                 | 45 |

All courses in each Level are required for successful completion of that Level. Levels IV and V have electives.

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

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

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

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.
APPLIED ARTS
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:
   - exercise initiative in the development of leisure time activities.
   - recognize and help strengthen established community activities.
   - organize and stimulate growth at the community level.

CURRICULUM

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

EMPLOYMENT OPPORTUNITIES

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

Note: Graduates of the Community Recreation Leadership program wishing to pursue further studies in recreation may receive course credits or exemptions from universities such as:

- Acadia University
- Dalhousie University
- Memorial University
- Concordia University
- University of New Brunswick
- Lakehead University
- University of Ottawa

ENTRANCE REQUIREMENTS

1. High School

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

2. Comprehensive Arts and Science (CAS) Transition

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 Police (RCMP) and must be valid up until the last day of classes for each semester. As well, students must present a copy of a Vulnerable Sector Check along with the Certificate of Conduct.

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

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

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

- The first year of this program is offered every alternate year at the Carbonear and Grand Falls-Windsor-Windsor Campuses. The Bay St. George Campus has an annual September intake. Program is also offered in Happy Valley-Goose Bay on a need-determined basis.
- Two Years
- September
- Bay St. George, Carbonear, Grand Falls-Windsor, and Happy Valley-Goose Bay Campuses

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Semester 3

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<td>CS2240</td>
<td>Introduction to Social Research</td>
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<td>Media and Public Relations</td>
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Semester 4

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Semester 5

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Community Studies Courses

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<td>CD2400</td>
<td>Managing in the NFP Sector</td>
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<tr>
<td>CJ1100</td>
<td>Canada's Justice System</td>
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<td>CJ1200</td>
<td>Canadian Criminology</td>
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<td>Youth Justice in Canada</td>
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<td>Family Services I</td>
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<td>Family Services II</td>
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<td>Family Services III</td>
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<tr>
<td>PS1200</td>
<td>Drugs and Behaviour</td>
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<td>PS1240</td>
<td>Understanding Addictions</td>
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<td>PS1260</td>
<td>Behaviour Management</td>
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<td>SC1300</td>
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<tr>
<td>SC1350</td>
<td>Contemporary Issues for Women</td>
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Students should note that not all electives are available each semester. Offerings vary according to campus location.

APPLIED ARTS

Community Studies

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

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

FUTURE OPPORTUNITIES

Examples of types of organizations, agencies, and departments where Community Studies graduates have been hired include the following:
- Aboriginal Communities, e.g. health and social programs
- College of the North Atlantic, e.g. resource facilitators
- Community-based 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

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.
### Digital Animation

Digital Animation is a two-year diploma program that combines comprehensive instruction in design fundamentals, industry standard animation software tools and collaborative production techniques, with creative problem solving and visual storytelling methods. From the practice of sequentially drawn images to the creation of fully realized 3D characters and environments, this approach allows the student to study the subject of Digital Animation with the broadest creative scope and range of technical application.

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

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

**Objectives**
1. Upon successful completion of the program, graduates will be able to:
   1. Apply the concept of “Design” as a professional discipline and historical practice.
   2. Use technical skills in areas such as narrative, design, storyboarding, modeling and animation to create digital animation.
   3. Demonstrate appropriate work habits, attitudes and behaviors required for employment.
   4. Develop entrepreneurial skills to budget, resource, schedule and market animated projects.
   5. Create a final portfolio demonstrating industry applicable skills.

### 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

**Note:** Basic computer skills along with an ability to draw are important and considered definite assets for success in this program.

### Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hrs/wk</th>
<th>Cr</th>
<th>Le</th>
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<td>Semester 1</td>
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<td>CM2200</td>
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<td>Drawing Fundamentals</td>
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<td>2D Digital Graphics</td>
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<td>Animation Drawing I</td>
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<td>MM1500</td>
<td>Introduction to 3D Animation</td>
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<td>MM1600</td>
<td>Narrative &amp; Production Design</td>
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<td>MM2670</td>
<td>3D Character Modelling</td>
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<td>MM2560</td>
<td>3D Texture and Digital Paint</td>
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<td>Digital Audio Techniques</td>
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<td>Animation Design Project</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.
### Early Childhood Education (ECE)

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

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

### ENTRANCE REQUIREMENTS

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

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

3. **Adult Basic Education (ABE)**
   - Adult Basic Education (ABE)
   - Transition
   - Adult Basic Education (ABE) Graduation Certificate

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

### AND

**Early Childhood Education (ECE)**

**Documentation Required:**

1. Current record of immunizations
2. Clear Certificate of Conduct, including the "vulnerable sector" category, from the RNC or RCM, to include all jurisdictions in which the applicant has lived in the past 10 years,
3. Satisfactory Child Protection Records Check

**The Certificate of Conduct and the Child Protection Records Check:**

- Must be dated no more than three months prior to the first scheduled day of classes for the program;
- Is valid for a period of three years, unless the student is absent from the program for six months or more.

### EMPLOYMENT OPPORTUNITIES

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

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

OBJECTIVES

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

FIELD PLACEMENT

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

CERTIFICATION

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

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

EMPLOYMENT OPPORTUNITIES

Graduates of the Certificate program will be prepared for employment with organizations caring for children, or self-employment, providing child care in communities throughout the province.
DIPLOMA
• Varies
• Fall, Winter and Intersession
• Offered through Distributed Learning

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.

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

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

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

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

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

NOTE regarding 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.cna.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.

FIELD PLACEMENT
Students in the Diploma program will be required to complete four Field Placements. A minimum of 4 weeks must be completed at a CNA demonstration child care centre, over a maximum of two

APPLIED ARTS
Early Childhood Education By Distance Education

Field Placement courses. Field Placement courses are planned in conjunction with the ECE Distance Coordinator.

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

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

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

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

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

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

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

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

EE1180  Curriculum I
EE1290  Positive Behaviour Guidance
EE1420  Creative Experiences I
EH1340  Health & Safety
EE1181  Curriculum II
EE1341  Child Development II
EE1350  Observation
EE1421  Creative Experiences II
EE2300  School-Age Development & Care
EE1440 Family Studies I
EE2180  Curriculum III
EE2240  Child Development III
EE2255  Advanced Behaviour Guidance
EE2260 Introduction to Child Care Administration
EE2470 Child Development & Care
EE1481 Inclusion II

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

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<td>Oral Communications</td>
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<td>MC1150</td>
<td>Productivity Tools</td>
<td>4</td>
<td>3</td>
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<td>FY1100</td>
<td>Introduction to Photography I</td>
<td>3</td>
<td>3</td>
<td>0</td>
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<tr>
<td>AM2310</td>
<td>Digital Video Techniques</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<tr>
<td>OR1111</td>
<td>Basic Drawing &amp; Sketching</td>
<td>3</td>
<td>3</td>
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<tr>
<td>FY1100</td>
<td>History of Cinema</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>FY1200</td>
<td>Film Production Basics</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>AM1600</td>
<td>Narrative &amp; Production Design</td>
<td>3</td>
<td>2</td>
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<td>Digital Audio Techniques</td>
<td>3</td>
<td>2</td>
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<tr>
<td>CM1550</td>
<td>Creative Writing</td>
<td>3</td>
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<tr>
<td>FY2240</td>
<td>Rigging &amp; Grip</td>
<td>3</td>
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<td>FY2250</td>
<td>Lighting &amp; Electrics</td>
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<td>FY1220</td>
<td>Advanced Digital Video</td>
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### Semester 3 (Intersession)

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

### Semester 4

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### Semester 5

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

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

### Objectives

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

### Entrance Requirements

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

## Applied Arts

### Film And Video Production

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.
Diploma
• The first year of this program is offered every alternate year.
• Two Years
• September
• Prince Phillip Drive Campus

COURSES

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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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Semester 5

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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.

Digital Communications Electives

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The first year of this program is offered every alternate year. A comprehensive hands-on approach ensures that students receive a marketable set of skills within a positive learning environment.

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

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

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

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

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

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

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

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

ENTRANCE REQUIREMENTS

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

2. Comprehensive Arts and Science (CAS) Transition
Comprehensive Arts and Sciences 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: Basic computer literacy skills as well as strong core skills in English and Mathematics are definite assets for this program. Theses skills are important for success in the program.
Graphic Design

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

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

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

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

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

ENTRANCE REQUIREMENTS
1. High School
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
2. Comprehensive Arts and Science (CAS) Transition
   Comprehensive Arts and Science Transition Certificate
3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile) with an average pass mark of 60%
4. Mature Student Status
   Applicants who do not meet the educational 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:
Basic computer skills as well as strong core skills in

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

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

Other Requirements
Applicants should submit only copies of their work. No originals should be submitted.

a. Do not submit any framed, fragile or 3-dimensional work.

b. If applicants submit digital files, please burn them onto a CD or DVD, and ensure they are readable by a computer other than the one used to burn it. Digital submissions that cannot be opened will not be considered.

c. The applicant’s work should be submitted in a case, binder or folio, with measurements not exceeding 61 cm x 92 cm (24 x 36 inches).

d. Work included in the portfolio should be identified on a separate sheet with the title (if any), the completion date and the materials used. A brief explanation of each piece would be welcome.

Please note: For further information on the portfolio process, please refer to the Graphic Design program page on the College’s website (www.cna.nl.ca).
This program prepares students to work as professional journalists. The curriculum provides a strong foundation in the fundamentals of reporting and news writing as well as in media technical skills. The program gives students hands-on training in print, radio, television and online journalism. Students hone their skills through the production of an online newspaper, a provincial youth newspaper, a weekly radio show, and various video projects. A special projects course in the fourth semester will allow students to focus on print, broadcast or online media. Students complete courses in academic and general interest fields, thereby broadening their educational backgrounds and assisting them to understand today’s society.

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

**OBJECTIVES**

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

**ENTRANCE REQUIREMENTS**

1. **High School**
   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent and a minimum of 60% in level 3000 English
2. **Comprehensive Arts and Science (CAS) Transition**
   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.
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.
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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).
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 whose talents rest in this area, and the college strongly recommends these programs.

### 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.

### 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.

### PORTFOLIO

All applicants must submit a demo recording in ONE of the following formats:
- A standard audio cassette;
- A compact disk;
- A video cassette;
- DVD;
- Website link;
- Flash drive.

The demo recording must be clearly labelled, include a list of the material contained on the demo, and specify the role of the applicant on each track.

The demo should contain three contrasting pieces, clearly demonstrating the applicant’s level of performance ability and experience.

The demo will be evaluated with the following criteria in mind:
1. Quality of performance;
2. Quality of presentation;
3. Demonstration of a reasonable chance of success in the MIP program;
4. The recording should be accompanied by a resume outlining any music-related experiences, live performances, and previous training.

### ENTRANCE REQUIREMENTS

1. **High School**

   Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent
The Recording Arts program is a two-year diploma program which provides training in the skill areas of sound recording and editing, sound reinforcement and digital processing of audio signals.

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

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

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

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

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

OBJECTIVES
1. To provide students with training in the aural and technical aspects of recording, mixing and editing music in analog and digital media.
2. To assist students in developing skills in the recording and editing of music and sound effects for animation, film and video as well as operating same for live theatre productions. A lighting component will allow the graduate to fill theatre positions that often require a knowledge of lighting as well as sound.
3. To provide students with knowledge of basic business practices with particular emphasis placed on the complexities of the music business.
4. To assist students with the development of appropriate attitudes, behaviours, and work habits in preparation for employment as a sound recordist/operator.

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

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

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

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

Different skills, media and techniques are introduced in the first year of the program. Innovation and creativity are encouraged through contemporary applications of traditional skills and the incorporation of non-traditional materials into project ideas. The second year is an opportunity to focus on two studio areas. Students may choose to concentrate their studies in the areas of knitting, print and dye, embroidery and 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 encourage a spirit of entrepreneurship.

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 and Transition Certificate
3. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation 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 colour blindness.
DIPLOMA
• 2 Years
• September
• Bay St. George Campus

COURSES
CODE  TITLE                            Hrs/Wk
Semester 1

MM1500  Introduction to 3D Animation    3  2  2
GD1300  Game Design I                  4  3  2
GD1200  Digital Visual Design          3  2  2
GD1250  Interactive Narrative          3  3  0
HR1120  Human Relations                4  4  0
VA1130  Drawing Fundamentals           3  3  0

Semester 2

CM1520  Writing for the Arts          3  3  0
GD1301  Game Design II                 4  3  2
MM2670  3D Character Modeling         3  2  2
GD1110  Level Design I                 4  3  2
MM1600  Narrative & Production Design  3  2  2
MM2330  Digital Audio Sound Track Design 3  3  0

Semester 3 (Interession)

GD1111  Level Design II               4  3  2
GD1520  Game Design Project I         4  2  7

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

Semester 4

CM2200  Oral Communications           2  2  0
CJ2500  Project Management             3  3  1
GD2100  Level Design III               4  3  2
GD2300  Game Design III                4  3  2
GD1510  Cinematography for Games      3  3  0
GD1600  Business for Game Development  3  3  0
Elective                              3  3  0

Semester 5

GD1430  Introduction to Flash         4  3  2
GD1201  Level Design IV                4  3  2
GD2201  Game Design IV                 4  3  2
GD1501  Game Design Project II         4  3  2
GD1400  Game Interface Design          3  3  0
MM2900  Portfolio Development          3  2  3

The Video Game Design program provides students a marketable set of skills by studying game theory, level design, cinematics, art, animation, and production methods. It emphasizes creative writing and non-linear storytelling skills. Students will study design principles and game documentation, the creative process and pre-production planning, the processes of game design, level design, audio, and visual-based principles such as game interface design, and 2D and 3D modeling.

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

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

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

- Two Years
- Alternate Year Intake
- Prince Phillip Drive Campus

**COURSES**

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<td>OJ1480</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.

**NOTE:** Students may qualify for a Certificate in Hospitality Services, if exiting at the end of Year 1.

**Semester 4**

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**Semester 5**

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**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 Transition Certificate

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

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

**CERTIFICATIONS**

In addition to the formal semester subjects listed in the program of studies, students in the Hospitality Tourism Management program are required to complete the following certifications for the Hospitality Services Certificate or the Hospitality Tourism Management Diploma:

- NFSTP (National Food Safety Training Program)
- CPI (Non-Violent Crisis Prevention Intervention Seminar)
- Weapons in the Workplace
- It’s Good Business (Responsible Alcohol Service)
- Mature Consumer
- ST. John Ambulance Standard First Aid
- SuperHost Atlantic
- WHMIS – Workplace Hazardous Materials Information System
- Back Injury Prevention

**Note:** Students should be aware that additional fees apply for the above certifications, field trips, tours and OJ1480. Additional expenses will also be incurred for the purchase of items of clothing which are required for the program.

**EMPLOYMENT OPPORTUNITIES**

The growth of the tourism sector globally offers employment opportunities throughout the world, and graduates will be well qualified to seek opportunities nationally and internationally. Graduates of this program should have medium-term career goals that include junior supervisory and supervisory positions, and long-term goals such as departmental or facility management. Employment opportunities exist in corporations, non-profit tourism organizations, tourism associations, hotels, resorts, attractions, and private businesses.

**PROGRAM TRANSFERABILITY**

Graduates of the Hospitality Tourism Management program wishing to pursue additional post-secondary studies can apply for entry with advanced stand-
COURSES

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Semester 2

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Semester 3 (Intersession)

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

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

### ACCREDITATION
Business Administration (Accounting) is accredited by the Accreditation Council for Business Schools and Programs (ACBP) 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
- 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
## Business Administration (General)

The successful business administrator must be an effective leader, communicator and problem solver; one who can integrate rapidly emerging technology with diverse business functions such as accounting, marketing, and human resource management.

Students in the Business Administration (General) program will develop interpersonal and organizational skills. They will use the latest computer technology in business decision making and learn practical skills which will help them to be productive members of the workforce. Graduates can expect to build on this solid base during their entire business career.

### Note:
Year 1 courses can be completed at campuses that offer the Business Administration certificate program.

### 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 (IPMA)-Canada
- Certified General Accounts of Canada (CGA)
- The Society of Management Accountants of Canada (CMAs)
- The Payroll Association of Canada

### CAREER OPPORTUNITIES
Graduates may find entry level job opportunities in a wide spectrum of organizations such as public institutions, small and/or large businesses, and financial institutions.

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

### PROGRAM 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.

### COURSES

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

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

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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.
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.

**COURSES**

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**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.

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.

**ACCREDITATION**

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

**PROGRAM TRANSFERABILITY**

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

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

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

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

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

- Memorial University of Newfoundland
- Cape Breton University, Sydney, Nova Scotia
- Athabasca University, Alberta
- Lakehead College, Alberta
- University of Lethbridge, Alberta
- Lakehead University, Ontario
- University of New Brunswick, Saint John campus
- Okanagan College, British Columbia
- Northwood University, Michigan, USA

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

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

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

**Objective**

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.

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

**Diploma**

- **Two Years**
- **Varies**
- Corner Brook, Clarenville, and Prince Philip Drive Campuses

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

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DIPLOMA
• Two Years
• Varies
• Offered through Distributed Learning

BUSINESS Administration-General (DLS)

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
Demonstrate the ability to effectively engage in research and information gathering processes. Integrate general knowledge of accounting, human resources, and marketing, for application in a business environment.
Apply entrepreneurship skills for use in small to medium sized business environment. Demonstrate application of the Conference Board of Canada employability skills.

CAREER OPPORTUNITIES
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Graduates of the Business Administration/Management programs may have the opportunity to transfer credits to institutions/associations such as:
• Memorial University of Newfoundland
• Cape Breton University, Sydney, Nova Scotia
• Athabasca University, Alberta
• Lakehead College, Alberta
• University of Lethbridge, Alberta
• Lakehead University, Ontario
• University of New Brunswick, Saint John campus
• Okanagan College, British Columbia
• Northwood University, Michigan, USA

Graduates may also wish to further their studies to achieve professional designations with:
• Canadian Institute of Financial Planning
• Canadian Professional Sales Association
• Canadian Public Relations Society
• International Personnel Management Association (IPMA)- Canada
• Certified General Accounts of Canada (CGA)
• The Society of Management Accountants of Canada (CMA)
• The Payroll Association of Canada

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
Demonstrate the ability to effectively engage in research and information gathering processes. Integrate general knowledge of accounting, human resources, and marketing, for application in a business environment.
Apply entrepreneurship skills for use in small to medium sized business environment. Demonstrate application of the Conference Board of Canada employability skills.

CAREER OPPORTUNITIES
Graduates may find entry level job opportunities in a wide spectrum of organizations such as public institutions, small and/or large businesses, and financial institutions.

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

PROGRAM 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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## BUSINESS

### Business Administration - Human Resource Management (DLS)

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.

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.

### ACCREDITATION

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

### PROGRAM TRANSFERABILITY

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

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

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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

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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
• Three Years
• September
• Grand Falls-Windsor, and Prince Phillip Drive Campuses

COURSES

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

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

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Option Course (minimum 3 credits, selected from list below)

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Option Course (minimum 3 credits, selected from list below)

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

Options will be selected from the following list by each campus after consultation with the students and/or local industry. Please note that all courses may not be available at each campus.

Option Courses

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The three-year program leading to a Diploma in Business Management (Accounting) has been developed to achieve competencies required in the field of general financial accounting. Management now requires personnel with skills to provide complex information and to produce comprehensive reports.

Upon completion of this program, students will be capable of performing many accounting functions in small and large businesses and at various levels of government.

OBJECTIVES

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

CAREER OPPORTUNITIES

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

ACCREDITATION

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

PROGRAM TRANSFERABILITY

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

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

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 (IPMA)-Canada
• Certified General Accountants of Canada (CGA)
• The Society of Management Accountants of Canada (CMA)
• The Payroll Association of Canada
**DIPLOMA**
- Three Years
- September
- Grand Falls-Windsor, and Prince Phillip Drive Campuses

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**COURSES**

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**Semester 2** (Cr | Le | La)

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

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

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**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.
5. Demonstrate application of the Conference Board of Canada employability skills.

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**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.

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**ACCREDITATION**

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

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**PROGRAM TRANSFERABILITY**

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

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

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

---

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

- Memorial University of Newfoundland
- Cape Breton University, Sydney, Nova Scotia
- Athabasca University, Alberta
- Lakehead College, Alberta
- University of Lethbridge, Alberta
- Lakehead University, Ontario
- University of New Brunswick, Saint John campus
- Okanagan College, British Columbia
- Northwood University, Michigan, USA

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

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

• Three Years  
• September  
• Prince Phillip Drive Campus

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### COURSES

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<td>SD1340</td>
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</table>

- Semester 1: Students select one area of specialization.

|      | **Semester 2**                                |        |
|      | **Cr** | **Le** | **La** |
| AC2260 | Financial Accounting II                       | 5      | 4     | 3     |
| CM1241 | Business Communications II                     | 4      | 4     | 0     |
| MA1240 | Human Resource Management II                   | 3      | 3     | 1     |
| LW1230 | Business Law                                  | 3      | 3     | 0     |
| MA2400 | Mathematics of Finance II                      | 3      | 3     | 1     |
| MR2100 | Marketing I                                   | 4      | 4     | 0     |
| SD1341 | Student, Career & Portfolio Development II     | 1      | 1     | 0     |

- Semester 2: Students select one area of specialization.

|      | **Semester 3 (Intersession)**                  |        |
|      | **Cr** | **Le** | **La** |
| AC2230 | Computerized Accounting I                      | 3      | 2     | 3     |
| CM2200 | Oral Communications                            | 2      | 2     | 0     |
| MC1241 | Computer Applications II                        | 3      | 2     | 3     |

- Semester 3: Students select one area of specialization.

|      | **Semester 4**                                |        |
|      | **Cr** | **Le** | **La** |
| CM2400 | Report Writing                                | 2      | 2     | 0     |
| EC1110 | Microeconomics                                | 4      | 4     | 0     |
| MA1670 | Statistics                                    | 4      | 4     | 1     |
| MR1500 | Consumer Behaviour                            | 3      | 3     | 0     |
| MR1600 | Professional Selling                           | 4      | 3     | 2     |
| MR2300 | Business Research                             | 4      | 3     | 2     |
| Elective | (minimum of 3 credits)                        | 3      | 3     | 0     |

- Semester 4: Students select one area of specialization.

|      | **Semester 5**                                |        |
|      | **Cr** | **Le** | **La** |
| EC1210 | Macroeconomics                                | 4      | 4     | 0     |
| EP2150 | Entrepreneurship                               | 3      | 3     | 1     |
| AR2200 | Retailing                                     | 3      | 3     | 2     |
| 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      | 2     | 0     |

- Semester 5: Students select one area of specialization.

|      | **Semester 6 (Intersession II)**               |        |
|      | **Cr** | **Le** | **La** |
| OJ1560 | Work Exposure (Marketing)                      | 6      | 6     | 0     |

- Semester 6: Students select one area of specialization.

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**BUSINESS**

**Business Management (Marketing)**

The three-year Business Management (Marketing) diploma program is designed to give students a background in business management with emphasis on the area of Marketing. Students acquire a solid understanding of the practices involved in marketing and promoting a product or service. This includes advertising, market research, professional selling, distribution, business planning, and customer relations.

**OBJECTIVES**

1. Analyze the marketing environment and develop, implement, and monitor a comprehensive marketing strategy.
2. Critically analyze and provide business solutions to marketing product, price, promotion, and distribution decisions.
3. Integrate ethical marketing strategies and tactics for application in both domestic and global marketing environments.
4. Create materials for use with a marketing strategy.
5. Integrate business concepts for effective business planning and strategic management.
6. Demonstrate application of the Conference Board of Canada employability skills.

**CAREER OPPORTUNITIES**

Graduates of the program may obtain employment in a variety of marketing areas such as distribution, media, advertising, retailing, and personal selling in a variety of industries and associations.

**ACCREDITATION**

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

**PROGRAM TRANSFERABILITY**

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

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

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

**Year 3:** The third-year options are Accounting, Human Resource Management, and Marketing. Students may graduate with a Business Administration 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
- University of New Brunswick, Saint John campus
- Okanagan College, British Columbia
- Lakehead University, Ontario
- Northwood University, Michigan, USA

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

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

- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada

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

- Certified General Accountants of Canada (CGA)
- The Society of Management Accountants of Canada (CMA)
- The Payroll Association of Canada
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
   High School Graduation
2. Comprehensive Arts and Science Certificate (College Transition Program)
3. Adult Basic Education
   Adult Basic Education (Level III) Graduation with General College Profile (or Business-Related College Profile or Degree and Technical Profile)
4. Mature Student Status
   Applicants who do not meet the educational prerequisites for this program, are 19 years of age or older, and have been out of school for at least one year may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY
The Office Administration Program offers exit points after Year 1 and Year 2.

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

Year 2: Students going on to complete the diploma program can select one area of specialization for the second year from the following options: Executive, Legal, Medical, Records and Information Management.
This two-year diploma program is designed to enable students to acquire the knowledge and skills needed to work as administrative assistants in today’s modern office.

The major components of the program include document production, transcription, and office management. Related courses include communications, computerized accounting, computer applications, and organizational behaviour.

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

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science Certificate (College Transition program)**
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.

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**Office Administration (Executive)**

This two-year diploma program is designed to enable students to acquire the knowledge and skills needed to work as administrative assistants in today’s modern office.

The major components of the program include document production, transcription, and office management. Related courses include communications, computerized accounting, computer applications, and organizational behaviour.

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

1. **High School**
   - High School Graduation
2. **Comprehensive Arts and Science Certificate (College Transition program)**
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.

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**Diploma**
- Two Years
- Varies
- Baie Verte, Bay St. George, Burin, Corner Brook, Clarenville, Grand Falls-Windsor, Labrador West, Port aux Basques, Prince Phillip Drive, St. Anthony, and Offered through Distributed Learning

**Courses**

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

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

| **Semester 4** |                           |          |        |         |     |
| AC2230  | Computerized Accounting I | 3        | 2      | 3       |     |
| CM2200  | Oral Communications       | 2        | 2      | 0       |     |
| DM3300  | Transcription II          | 3        | 2      | 2       |     |
| DM2200  | Document Production III   | 6        | 4      | 6       |     |
| OF2100  | Office Management III     | 3        | 3      | 1       |     |
| Elective (minimum 2-4 credits) | 2-4 | 2-4 | 0 |

| **Semester 5** |                           |          |        |         |     |
| CP2640  | Desktop Publishing       | 4        | 3      | 2       |     |
| DM2240  | Document Production IV    | 5        | 3      | 5       |     |
| KB1151  | Keyboarding II           | 1        | 1      | 1       |     |
| OF2101  | Office Management IV      | 3        | 3      | 1       |     |
| PS2340  | Organizational Behaviour  | 4        | 4      | 0       |     |
| OF2700  | Capstone Project         | 2        | 2      | 0       |     |
| Elective (minimum 2-4 credits) | 2-4 | 2-4 | 0 |

| **Semester 6 (Intersession II)** |                           |          |        |         |     |
| OF2100  | Work Exposure-Executive C/I | 6 wks |     |         |     |
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 (CollegeTransition program)

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

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

ACCREDITATION
Office Administration (Legal) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.
DIPLOMA
• Two Years
• September
• Prince Phillip Drive and
  Offered through Distributed Learning

COURSES
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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.

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

| Semester 4 |                                    |        |    |    |    |
| BR1330 | Anatomy                             | 4      | 4  | 0  |    |
| CM2200 | Oral Communications                 | 2      | 2  | 0  |    |
| DM1400 | Medical Transcription I            | 3      | 2  | 4  |    |
| DM2200 | Document Production III             | 6      | 4  | 6  |    |
| OF2400 | Medical Office Management I        | 3      | 3  | 0  |    |
| TM1100 | Medical Terminology I               | 2      | 2  | 0  |    |
| Semester 5 |                                    |        |    |    |    |
| DM1401 | Medical Transcription II           | 4      | 3  | 3  |    |
| DM2240 | Document Production IV             | 5      | 3  | 5  |    |
| KB1151 | Keyboarding II                      | 1      | 1  | 1  |    |
| OF2300 | MCP Billing                         | 2      | 2  | 1  |    |
| OF2401 | Medical Office Management II       | 4      | 4  | 1  |    |
| TM2100 | Medical Terminology II             | 2      | 2  | 0  |    |
| OF2700 | Capstone Project                    | 2      | 2  | 0  |    |
| Semester 6 (Intersession II) |                                      |        |    |    |    |
| OJ1920 | Work Experience-Medical            | C/I 6 wks |    |    |    |

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

This two-year diploma program is designed to enable students to develop the knowledge, skills and abilities needed to be a medical secretary or a medical office assistant.

The major areas of the program include document production, medical transcription, medical terminology and medical office management. Related areas include communications, medical billing, computer applications and biology.

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

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

ACCREDITATION
Office Administration (Medical) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and rewarding teaching excellence.
**DIPLOMA**
- Two Years
- September
- Bay St. George and Prince Phillip Drive Campuses

**COURSES**

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

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

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**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**
   - High School Graduation

2. **Comprehensive Arts and Science Certificate (College Transition program)**

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

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

**ACCREDITATION**

Office Administration (Records and Information Management) is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). ACBSP is the leading specialized accreditation association for business education supporting, celebrating, and advancing programs in higher education.

- **BUSINESS**
  - **Office Administration**
    - **Records And Information Management**
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/adjust 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 and maintain the 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
   4. the self-awareness and reflective skills required to create, evaluate and modify personal growth and career plans

5. The College of the North Atlantic is a Cisco Networking Academy. Students have the opportunity to complete courses in the Academy program which provide a strong foundation in computer networking knowledge and skills utilizing the equipment of the industry’s leading provider.

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
- LAN Team Member
- I.T. Support Technician
- Help Desk Technician
- Server Support Analyst/Technician
- Help Desk Analyst
- Technology Support Analyst

ENTRANCE REQUIREMENTS
Eligibility for admission to Computer Systems and Networking program requires the applicant to meet one of the following four academic criteria:

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

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.

INFORMATION TECHNOLOGY
Computer Systems and Networking

The Computer Systems and Networking two-year program focuses on the skills, competencies and attitudes required to research, design, install and maintain computer systems and network infrastructure in a highly available and secure computing environment. The program combines theoretical and practical learning experiences in a team-oriented setting encompassing front-line computer systems, 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/adjust 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 and maintain the 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
   4. the self-awareness and reflective skills required to create, evaluate and modify personal growth and career plans

5. The College of the North Atlantic is a Cisco Networking Academy. Students have the opportunity to complete courses in the Academy program which provide a strong foundation in computer networking knowledge and skills utilizing the equipment of the industry’s leading provider.

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
- LAN Team Member
- I.T. Support Technician
- Help Desk Technician
- Server Support Analyst/Technician
- Help Desk Analyst
- Technology Support Analyst

ENTRANCE REQUIREMENTS
Eligibility for admission to Computer Systems and Networking program requires the applicant to meet one of the following four academic criteria:

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

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.
### Information Management (Post Diploma)

The Information Management professional organizes and manages all activities involved in the information life cycle. This is an on-line program designed to provide the student 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. Effective communication and interpersonal skills are emphasized 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

### 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.

### COCURES

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### 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.

### ENTANCE 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.
INFORMATION TECHNOLOGY

Programmer Analyst (Business) Co-op

Programmer Analyst (Business) Co-op is a three-year program which trains the student to work effectively as a team member in a wide variety of business application development environments. This is a co-operative education program that offers the student work term placements in May of the first academic year, in January of the second academic year and in September of the third academic year. Each work term placement affords the student 12 to 16 weeks of workplace experience, for a total of 36 to 48 weeks during the three-year program.

The program's main emphasis is on the design and development of a variety of business-oriented applications using the most recent versions of widely used computer programming languages. Emphasis is on database design and programming, the traditional and object-oriented system development life cycles, and web-based programming. As well, ethics, best practices, team building, communications and interpersonal skills are developed throughout the program via coursework and participation on project teams.

The student is required to create a career plan and learning portfolio throughout the life of the program. The student will be given opportunities to assess skills, create/modify career plans and to reflect on her/his progress. The student must complete a comprehensive project in the final semester thereby consolidating all of the skills and knowledge acquired throughout the program.

The combination of coursework and work term experience provides the student with a skill set that will prepare her/him for an entry-level business programming position. With relevant work experience, the student should be able to follow the career progression to Programmer Analyst and eventually to Systems Analyst.

OBJECTIVES
The aim of the Programmers Analyst (Business) Co-op program is to graduate a student with:

1. the theoretical knowledge and practical programming skills enabling her/him to function as an entry-level programmer in an object-oriented, database-oriented business programming environment
2. the skills required to interpret and effectively apply industry procedures and policies in the workplace
3. the social, interpersonal and communication skills necessary to be a productive member of a team
4. the self-awareness and reflective skills to create, evaluate and modify personal growth, learning plans and career plans

ACCREDITATION
The Programmer Analyst (Business) Co-op program has been accredited by the Canadian Information Processing Society (CIPS) until 2013. The Co-op delivery method of the program has been accredited by the Canadian Association for Co-operative Education (CACE) until 2015.

EMPLOYMENT OPPORTUNITIES
Graduates of the Programmer Analyst (Business) Co-op program may find employment in computer-related industries, such as: provincial and federal government departments, as well as small, medium and large corporations. Typical activities may include computer programming, database design and development, and web page and web component implementation.

ENTRANCE REQUIREMENTS
Eligibility for admission to Programmer Analyst (Business) Co-op program requires the applicant to meet one of the following four academic criteria:

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

Note: Commencing Academic Year 2014-2015
   ii. Mathematics (4 credits) chosen from:
      Advanced: 2200, 3200 (50% minimum in each course)
   Academic: 2201 (50% minimum), 3201 (60% minimum)

2. Comprehensive Arts and Science (CAS) Transition
Comprehensive Arts and Science (Transition) Certificate with the following courses:
   - English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C

3. Adult Basic Education (ABE)
Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
   - English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C

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 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 and learning portfolio throughout the program.

The Software Development graduates may find employment in both the private and public sectors.

### 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

### 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):
     - English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
     - Mathematics 1104A, 1104B, 1104C, 2104A, 2104B, 2104C

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

### Note: Commencing Academic Year 2014-2015

- Mathematics (4 credits) chosen from:
  - Advanced: 2200, 3200 (50% minimum in each course)
- Academic: 2201 (50% minimum), 3201 (60% minimum)

### 3. Adult Basic Education (ABE)

Adult Basic Education (Level III) Graduation with Business-Related College Profile including the following courses (or equivalent):
- English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C

Applicants with Adult Basic Education (Level III) Graduation with a different profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

### 4. Mature Student Status

Applicants who do not meet the 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.
Web Development is a two-year program offered online through Distributed Learning. It provides the student with the skills needed to design, create and maintain database-driven web applications. Students will receive hands-on training in:

Computer programming and secure coding
Web site design and development for both large and small screens
- Multimedia development
- Database design and development
- Web server administration
- Web analytics
- Social media integration
- The latest trends in web development

Fundamental skills such as: technical communications, business solutions, and personal and career development round out the program. 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.

Two major web site 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 coding to support the design; implementing software to support the website; documenting the solution; and presenting the solution to team members and the client.

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. Students will graduate with a personal portfolio, including websites and multimedia they have designed.

OBJECTIVES
The aim of the Web Development program is to graduate a student with the ability to:

1. use the fundamental computing skills necessary to work effectively and efficiently in the Information Technology industry
2. demonstrate problem solving, design and programming skills to create interactive, secure, database-driven web sites based on user requirements
3. demonstrate effective communication skills, a capacity for leadership, teamwork, quality assurance and co-operation
4. design and create content-driven 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
SCHOOL OF
ENGINEERING
TECHNOLOGY &
NATURAL RESOURCES
### DIPLOMA
- Three Years
- September
- Ridge Road 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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Buildings are an exciting and vital part of our physical environment. Not only must they provide shelter, but they must do it in a way which provides safe, healthy, and comfortable environments which can be built and operated within given cost guidelines. To achieve these goals buildings have become complex structures requiring teams of specialists. An important member of the design and construction team is the Architectural Engineering Technologist.

The Architectural Engineering Technology Program has been developed in response to provincial needs with input from professionals associated with the design and construction of buildings. Projects and assignments are designed to be as close as possible to the type of work graduates will encounter when entering the workforce.

Every effort is made to expose the learner to the latest technology. Computers are used as a tool in problem solving in many technical courses. Microcomputers, computer aided drafting (CAD) equipment, and a variety of architectural and engineering software packages are made available to learners to carry out their projects and assignments.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (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.

The Architectural Technology Program has been accredited by the Canadian Technology Accreditation Board under the mandate of the Canadian Council of Technicians and Technologists.

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

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

### OBJECTIVES
As an architectural engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

- Prepare complete sets of architectural drawings and related documentation for residential and commercial construction/remodeling projects.
- Have a complete understanding of the basic architectural principles in building design and detailing.
- Apply the principles of building science and construction engineering to analyze and solve technical problems for construction projects.
- Understand the relationship between architectural, structural, mechanical, electrical, and environmental building systems.
- Apply the principles of project management to planning, scheduling, and monitoring of project development.
- Communicate effectively with clients, contractors, other building professionals and municipal authorities during the design and construction of the building project.
- Apply knowledge of applicable codes, zoning bylaws, and regulations to the building project.
### DIPLOMA
- Three Years
- September
- Ridge Road Campus

### COURSES
Refer to Engineering Technology (First Year) for courses for Semester 1 and 2

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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)
- CA2800: Oral/Written Communications Skills: 3 3 0
- FM2100: Fluid Mechanics: 3 3 1
- CL1100: Chemical Engineering Calculations: 5 5 1
- CL1500: Chemical Reactors and Mixing: 4 3 3
- MH2330: Power Plant Components: 5 4 2
- CJ2621: Process Control II (Level and Flow Measurement and Control): 4 3 2

#### Semester 5 (Winter)
- NA2100: Mathematics: 5 5 0
- TD3111: Thermodynamics: 3 3 1
- CJ2450: Industrial Chemistry I: 4 3 3
- PO2300: introduction to Separation Processes: 3 2 3
- MH2320: Power Plant Systems: 4 4 1
- CJ3811: Process Control III (Pressure and Temperature Control): 3 2 2

#### Semester 6 (Spring)
- SE2150: Safety Certifications: P/F 0 0
- S02220: introduction to the Workplace: 1 1 0
- SE2500: Occupational Health & Safety Program Elements: 2 2 0
- PR3150: Project Management and Financial Analysis: 4 4 0
- WC1830: Work Term I (Minimum 11 weeks): 5 0 0

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

### ACCREDITATION
College of the North Atlantic will seek accreditation for this program from the Canadian Technology Accreditation Board (CTAB) of the Canadian Council of Technicians and Technologists (CCTT).

### OBJECTIVES
As a chemical process engineering technologist, the graduate will have the knowledge and skills that will allow him/her to:

1. Assist in safe and efficient design, operation, troubleshooting, and maintenance of 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 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.

### 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).

### 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.
DIPLOMA
• Three Years
• September
• Corner Brook and Ridge Road Campuses

COURSES

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<td>SU1210</td>
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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 (Fall)  
BU1210 Building Codes & Services

Semester 5 (Winter)  
CA2500 Highway Technology

Semester 6 (Spring)  
FT1340 Civil Engineering Technology Camp

Semester 7 (Fall)  
CA2110 Structures I

Semester 8 (Winter)  
CA2111 Structures II

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).

ENGINEERING TECHNOLOGY
Civil Engineering Technology (Co-op)

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 field includes such areas as residential, commercial, and industrial buildings; harbours, airports, roads, and other transportation facilities; and municipal infrastructure.

Natural resource development projects (hydropower, oil and gas, mineral processing, etc.) will continue to create substantial employment opportunities for Civil Engineering Technology (Co-op) graduates.

The Civil Engineering Technology (Co-op) program will enable graduates to play an important role in the professional team which is responsible for the translation of ideas into the finished product. The program will ensure that the graduates understand the need for, and have the skills to contribute to, the cost effective and efficient planning of construction projects from concept to completion.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with the College of the North Atlantic.

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

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

OBJECTIVES
The main objective of the program is to produce graduates who can function in the Civil Engineering environment at the technologist level. Some of the tasks which a graduate will be able to perform are:
1. Analyze the structural reactions of engineering work.
2. Participate in the scheduling of civil engineering projects and monitor the work.
3. Assist in planning, designing, inspecting, supervising, and constructing civil engineering projects.
4. Plan and design municipal infrastructure projects.
5. Assist with designing, inspecting and troubleshooting of transportation infrastructure.
6. Design, calculate and test asphalt and concrete mixes to industry standards and specifications.
7. Carry out engineering survey and construction layouts using conventional survey instruments, GIS, and GPS systems.

CURRICULUM

General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrical and Magnetic Theory, Engineering Graphics, Engineering Technology Awareness.

Specific education in various aspects (theory and principles) of the civil discipline including strength of materials, structures, fluid mechanics, soils & foundations, building codes & services and planning & estimating.

Practical education in various aspects of the civil discipline including CADD drawings, material testing, highway technology, and construction surveying.

Work exposure consisting of field experience, gained from a compensated work term, in the field of civil engineering technology.

CAREER OPPORTUNITIES

The learner, upon graduation, may find employment with contractors, consultants, house builders, manufacturers, suppliers, municipalities, provincial and federal governments and their agencies, and many others involved in such projects as the design of 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 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 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 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.

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

<table>
<thead>
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<td>DC Machines</td>
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<td>Introduction to Programmable Logic Controllers</td>
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<td>Power Systems: Analysis</td>
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<td>Motor Control Systems</td>
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<td>Instrumentation Controls &amp; Automation</td>
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<td>Electrical Practices (Facility Design)</td>
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<td>Power Systems: Analysis &amp; Operation</td>
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<td>PE4110</td>
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The academic credentials of graduates of accredited technology programs are recognized internationally by the signatories of the Sydney Accord.

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

As an electrical engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Analyze and design electrical generation, transmission and distribution systems.
2. Install, operate, troubleshoot and maintain electrical equipment (including, but not limited to, motors, generators, transformers and related control and protection devices) found in utilities and industrial plants.
3. Apply the Canadian Electrical Code and employ specific computer software to plan, design and specify building electrical systems (including, but not limited to, power, lighting, heating, control and protection circuitry).

## ENGINEERING TECHNOLOGY

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

Electrical Engineering Technology (Power and Controls) Co-op is a three-year cooperative education program providing a comprehensive coverage of the electrical power discipline with emphasis on power systems, control systems and electrical design. The theoretical aspects of this program are complemented by extensive practical components that allow learners to gain invaluable experience with installation, operation and maintenance practices. This is further supplemented with real-world experience provided by two work terms.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL), as well as any similar association in Canada.

Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

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

### CURRICULUM

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

**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 workshop including shop tools, electrical wiring, installation and maintenance of electrical equipment and correct application of the Canadian Electrical Code.

**Work exposure** consisting of field experience, gained from compensated work terms, in the field of electrical engineering technology.

### CAREER OPPORTUNITIES

A graduate of the Electrical Engineering Technology (Power and Controls) Co-op program can find employment with a wide variety of companies involved in the electrical industry. Typical employers include production plants, oil and gas exploration production companies, refineries, offshore servicing companies, power utilities, pulp and paper mills, electrical sales and service groups, shipyards, provincial and federal government departments and consulting engineering companies.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

**Note:** Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
DIPLOMA
• Three Years
• September
• Ridge Road 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.

Semester 4 (Fall)

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<td>RF Transmission and Antennas</td>
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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 RCMP). Due to the nature of any work in Health care and its inherent risk, it is also required that health vaccination records be updated and any outstanding vaccination 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 6. (Winter semester, year 3)

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

ENGINEERING TECHNOLOGY

Electronics Engineering Technology (Biomedical)

The Electronics Engineering Technology (Biomedical) Program is an option available in the three-year Electronics Engineering Technology Program. The program is designed to provide graduates with the knowledge and ability to ensure medical electronic equipment is performing safely and effectively. The program includes a seven week practicum where the learners will work in hospital-based biomedical departments or medical equipment sales and service companies. Student memberships in the Canadian Medical and Biological Engineering Society (CMBES) as well as the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTNL) are encouraged. Education and training is provided in the areas of biomedical instrumentation, microprocessor applications in the health care setting, anatomy and physiology, chemistry, biochemistry, health care and safety.

ACCREDITATION

The 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 continue their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with colleges of the North Atlantic.

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

OBJECTIVES

As an electronics engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Demonstrate an awareness of and concern for patient and staff safety in the health care environment.
2. Apply an engineering systems approach to problem solving with respect to the health care environment, to enable the graduate to readily upgrade their knowledge and skills.
3. Operate proficiently specialized biomedical test instrumentation including patient simulators and analysers, pressure and flow measurement devices and electrical safety analysers.
4. Troubleshoot, maintain, and calibrate complex, electro-medical equipment utilizing industry recognized techniques and protocols.
5. Demonstrate proficiency in the safe operation of several electro-medical devices including patient care monitoring systems, defibrillators, electrosurgery units, diagnostic medical imaging systems, clinical laboratory instrumentation, dialysis delivery systems, respiratory care devices and other diagnostic, therapeutic and patient care instruments.
6. Modify, design, and construct medical electronic devices through the application of electronic and patient data acquisition principles.

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.

Work exposure consisting of field experience, gained from the biomedical practicum.

CAREER 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 progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.
**Engineering Technology (First Year)**

### SELECTION PROCESS

The college offers a common first year in the Engineering Technologies. This initiative allows learners to attend the first two semesters of an engineering technology program at the campus nearest their hometown. After completing the first two semesters, learners then enter the campus which offers the program of their choice to complete the seven week Intersession (May, June), and the subsequent years of their program.

Individuals must submit their application to the campus where they intend to complete the first two semesters of their program. This begins a first come, first served provincial process which reserves a seat at the designated campus for the appropriate Intersession, and subsequent years of program study.

After successful completion of the first two semesters, learners progress to the Intersession in the program for which a seat has already been reserved. Any learner who, after registration, wishes to change his/her original program choice MUST apply for a Program Transfer (see below).

### TRANSFER PROCESS

If a learner wishes to change his/her original program choice, he/she MUST request a program transfer and complete the appropriate form (Request to Transfer Form) which is available through the Registrar’s Office.

Applicants cannot request a change in program prior to entry into the first year. A request to transfer does not guarantee entry into one’s alternate, “new” program choice. Program transfer will be granted only if sufficient space is available. The following conditions apply:

1. The Request to Transfer Form must be received at the Registrar’s Office by February 15.
2. Transfers are granted based on 1) space availability and 2) the learner’s weighted average at the end of semester one. In cases where the learner has been exempted from courses in the first semester, the mark(s) obtained by the learner at another 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):
     - 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)

   **Note:** Commencing Academic Year 2014-2015
   - Mathematics (4 credits) chosen from:
     - Advanced: 2205, 3205 (50% minimum in each course)
     - Academic: 2201 (50% minimum), 3201 (60% minimum)
   - Science (4 credits) two of which must be selected from:
     - Biology: 3201
     - Physics: 3204
     - Chemistry: 3202
     - Earth Systems: 3209

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 learners who intend to enroll in Engineering Technology programs complete both of the Introductory Chemistry courses and both of the Introductory Physics courses.

3. **Adult Basic Education (ABE)**
   - Adult Basic Education (Level III) Graduation with Degree and Technical Profile including the following courses (or equivalent):
     - i. English 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
     - iii. Science from one of the following sections:

   **Applicants with Adult Basic Education (Level III) Graduation with a different Profile may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.**

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

### TRANSFERABILITY

Currently there are a number of agreements in place with other colleges and universities where learners can obtain advanced standing into Engineering and Bachelor of Technology Programs.

- Memorial University – Bachelor of Technology
- Lakehead University – Bachelor of Engineering
- Memorial University – Bachelor of Engineering
- Cape Breton University – Bachelor of Technology
- Athabasca University – Bachelor of Science (Post Diploma)
- Indiana University Purdue University at Indianapolis – Bachelor and Master of Science
- Capuson College – Engineering Bridge Programs
- University of Victoria – Bachelor of Engineering
- University of British Columbia – Bachelor of Engineering
- College of the North Atlantic – Other engineering technology programs (on a course by course basis).

Every effort has been made to ensure that the maximum numbers of transfer credits are attainable by articulating new and revised courses for common curriculum areas. Note: Transfer and articulation agreements with other post-secondary institutes are continuing to evolve. To find out about the latest educational opportunities please contact the Registrar’s Office or any of the campus program administrators.
DIPLOMA  
- Semester 1 and 2 - Refer to Engineering Technology (First Year) CAFCE  
- Three Years  
- September  
- Ridge Road Campus

<table>
<thead>
<tr>
<th>COURSES</th>
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<tr>
<td>CODE</td>
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<td>SU1320</td>
<td>Plane Surveying I</td>
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<tr>
<td>EN1100</td>
<td>Environmental Science</td>
<td>2 2 1</td>
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<tr>
<td>SU1500</td>
<td>Cartography</td>
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The Course and Lab hours per week are based on a 15 week semester. In intersession, the Course and Lab hours will be adjusted to reflect the shorter semester length. Refer to course outline.

Semester 4 (Fall)  
<table>
<thead>
<tr>
<th>Cr</th>
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<tbody>
<tr>
<td>FT1240</td>
<td>Surveying Field Camp</td>
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<tr>
<td>CM2000</td>
<td>Oral/Written Communication Skills</td>
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<tr>
<td>SU1321</td>
<td>Plane Surveying II</td>
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<tr>
<td>MA2100</td>
<td>Mathematics</td>
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<tr>
<td>SU1560</td>
<td>Graphics for Geomatics</td>
<td>3 2 2</td>
</tr>
<tr>
<td>SU2500</td>
<td>Photogrammetry</td>
<td>4 3 2</td>
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Semester 5 (Winter)  
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<tbody>
<tr>
<td>MA2180</td>
<td>Applied Geomatics Mathematics</td>
<td>4 4 1</td>
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<tr>
<td>SU1440</td>
<td>Geographic Information Systems (GIS) I</td>
<td>3 2 3</td>
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<tr>
<td>SU1540</td>
<td>Hydrography I</td>
<td>4 3 3</td>
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<tr>
<td>SU2320</td>
<td>Geodetic Surveying</td>
<td>4 3 3</td>
</tr>
<tr>
<td>SU2530</td>
<td>Cadastral Surveying I</td>
<td>4 3 2</td>
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<tr>
<td>CP1640</td>
<td>Visual Basic Applications for ACAD</td>
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Semester 6 (Spring)  
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<tbody>
<tr>
<td>WC1300</td>
<td>Work Term I</td>
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Semester 7 (Fall)  
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<tr>
<td>CA2900</td>
<td>Municipal Engineering</td>
<td>3 2 3</td>
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<tr>
<td>SU1441</td>
<td>Geographic Information Systems (GIS) II</td>
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<tr>
<td>SU2270</td>
<td>GPS and Remote Referencing</td>
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<tr>
<td>PA1530</td>
<td>Project Management and Financial Analysis</td>
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<td>PA2270</td>
<td>Technical Thesis I</td>
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<td>MA2130</td>
<td>Advanced Geomatics Mathematics</td>
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<tr>
<td>GI1230</td>
<td>Geology for Geomatics/Surveying ET</td>
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Semester 8 (Winter)  
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<tbody>
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<td>Work Term II</td>
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Semester 9 (Spring)  
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<tr>
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<td>Multidisciplinary Field Camp</td>
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<tr>
<td>PR2271</td>
<td>Technical Thesis II</td>
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<tr>
<td>SU1541</td>
<td>Hydrography II</td>
<td>4 3 3</td>
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<td>SU1570</td>
<td>Remote Sensing</td>
<td>3 2 2</td>
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<tr>
<td>SU3300</td>
<td>Geodesy and Map Projections</td>
<td>4 3 3</td>
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<tr>
<td>SU3500</td>
<td>Adjustments</td>
<td>4 3 3</td>
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<tr>
<td>SU2231</td>
<td>Cadastral Surveying II</td>
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</table>

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.

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 study of Geomatics includes such diverse subjects as photogrammetry, cartography, geodesy, astronomy, hydrography, cadastral surveying, digital mapping, and GIS. These subjects are based on a firm foundation in the sciences of mathematics, physics, and chemistry. The associated areas of communications, management, and economics are also an integral part of the program.

In addition to theoretical instruction, the learner gains considerable field and office experience during labs, field camps, and work terms.

ACCREDITATION

The 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.

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.

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

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

OBJECTIVES

Upon successful completion of the Geomatics/Surveying Engineering Technology program the graduate will be able to:

1. Collect, analyze, manage and distribute of spatial information as per standard industry practices.
2. Apply professional and quality assurance standards to execute Geomatics project activities for delivery in response to the need of the private and public industry.
3. Utilize industry standards and specifications to analyze the positional accuracy of measurement systems in preparing land records and engineering drawings.
4. Utilize an appropriate mastery of the knowledge, techniques, skills, and modern tools of Geomatics.
5. Adapt to the emerging applications and equipment within the Geomatics field.

CURRICULUM

General education consisting of Communications (oral or written), Mathematics, Physics, Chemistry, Electrotechnology, Computers, and Engineering Graphics.

Specific education in all aspects of Geomatics.

Practical education employing extensive field training to provide experience with instrumentation and software, through Surveying Camps and practical lab sessions.

Work exposure consisting of field experience, gained from compensated work terms, in the field of geomatics/surveying.

CAREER 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.

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).
ENGINEERING TECHNOLOGY

DIPLOMA
- 40 Months
- September
- Ridge Road Campus

COURSES

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<thead>
<tr>
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<th>TITLE</th>
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<tbody>
<tr>
<td>CG1500</td>
<td>Work Methods and Measurement</td>
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<tr>
<td>EG1520</td>
<td>Engineering Graphics for Mechanical Engineering Technologies</td>
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<td>1</td>
<td>2</td>
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<tr>
<td>SF2410</td>
<td>Safety Engineering Technology</td>
<td>2</td>
<td>2</td>
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<tr>
<td>SP1210</td>
<td>Machine Shop Practice</td>
<td>2</td>
<td>1</td>
<td>2</td>
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</tbody>
</table>

The Course and Lab hours per week are based on a 15 week semester. Refer to course outline.

Semester 4 (Fall)
- CF1100 Materials and Processes 3 3 1
- CG2160 Lean Methods 3 3 1
- CF1120 Human Factors Engineering 3 3 1

Semester 5 (Winter)
- WC1400 Work Term I 5 0 0

Semester 6 (Spring)
- CF1120 Materials and Processes 3 3 1
- FM2201 Mechanics (Dynamics) 3 3 1
- MA1670 Statistics 3 4 1
- DE1110 Applied Research 3 3 0
- SF1830 Metrology and Quality Control 4 3 2
- CS1600 Lean Methods 3 3 1
- CF1100 Human Factors Engineering 3 3 1

Semester 7 (Fall)
- WC1400 Work Term II 5 0 0

Semester 8 (Winter)
- EM2200 Machine Design 3 3 1
- PI3600 Technical Thesis (Seminar) 3 1 0
- CS1400 Engineering Management 3 3 0
- CI240 Instrumentation, Motor Control and PLC 3 2 2
- EM3100 Fluid Power (Hydraulics/Pneumatics) 3 3 1
- SP210 Plant and Facility Layout 4 3 2
- PI330 Organizational Behaviour 3 3 0
- DI1200 Operations Research 3 3 1

Semester 9 (Spring)
- WC2400 Work Term III 5 0 0

Semester 10 (Fall)
- PK3725 Technical Thesis 4 1 2
- CG1500 Production Planning 3 3 1
- CF1120 Engineering Economics 2 2 0
- DE3410 Computer Integrated Manufacturing 3 3 1
- UW1500 Law and Ethics 3 3 0
- SP1400 Facility Engineering 3 2 2
- AC2280 Accounting 4 4 0

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.

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.

This program is also a CAFCE (Canadian Association of Engineering Technicians and Technologists) accredited program.

OBJECTIVES
As an industrial engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Analyse industrial operations, using industrial engineering principles, to improve productivity.
2. Optimize process designs that are both safe and productive while ensuring quality standards are met at minimal cost.
3. Employ problem solving and management strategies that are fundamental to success in various industry settings.
4. Create quality assurance / quality control procedures, in an industrial environment, to improve the effectiveness of the business.
5. Formulate efficiency improvement plans using lean manufacturing techniques.

CURRICULUM

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

Practical education employing labs and shops focused on industrial engineering technology such as ergonomics, work measurement, plant layout, facility planning, production planning, and computer integrated manufacturing.

Work exposure consisting of field experience, gained from compensated work terms, in the field of industrial engineering.

CAREER OPPORTUNITIES
Graduates of this program may obtain employment in both the service and production sectors. Previous graduates have been successful in obtaining employment with oil and gas servicing, aerospace, fish processing, mining, ship building, manufacturing and health services industries.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

Note: Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
ENGINEERING TECHNOLOGY

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.

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Upon completion of this program graduates may choose to further their education by completing a bachelor degree in technology or engineering at one of several institutions that have articulation agreements with College of the North Atlantic.

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Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (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.

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Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (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.
ENGINEERING TECHNOLOGY

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 (AETN NL), 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

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.

This program is currently under review and is subject to change.
DIPLOMA
• CAFCE
• 3 Years
• September
• Ridge Road Campus

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

Semester 3 (Intersession)  Cr  Le  La
CG1500 Work Methods and Measurement  4  3  2
EG1520 Engineering Graphics for Mechanical Engineering Technologies  2  1  2
SP1200 Machine Shop Practice  1  0  3
MA1670 Statistics  4  4  1

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

Semester 4 (Fall)  Cr  Le  La
CE1100 Materials and Processes  3  3  1
CM2800 Oral/Written Communication Skills  3  3  0
CI2540 Mechanics of Solids  3  3  1
SP1240 OHS Management Systems  4  4  0
SP1730 CNC Machining I  3  3  1
SP1830 Metrology and Quality Control  4  3  2
MA2100 Mathematics  5  5  0

Semester 5 (Winter)  Cr  Le  La
CI1240 Instrumentation, Motor Control and Programmable Logic Controls  3  2  2
CF1120 Materials and Processes  3  3  1
FM2100 Fluid Mechanics  3  3  1
FM3100 Fluid Power (Hydraulics/Pneumatics)  3  3  1
TD2100 Thermodynamics  3  3  1
SP260 Quality Control and Reliability  2  1  2
SP1731 CML Machining II  4  3  2

Semester 6 (Spring)  Cr  Le  La
WC1900 Work Term I  5  0  0

Semester 7 (Fall)  Cr  Le  La
EG2130 Engineering Graphics  3  2  2
HW1500 Law and Ethics  3  3  0
PR3630 Technical Thesis (Seminar)  0  0  1
FM2200 Machine Design  3  3  0
DE3430 Computer Integrated Manufacturing  3  3  1
CG1500 Production Planning  3  3  1
DR2720 Tool Design I  3  3  1
DR3810 Advanced Processes  3  2  3

Semester 8 (Winter)  Cr  Le  La
WC1901 Work Term II  5  0  0

Semester 9 (Spring)  Cr  Le  La
FM2201 Mechanics (Dynamics)  3  3  1
SP2300 Quality Assurance  3  3  0
PR3150 Project Management and Financial Analysis  4  4  0
PR2724 Technical Thesis  4  1  2
FM3220 Machine Design  3  3  1
SP1400 Facilities Engineering  3  2  2
DR3721 Tool Design II  3  2  2

ENGINEERING TECHNOLOGY
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.

Learners 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 development, software needs prototyping.

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.

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

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

OBJECTIVES
Upon the successful completion of the Mechanical Engineering Technology (Manufacturing) Co-op program the graduate will be able to:

1. Utilize Computer Aided Design and Computer Aided Manufacturing (CAD/CAM) software as per industry standards.
2. Design mechanical components/assemblies and create engineering drawings and specifications through the use of 2D and 3D CAD and Modeling software.
3. Develop electro-pneumatic and other automation systems, through hands-on practical experience with programming and operating Computer Numerical Control (CNC) equipment, Robotics, Programmable Logic Controllers (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 supervisory role through the use of problem solving and related skills.

CURRICULUM
General education consisting of Project Management Skills (theoretical and applied), Communication Skills (oral and written), Mathematics, Physics, Chemistry, Electrotechniology, Computers, Engineering Graphics, Technology Awareness, and Learner Success.


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

CAREER OPPORTUNITIES
Career opportunities for graduates of this program exist with consulting firms, manufacturing firms, shipbuilding yards, oil & gas servicing industry, food processing plants, research institutions and government departments.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

Note: Learners will also be required to complete a number of non-credit co-op education seminars throughout the program (resume writing, job search skills and interview preparation).
**DIPLOMA**  
- Three Years  
- September  
- Ridge Road Campus

**COURSES**

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

**Semester 4 (Fall)**

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**Petroleum Field Camp**

Learners in Petroleum Engineering Technology will be required to complete a one week drill camp (FT1620) during semester 6 prior to beginning their work term.

**Safety Certifications**

Learners in Petroleum Engineering Technology will be required to complete safety certifications in the following training: H2S, First Aid, WHMIS and Transportation of Dangerous Goods (TDG) during the second year of studies.

**Semester 7 (Fall)**

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**Semester 9 (Intersession)**

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**ENGINEERING TECHNOLOGY**

**Petroleum Engineering Technology (Co-op)**

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 reservoirs. 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.

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.

**CAREER OPPORTUNITIES**

The graduate of this program may obtain employment in all aspects of the petroleum industry. These opportunities include but are not limited to oil and natural gas exploration, production and processing, refining, oil and gas pipeline construction, gas utilities, as well as a variety of related activities associated with refining and transportation.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech) upon completion of a Professional Practice and Ethics Exam.

**OBJECTIVES**

As a petroleum engineering technologist, the graduate will have the knowledge and skill that will allow him/her to:

1. Construct and interpret maps and sections using surface geology, subsurface (drill hole) geology and geophysical data.
2. Interpret topographic maps & profiles, geologic maps & sections, and seismic data to assist in resource exploration and development.
3. Analyze drill cuttings, drill core, and data from open-hole & cased-hole logging tools in order to evaluate reservoir formations in terms of porosity, permeability, fluid saturation and netpay.
4. Assist in planning, designing, inspecting, supervising, and constructing oil and gas wells.
5. Estimating petroleum reserves and optimize productivity using petroleum engineering principles.
6. Select, operate, troubleshoot and maintain the equipment associated with the separation of produced gas/oil/water fluids.

**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 technical courses covering Mechanics, Fluid Mechanics, Thermodynamics, Materials and Processes, Instrumentation and Technological Thesis (Design and Project).

**Practical education** employing labs and shops focused on Drilling, Production, Facilities, Reservoir and Geology.

**Work exposure** consisting of field experience, gained from a minimum twelve week work term which provides learners the opportunity to gain valuable related work experience.

**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).
**Engineering Technology**

**Process Operations Engineering Technology**

The Process Operations Engineering Technology program is designed to prepare graduates to work in the operation and optimization of modern industrial process plants. The program focuses on the science involved in the process of converting raw materials into value-added products in automated production lines. The curriculum focuses on processes associated with mineral processing, petroleum refining and pulp & papermaking and the processes associated with the treatment of environmental by-products. The program also provides the principles to prepare graduates to be flexible for employment in process industries in general.

Typically, the graduates will work as process technologists and supervisors in mineral processing, petroleum, and pulp & paper related industries. They will graduate with the knowledge and skills needed to optimize manufacturing processes, improve product quality, and reduce costs.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland 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.

**CAREER OPPORTUNITIES**

Career opportunities for graduates of this program exist with process industries including mineral processing plants, oil & gas refining, petrochemical plants, pulp and paper mills and specialty chemical companies. As all process industries have common unit operations, graduates possess the skills required to perform in many other processing facilities other than those identified here.

Graduates with two years of progressive work experience may be eligible to receive the designation of Professional Technologist (P. Tech).
In the present economic climate, the human and financial costs of workplace accidents have increased to such an extent that they have become a negative factor in economic growth. Progressive companies and organizations are constantly looking for ways in which they can reduce costs and become more competitive. Due to recent changes in the Occupational Health & Safety Act and in the administration of Workers’ Compensation employer assessments, employers are becoming increasingly aware that an opportunity exists for them to significantly improve efficiency and profitability through a reduction of losses due to accidents and occupational disease. Employer due diligence requirements have been considerably expanded with the implementation of these recent legislative changes.

Safety Engineering Technology (Post Diploma) Co-op utilizes a combination of engineering, physical and behavioural sciences to reduce and eliminate losses. The program consists of two academic terms which may be completed either full-time or part-time on a course credit basis. Completion of the Diploma also requires a cooperative education work term during which the learner conducts a comprehensive on-the-job identification, analysis and evaluation of the various stages necessary to initiate or upgrade an existing safety program.

OBJECTIVES

A graduate of the Post Diploma in Safety Engineering Technology (Co-op), the graduate will have the knowledge and skill that will allow him/her to:

1. Understand the methods of recognition, evaluation and control of hazards to people, facilities, equipment and the environment.
2. Develop and implement programs, systems, procedures and techniques to reduce the losses associated with accidents and occupational disease in industry, government and the service sector.

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.

CAREER 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.

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).
# Welding Engineering Technician

**Diploma**
- Two Years
- September
- Burin Campus

## COURSES

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**SAFETY CERTIFICATIONS**

- Welding Inspector Level II
- Radiographic Inspection Level I
- Magnetic Particle Inspection (MT) Level II
- Ultrasonic Inspection (UT) Level II
- Neutron Radiography (RT) Level I
- Magnetic Particle Inspection (MT) Level II
- Liquid Penetrate Inspection (PT) Level II

**Semester 6 (Intersession)**

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</table>

**CURRICULUM**

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

Specific education in the theory and application of welding processes, procedures, and weldments.


Work exposure consisting of field experience, gained from an optional one week work exposure, in the field of welding engineering technology.

**CAREER OPPORTUNITIES**

- The learner, upon graduation, may find employment with contractors, metal fabricators, quality assurance/quality control consultants, welding inspection firms, suppliers, oil & gas exploration/production-processing facilities and any other group that must comply with standards associated with the welding industry.

Graduates with two years of progressive work experience may be eligible to receive the designation of Certified Technician (C. Tech) upon completion of a Professional Practice and Ethics Exam.

**EXTERNAL CERTIFICATIONS**

- The learner, upon graduation, will be eligible to sit for the certification examinations for the following:
  - CSA W178.2 Welding Inspection Level I
  - CSA W47.1 Welder/Welder Operator Qualification
  - Canadian Nuclear Safety Commission
  - Certified Exposure Device Operator
  - CAN/CGSB 48.9712
  - Radiography (RT) Level I
  - Ultrasonic Inspection (UT) Level I
  - Magnetic Particle Inspection (MT) Level II
  - Liquid Penetrate Inspection (PT) Level II

**ENTRANCE REQUIREMENTS**

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

1. **High School**
   - High School Graduation certificate with a 60% overall average in the following (or equivalent):
     - i. English (2 credits) (minimum 60%) from: 3201 or 3202
     - ii. Mathematics (4 credits) chosen from: Advanced: 2205, 3205 (50% minimum in each course)
   - Academic: 2204 (50% minimum), 3204 (60% minimum)

2. **Comprehensive Arts and Science (CAS) Transition Courses**
   - Note: The remaining two Science credits to be chosen from the highest Science mark in level 1, 2 or 3

3. **Advanced 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:
       - Biology 1101, 2101A, 2101B, 2101C, 3101A, 3101B, 3101C
       - Chemistry 1102, 2102A, 2102B, 2102C, 3102A, 3102B, 3102C
       - Physics 1104A, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C

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.
ADVANCED-DIPLOMA

• One Year
• September
• Bay St. George Campus

COURSES

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<td>LW2500</td>
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<td>LW2600</td>
<td>Courtroom Terminology and Proceedings</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.

Sequencing of courses and delivery may vary if delivered in a modular format.

CERTIFICATIONS

In addition to the formal semester courses listed in the program of studies, students in the Conservation Program are required to complete the following certifications prior to program graduation:
- Officer Safety Training
- Wilderness First Aid
- Hunter Education
- Firearms Safety
- ATV Safety
- Snowmobile Safety

NOTE: Students should be aware that additional fees apply for the above certifications, field trips/tours. Additional expenses will be necessary for the purchase of items of clothing which are required for scheduled labs.

SPECIAL REQUIREMENTS

Because of the extensive field exposure incorporated in this program, students are required to acquire appropriate clothing for outdoor work.

NOTE: Because of the extensive field and officer safety components incorporated in this program, participation in activities that are physically demanding will be required.

Conservation Law Enforcement (Advanced Diploma)

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. Demonstrate practical and experiential skills and competencies necessary for all aspects of Natural Resources Conservation Law Enforcement.
2. Apply the skills and techniques used in a wide range of field and administrative procedures including the ability to generate legal documents and use and download GPS maps associated with Conservation Enforcement.
3. Demonstrate the skills and techniques associated with the enforcement of provincial and federal policies, acts and regulations.
4. Engage individual and community stakeholders as partners in the sustainable development of natural resources in the province of Newfoundland and Labrador.
5. Make sound decisions regarding natural resources conservation enforcement challenges and undertake measures and treatments as might be associated with natural resources protection, management and utilization.

EMPLOYMENT OPPORTUNITIES

Graduates of this program may obtain employment throughout Canada in a variety of Conservation Enforcement fields of protection and enforcement with Federal and Provincial Departments as well as the Private Sector.

TRANSFERABILITY

Graduates of Conservation Enforcement may elect to further their postsecondary studies at a number of Canadian Universities.

ENTRANCE REQUIREMENTS

Graduation from a recognized college or university with a two year diploma or a degree in an area of studies directly related to natural resource management and/or renewable resources. Applicants with diplomas or degrees from other related areas may be considered.

Note: If the diploma or degree is not in an area of studies directly related to natural resources and/or renewable resources, applicants should note that employment as a Conservation Officer may not be possible. However, employment opportunities may exist in other areas.

Students must submit an official Preadmission College Certificate of Conduct from the Royal Newfoundland Constabulary (RNC), the Royal Canadian Mounted Police (RCMP) or local provincial/municipal force, prior to registration.
NATURAL RESOURCES

Fish and Wildlife Technician

With increasing emphasis on sustainable development, integrated resource management policy and ecosystem based management across Canada and around the world, technicians in the natural resources sector must have a foundation in matters related to biodiversity in general and fish and wildlife management issues in particular. The two-year Fish and Wildlife Technician program, which shares many courses with the Forest Resources Technician program, is designed to enable students with a specific interest in fish and wildlife to participate in studies dedicated 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
Graduates of the Fish and Wildlife Technician program, who wish to pursue additional post-secondary studies, can apply for entrance with advanced standing at a number of Canadian Universities that the college has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

ACCRREDITATION AND RECOGNITION
To ensure the benefits of a consistently high standard throughout the course of studies directed towards their career goals. The program provides a balance of field and classroom experiences that include a significant computer based data collection and analysis component.

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) OSC Endorsement Standard First Aid & CPR/AED WNR05/01/05 OY Safety Training Wilderness First Aid Trapper Education Certificate

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 will be required to hold valid certifications for the above courses prior to graduation.

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 Intersession of the Forest Resources Technician program.
The Forest Resources Technician program provides a strong foundation in the skills and knowledge required for the Natural Resources Industry.

The program strives for innovative training that reaches beyond the classroom. The emphasis is on "real life" experiences.

Graduates of the Forest Resources Technician program have a solid foundation to build a career as an employee in the Natural Resources Industry. The program may also inspire individuals to pursue further studies in particular concentration areas.

OBJECTIVES
1. Demonstrate the knowledge, skills and attitudes required to participate in finding solutions to forest management problems and challenges.
2. Identify forest ecosystem issues, challenges and alternate solutions.
3. Demonstrate assessment and evaluation techniques involved in forest resource protection, management and utilization.
4. Identify current preventive measures, treatments and practices used in forest resource protection, management and utilization.
5. Demonstrate effective procedures and practices in the use of field and office equipment to assess and analyze natural resources data.

EMPLOYMENT OPPORTUNITIES
Graduates of this nationally accredited program may obtain employment throughout Canada in a variety of forestry related fields: protection and enforcement, forest inventory and site classification, logging and engineering, forest access road construction and maintenance, silviculture as well as parks, wildlife and environmental assessment. This program has an established reputation for supplying graduates to employers all across Canada.

PROGRAM TRANSFERABILITY
Graduates of the Forest Resources Technician program, who wish to pursue post-secondary studies, can apply for entry with advanced standing at a number of Canadian Universities that the College has established credit transfer agreements with. Please refer to the NL Department of Education’s transfer guide (www.cna.nl.ca/transfer), or contact your intended university or college.

ACREDITATION 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):
   - English (2 credits) (minimum 60%) from: Advanced 3201 or 3202
   - Mathematics (4 credits) chosen from: Advanced: 2205, 3205 (50% minimum in each course)

   OR
   - Students who graduated from any Canadian school with an overall average of 70% in 2004 and 3204, or a pass in both 2205 and 3205 can be exempted from MA1100.
   - Students who received a combined average of 70% in Math 3200 or a pass by the grade in High School math.

2. Comprehensive Arts and Science (CAS) Transition
Comprehensive Arts and Science (Transition) Certificate with the following courses:
   - Math: MAT404, MA1041
   - English 3201A, 3201B, 3201C
   - Social Studies 3202A, 3202B, 3202C

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

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 component incorporated into the program participation in activities, that are physically demanding, will be required.
COURSES

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Semester 3 (Intersession)

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<td>GS3210</td>
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The GIS Applications Specialist is the “expert” who provides technical expertise to produce and analyze spatial information for effective planning and reporting activities in a broad range of disciplines. Specifically, a GIS Applications Specialist will help various agencies and government to effectively apply Geographic Information Systems (GIS), remote sensing, Global Positioning Systems (GPS), internet mapping solutions and data visualization technologies to support informational needs, workflows or business processes. GIS Applications Specialists can work in various sectors; the current market for GIS Applications Specialists in Newfoundland and Labrador includes: various provincial and federal departments, crown corporations, municipalities, research agencies, post-secondary institutions and private corporations.

This post-graduate, intensive, three-semester GIS program utilizes current high-end technology tools to collect, store, manipulate, analyze, interpret, and communicate geographic information within a variety of disciplines. The students will be versed in several spatial computing technologies used in the industry today and have access to the latest in appropriate computer hardware, software, and field technology. Students will have considerable opportunities to practice their skills in a work-life setting by putting theory into practice.

OBJECTIVES

1. To provide the student with knowledge and generic skills needed to develop and implement solutions to computational problems. Students will be exposed to problem analysis techniques and solution development using top-down development method, modular design approach, and object-oriented design concepts. To implement developed solutions, students will use Microsoft Visual Studio.
2. To allow the student to develop and apply skills for the effective presentation of geographic information using software typically encountered in a GIS working environment.
3. To enable the student to learn the techniques of gathering geographic related information from the field or existing maps or records and positioning them onto a framework of existing spatial data structures.
4. To give the student the capabilities to understand fundamental principles of database processing with respect to GIS environments and develop skills in designing, implementing and managing databases.
5. To provide the student with a firm foundation of subsequent studies in GIS applications in various program areas. As well, the techniques learned will allow students to apply the knowledge and skills to develop simple to elaborate good practice applications with some theory relating to Vector GIS technology.
6. To provide the student with the skills necessary to analyze geographic data using hypothesis testing, significance tests, descriptive and inferential statistics.
7. To allow the student, within a project team, to design and implement a GIS application that addresses predefined objectives. During this process, the student will apply their knowledge and skills and rely on each other, with guidance from faculty, to acquire new skills to solve GIS problems.

8. To allow the student to expand his/her GIS skills to include web-based GIS applications. The student will learn how to build web-based GIS applications to contribute to the world of Distributed Geographic Information.
9. To give the student the capability of designing efficient and user-friendly graphical interfaces and integrating Microsoft Windows-based software in the development of GIS applications.
10. To give the student the capability of designing GIS applications based on the integration of programming languages, database management systems and GIS software to achieve the most efficient data access, manipulation and presentation.

Entrance Requirements

Applicants must have graduated from a recognized college or university with a diploma and/or degree in a relevant program area. Related program areas include, but are not limited to forestry, natural resource sciences, engineering, environmental studies, geology, surveying, geography, business, municipal planning and law enforcement.

This post-graduate, intensive three-semester GIS program utilizes current high-end technology tools to collect, store, manipulate, analyze, interpret, and communicate geographic information within a variety of disciplines. The students will be versed in several operating systems used in the industry today and have access to the latest in appropriate computer hardware, software, and field technology.

EMPLOYMENT OPPORTUNITIES

Program graduates are prepared to work in positions as diverse as GIS programmers/analysts, 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.
Additional Information for Health Sciences Applicants
School of Health Sciences

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.

HEALTH SCIENCES PROGRAMS EDUCATION REGULATIONS
1. Examinations and Promotions
The general rules and regulations of the college shall govern, except in instances specifically covered by the following regulations.
   a. The faculty constitutes the examining body for all examinations. The standing of every student will be assessed at the end of each semester and will be communicated to individual students by the Registrar.
   b. Students have the right to appeal a decision made with respect to their promotions.
   c. To be promoted a student must, in addition to obtaining the requisite academic standard, complete and deliver all laboratories, assignments, and work reports as required.
   d. The Primary Care Paramedicine program is taught in block format and does not align with the College’s annual academic schedule. Drop / add course dates, final examination schedules, etc. will differ and will be provided to each class at the beginning of each semester.
2. Medical Laboratory Sciences, Medical Radiography, Respiratory Therapy
   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.
3. Course Pass Mark
   a. semester 1 and 2 for Medical Laboratory Sciences, Medical Radiography, Respiratory Therapy – 50%
   b. Rehabilitation Assistant, Diagnostic Ultrasoundography, Medical Laboratory Assistant, and semester 3 onwards for Medical Laboratory Sciences, Medical Radiography, Respiratory Therapy – 60%.
   c. Primary Care Paramedicine – 70% for paramedic-specific courses; 60% for all other courses.
   d. Promotion from semester 5 to semester 6 for Medical Laboratory Sciences, Medical Radiography, and Respiratory Therapy. Students must have passed all courses in semesters 1, 2, 3, 4 and 5 and have a minimum G.P.A. of 2.00 to be promoted to the sixth semester (start of the clinical training).
   e. Promotion to the Clinical and Field Practicum training block in semester 4 and 6 for Primary Care Paramedicine. Students must pass all courses in the previous semesters to be promoted to the practicum training block.
   f. 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 accredited 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 for each program on the following pages. Before final acceptance into a Health Sciences program is granted, the applicant must also submit the following documentation:

1. Current Certificate of Conduct obtained from the Royal Newfoundland Constabulary, the Royal Canadian Mounted Police, or local provincial/municipal forces, including the “Vulnerable Sector Check”. Applicants with a criminal offence listed on their Certificate of Conduct may be denied admission to the School of Health Sciences.
2. Immunization Record, obtained from a Public Health nurse in the applicant’s area. The record must document the following vaccinations:
   i. DPT (Diphtheria, Polio, Tetanus)
   ii. MMR (Measles, Mumps, Rubella)
   iii. Varicella (Chickenpox)
   iv. Hepatitis B
   The applicant is responsible for ensuring that all immunization requirements are fulfilled, and the immunization record is 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 required for applicants who have not been tested before; a one-step test is sufficient in all other cases. If the tuberculin test is positive the applicant will be required to have a chest x-ray. The applicant is responsible for ensuring that all medical requirements are fulfilled, and the documentation complete, before submission. The applicant is also responsible for all associated costs (vaccinations, laboratory testing, physician fees, certificate of conduct fees, etc.).

HEALTH SCIENCES CLINICAL TRAINING PRACTICUMS
All Health Sciences programs include mandatory clinical training components (practicums). Students will be assigned to affiliated hospital / clinical sites, and will be responsible for meeting the site’s pre-employment requirements. Detailed instructions will be provided by program faculty prior to the start of each practicum. Failure to meet the requirements may result in the student being denied access to the clinical site, which could, in turn, affect graduation from the program. Students may request to complete a clinical training practicum at a site that is not currently offered as an affiliated site. In these cases the College will make every effort to accommodate the request but it is important to note that it will not always be possible to do so. A legal agreement with the requested institution must first be established, and

100
## Post Diploma
- Thirteen Months
- September
- Prince Phillip Drive Campus

### Courses

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

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Course lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In semester 3, the lecture and Lab hours will be adjusted to account for the clinical training component.

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

### Ultrasonography

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).

### Accreditation

The program at the Prince Philip Drive Campus is accredited by the Canadian Medical Association.

### Program Transferability

Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland or a Bachelor of Science (Post Diploma, Human Science) from Athabasca University.

### Entrance Requirements

To be accepted into the Diagnostic Ultrasonography program, an individual must have successfully completed an accredited program in Medical Radiation Technology (Medical Radiography, Radiation Therapy or Nuclear Medicine) and possess a certificate of registration with the Canadian Association of Medical Radiation Technologists (CAMRT).

Interested applicants should submit to the Registrar’s Office at the college an official application form along with a certified copy of: (1) high school marks (2) Medical Radiation Technology program marks (3) results of CAMRT examinations and (4) proof of current registration with the CAMRT.

Students meeting academic entrance requirements are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the “Health Sciences Programs Admission Requirements” section of the Calendar for details.
Medical Laboratory Assistant

Medical Laboratory Assistants are medical laboratory professionals who collect patient specimens, perform pre-analytical procedures to prepare them for analysis, and do data entry, clerical and reception duties. As an integral member of the health care team, the medical laboratory assistant is part of the front line laboratory staff and is often the first person with whom patients and clients interact. The profession therefore requires strong communication and organizational/time management skills as well as professional conduct.

OBJECTIVES

1. To provide the academic knowledge outlined in the Canadian Society for Medical Laboratory Science (CSMLS) competency profile, and to apply the learned knowledge in clinical practice.
2. To provide the knowledge and skills necessary to perform pre-analytical clinical laboratory procedures.
3. To develop the ability to communicate effectively with the patient and other members of the health care team.
4. To maintain a high level of professional conduct in the performance of duty.

CURRICULUM

This is a 36 week program, which includes training at the College as well as clinical placements at various hospitals/clinics throughout Newfoundland and Labrador. Semesters 1 and 2 (15 weeks each in duration) take place at the college whereas Semester 3 consists of a 6-week clinical placement. Graduates of the program will be eligible to write the certification examination set by the Canadian Society for Medical Laboratory Science.

ACCREDITATION

The program at the Grand Falls-Windsor-Windsor Campus is accredited by the Canadian Medical Association.

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: 2203, 3205 (50% minimum in each course)
      Academic: 2204 (50% minimum), 3204 (60% minimum)
   Note: Commencing Academic Year 2014-2015:
      ii. Mathematics (4 credits) chosen from:
         Advanced: 2200, 3200 (50% minimum in each course)
         Academic: 2201 (50% minimum), 3201 (60% minimum)
   3. Science (4 credits) chosen from two of:
      Biology: 3201
      Physics: 3204
      Chemistry: 3202
      Earth Systems: 3209
   4. 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: CH1030, CH1031
      c. Physics: PH1030, PH1031
   Note: It is strongly recommended that CAS students who intend to enroll in the Medical Laboratory Assistant program complete the Biology and 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 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.
HEALTH SCIENCES
Medical Laboratory Sciences

OBJECTIVES
1. To provide the academic knowledge outlined in the Canadian Society for Medical Laboratory Science (CSMLS) competency profile, and to apply the learned knowledge in clinical practice.
2. To provide the basic knowledge and skills necessary to perform clinical laboratory procedures.
3. To develop the ability to communicate effectively with the patient and with other members of the health team.
4. To maintain a high level of professional conduct in the performance of duty.

CURRICULUM
The curriculum for this program is designed to encompass three years of training. The first two years are spent at the college and the emphasis is placed on academic and theoretical training.

During the sixth, seventh, eighth and ninth semesters emphasis is placed upon practical training with clinical experience being conducted in health care institutions and a simulated hospital laboratory environment.

Graduates of the program at the Prince Philip Drive Campus will be eligible to sit the certification examination set by the Canadian Society for Medical Laboratory Science (CSMLS). The CSMLS is the national professional body for medical laboratory technologists.

ACCREDITATION
The program at the Prince Philip Drive Campus is accredited by the Canadian Medical Association.

PROGRAM TRANSFERABILITY
Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland or a Bachelor of Sciences (Post Diploma, Human Science) from Athabasca University.

ENTRANCE REQUIREMENTS
Eligibility for admission to the Medical Laboratory Sciences 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):
   a. English (4 credits) or French (4 credits)
   b. Mathematics (4 credits) chosen from:
      i. Advanced: 2205, 2206 (minimum 60% in each course)
      ii. Mathematics (4 credits) chosen from:
         a. 2201, 2202, 2203, 2204 (minimum 60% in each course)
         b. Mathematics (4 credits) chosen from:
            i. Advanced: 2201, 2202, 2203, 2204 (minimum 60% in each course)

Note: The first course measured is the recommended course.

A. High School certification is required.

B. English (4 credits) or French (4 credits)

C. Mathematics (4 credits) chosen from:
   a. Advanced: 2201, 2202, 2203, 2204 (minimum 60% in each course)
   b. Mathematics (4 credits) chosen from:
      a. Advanced: 2201, 2202, 2203, 2204 (minimum 60% in each course)

D. Students must possess a valid Emergency First Aid Certificate.

Note: To be employed in the Medical Laboratory Sciences field, one must have sufficiently strong eyesight to permit extended microscopic work, and normal colour perception.
Medical Radiography

Medical Radiological Technologists play a vital role in the diagnosis and treatment of many injuries and illnesses. At a physician's request, Radiological technologists use equipment that emits x-rays to produce images of a body part or system. Their work involves a broad variety of procedures and specialties including: routine general radiography, mammography, angiography, fluoroscopy and computerized tomography.

OBJECTIVES

1. To provide the academic knowledge outlined in the Canadian Association of Medical Radiation Technologists (CAMRT) Competency Profile.
2. To apply the learned academic knowledge in clinical practice.
3. To develop a sense of professionalism and responsibility.
4. To provide comprehensive knowledge of the hazards involved and appropriate protection methods.
5. To provide the community with trained personnel who can serve their employers and patients with the highest degree of competence.

CURRICULUM

The curriculum for this program emphasizes theory and practice of medical radiography. Second year classroom and laboratory sessions are supplemented by weekly assignments at Eastern Regional Integrated Health Authority.

The clinical phase of the program is designed to train the student in practical aspects of medical radiography and to discipline the student to the working conditions of the radiology department. This portion of the course is a clinical training period during which the student will apply, under supervision, the theories and principles learned during the previous years of training.

The aim of this portion of the program is:
1. To ensure that the student can accurately and confidently perform the varied examinations that are carried out on a daily basis in a radiology department.
2. To ensure that the student has performed the number and variety of examinations required to complete the course.

The clinical phase will consist of 48 weeks of training. The program is conducted at sites of Eastern Regional Health Authority. Students will follow a rotation schedule designed to provide broad clinical exposure to the different radiographic specialties.

Graduates of the program will be eligible to write Canadian Association of Medical Radiation Technologists (CAMRT) certification examinations. The CAMRT is the national professional body for medical radiation technologists.

ACCREDITATION

The program at the Prince Phillip 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

Eligibility for admission to the Medical Radiography program requires the applicant to meet one of the following four academic criteria:

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

   Note: Commencing Academic Year 2014-2015
   i. Mathematics (4 credits) chosen from:
      Advanced: 2200, 3200 (50% minimum in each course)
      Academic: 2201 (50% minimum), 3201 (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 (Transition) Certificate with the following courses:
   1. English (minimum 60%): CM1040, CM1041
   2. Math (minimum 60%): MA1040, MA1041
   3. Four 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 Medical Radiography program complete the Biology and Physics 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
   Applicants with Adult Basic Education (Level III) Graduation with a different Profile (and appropriate grades) may be eligible for admission to the program provided the appropriate selection of courses including those outlined above have been completed.

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

Students meeting academic entrance requirements are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the ‘Health Sciences Programs Admission Requirements’ section of the calendar for details.

Students must possess a valid Emergency First Aid Certificate and Basic Cardiopulmonary Resuscitation Certificate to be eligible for a Diploma from the college.
DIPLOMA
• 2 Years
• September
• Corner Brook, Clarenville, and Grand Falls-Windsor Campuses

Application Package:
Application Packages are now available. To receive an application, please contact:

Corner Brook Campus
Phone: (709) 637-8530 Fax: (709) 634-2126

Grand Falls-Windsor-Windsor Campus
Phone: (709) 292-5600 Fax: (709) 489-5765

Clarenville Campus
Contact Person: Louise Carpenter
Phone: 709-466-6901

Curriculum Description:

Semester 1: 15 weeks
• N101 - Introduction to Nursing Concepts
• LN101 - Introduction to Nursing Concepts/Skills Labs
• CN101 - Nursing Practice for Introduction to Nursing Concepts
• N102 - Anatomy and Physiology I
• N103 - Caring Relationships
• LN103 - Caring Relationships Labs
• N104 - Medication Administration
• LN104 - Medication Administration/Skills Labs
• N106 - Medical Surgical Nursing Concepts I
• LN106 - Medical Surgical Nursing Concepts I/Skills Labs

Semester 2: 15 weeks
• N201 - Mental Health Nursing Concepts
• CN201 - Nursing Practice for Mental Health Nursing Concepts
• N202 - Anatomy and Physiology II
• N204 - Health Assessment
• LN204 - Health Assessment Labs
• N205 - Long Term Care Nursing Concepts
• CN205 - Nursing Practice for Long Term Care Nursing Concepts
• N206 - Medical-Surgical Nursing Concepts II
• LN206 - Medical-Surgical Nursing Concepts II Skills Labs
• CN206 - Nursing Practice for Medical-Surgical Nursing Concepts II

Semester 3: 12 weeks
• N301 - Community Health Nursing Concepts
• CN301 - Nursing Practice for Community Health Nursing Concepts
• N302 - Maternal-Child Health Nursing Concepts
• LN302 - Maternal-Child Health Nursing Concepts Lab
• CN302M - Nursing Practice for Maternal Health Nursing Concepts
• CN302P - Nursing Practice for Child Health Nursing Concepts
• N307 - Professional Development

Semester 4: 12 weeks
• CN401 - Nursing Practice for Professional Development
• CN402 - Preceptorship

HEALTH SCIENCES

Practical Nursing

College of the North Atlantic brokers the Practical Nursing program from the Center for Nursing Studies, delivering it in regions with a demonstrated labor market need.

This program is designed to prepare graduates to provide nursing services for clients across the lifespan in institutional and community based settings within the approved scope of practice for licensed practical nurses in Newfoundland and Labrador.

It introduces the learner to the role of practical nurse in promoting, protecting, restoring, maintaining and supporting the health status of individuals across the health and developmental continuum.

The program encompasses classroom work supplemented with skills lab and nursing practice components.

Application Process:
This program is designed to prepare graduates to provide nursing services for clients across the lifespan in institutional and community based settings within the approved scope of practice for licensed practical nurses in Newfoundland and Labrador. The Practical Nursing Program is scheduled to begin in the fall of 2013 to meet the need for Licensed Practical Nurses throughout the Newfoundland and Labrador.

Applicants are asked to complete all documentation contained in the Practical Nurse Application package available by contacting Learner Services.

Only completed application packages will be considered.
Primary Care Paramedic

5. To maintain a high level of professional and ethical conduct in the performance of all duties.

Additional entrance requirements include:
• Current CPR Certificate (Level C or HCP)
• Current First Aid Certificate (Standard)
• Class 05 Learner (Level 1) Drivers Licence (minimum)

Students meeting the entrance requirements described above are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the “Health Sciences Programs Admission Requirements” section of the calendar for details.

Students admitted to the Primary Care Paramedic program will be permitted a maximum of one additional year to complete their program of studies. Students will be required to withdraw from the program at the point where completion within the allowable time frame is not possible. Students will be required to reapply for admission under re-admission guidelines as outlined in the current College Calendar. Re-admitted students will be required to successfully complete a skills-based exam in order to carry forward credits for previously-completed skills-based courses (PA1270, PA1330, AND PA1450).

CURRICULUM

The 37-week Primary Care Paramedic 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). Placement sites are located throughout Newfoundland and Labrador. Availability is limited and students must be prepared to re-locate to their assigned site(s) under short notice.
HEALTH SCIENCES
Rehabilitation Assistant (OTA & PTA) (DLS)

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 include 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 (minimum 60% in each course)
  - Academic: 2204 (50% minimum), 3204 (60% minimum)

Note: Commencing Academic Year 2014-2015
- i. Mathematics (4 credits) chosen from:
  - Advanced: 2200, 3200 (50% minimum in each course)
  - Academic: 2201 (50% minimum), 3201 (60% minimum)
- iv. Science (2 credits) chosen from one of:
  - Biology: 3201
  - Physics: 3204
  - Chemistry: 3202
- iv. Earth Systems: 3209
- v. 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:

- i. English (minimum 60%): CM1060, CM1061
- ii. Math (minimum 60%): MA1040, MA1041
- iii. Two Science courses chosen from one of the following three combinations:
  - a. Biology: 1102, 1102
  - b. Chemistry: CH1030, CH1031
  - c. Physics: PH1035, PH1051

Note: It is strongly recommended that CAS students who intend to enroll in the Rehabilitation Assistant (OTA/PTA) program complete both of the 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):

- i. English (minimum 60%): 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
- ii. Mathematics (minimum 60%): 1104A, 1104B, 1104C, 1104A, 1104B, 1104C, 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 including those outlined above have been completed.

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

Students meeting academic entrance requirements are accepted on a first come first served basis. Before final acceptance is granted, additional documentation must be submitted; see the ‘Health Sciences Programs Admission Requirements’ section of the calendar for details.
### COURSES

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<td>or CM1120</td>
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<td>PH1100 or PH1120</td>
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<td>CM1401</td>
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<tr>
<td>or CM1145</td>
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<tr>
<td>MA1670</td>
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**Semester 3 (Intersession I)**

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<tr>
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<tr>
<td>PS1420</td>
<td>Health Care Organization</td>
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<td>PS1100 or PS1150</td>
<td>Psychology</td>
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<td>CH2200 or CH1150</td>
<td>Chemistry</td>
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Course Lecture (Le) and Lab (La) hours per week are based on a 15 week semester. In intersession the Lecture and Lab hours will be adjusted to reflect the shorter semester length.

**Semester 4**

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<tr>
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<td>Cardiopulmonary Pathophysiology</td>
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<tr>
<td>BL2410</td>
<td>Microbiology</td>
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<td>RT2200</td>
<td>Respiratory Care: Complex Care</td>
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<td>RT2300</td>
<td>Pharmacology</td>
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<td>RT2450</td>
<td>Respiratory Therapy Procedures</td>
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**Semester 6 (Intersession II)**

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<tr>
<td>RT3401</td>
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<td>SD1680</td>
<td>Ethnican Health Care</td>
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<tr>
<td>RT2452</td>
<td>Neonatal/Neonatal Respiratory Care</td>
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<tr>
<td>RT3500</td>
<td>Cardiopulmonary Diagnostics</td>
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<tr>
<td>SD1611</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.

### 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 understanding of the Respiratory Therapists’ role and responsibilities within the health care team.
5. To provide the community with trained personnel who can meet the standards of practice.

### 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, cardiology diagnostics, and medical and surgical 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 (Post Diploma, Human Science) from Athabasca University.

### ENTRANCE REQUIREMENTS

Eligibility for admission to the Respiratory Therapy program requires the applicant to have completed 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 (4 credits) chosen from:
    - Advanced: 2205, 3205 (50% minimum in each course)
    - Academic: 2204 (50% minimum), 3204 (60% minimum)

**Note:** Commencing Academic Year 2014-2015

- Mathematics (4 credits) chosen from:
  - Advanced: 2201, 3200 (50% minimum in each course)
  - Academic: 2201 (50% minimum), 3201 (60% minimum)

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

- Comprehensive Arts and Science (Transition) Certificate with the following courses:
  - English (minimum 60%): CM1060, CM1061
  - Math (minimum 60%): MA1040, MA1041
  - Four 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 Respiratory Therapy program complete the Biology and 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):
  - English (minimum 60%): 3101A, 3101B, 3101C or 3102A, 3102B, 3102C
  - Mathematics (minimum of 60%) 1104A, 1104B, 1104C, 2104A, 2104B, 2104C, 3104A, 3104B, 3104C
  - Science from two 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.

- 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.
This two-year Aircraft Maintenance Engineering Technician program offers training in the inspection, maintenance, and repair of aircraft and aircraft components. Some of the duties include:

- Perform aviation safety and airworthiness inspections
- Troubleshoot and repair fixed wing aircraft and helicopters
- Safely perform ground handling and routine inspections
- Perform power plant and structural repairs
- Troubleshoot and repair aircraft systems and avionics

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.
5. Meet the requirements for three Aircraft Maintenance Engineer licenses: M1-Small aircraft, M2-Large aircraft and E-Avionics

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: 2205, 3205 (50% minimum in each course)
   ii. Academic: 2204 (50% minimum), 3204 (60% minimum)

   Note: Commencing Academic Year 2014-2015
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204 (50% minimum), 3201 (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):
   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, 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:
- Fixed wing airlines
- Helicopter operators
- Rotary commercial airlines
- Aircraft manufacturers
- Repair and overhaul companies
- Private operators
- Flying schools
- Government departments
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. Some of the duties include:

- Use specialized tools and equipment
- Employ recognized techniques for maintenance repair and fabrication
- Perform repairs using wood, fabric, sheet metal and 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.
5. Meet the requirements to become an Aircraft Maintenance Engineer category "S" - Structural Repair.

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

1. High School
   - High School Graduation
2. 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
3. Comprehensive Arts and Science (CAS) Trades
   - Comprehensive Arts and Science (Trades) Certificate
4. Mature Student Status
   - Applicants who do not meet the educational pre-requisites, 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
Industrial Trades

Automotive Service Technician

Automotive Service Technicians adjust, test and repair engines, steering systems, braking systems, drive trains, vehicle suspensions, electrical systems and air conditioning systems, and do wheel alignments. Some of the duties include:

- Repair, rebuild and service specific parts
- Diagnose using testing equipment
- Disassemble and reassemble damaged parts
- Prepare scheduled maintenance
- Interact and advise customers

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. 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
3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
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:

- Garages
- Service stations
CERTIFICATE
• 28 Weeks
• Varies
• Bay St. George Campus

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For learners who have successfully completed the Cook certificate (Plan of Training as of March 2011) these courses will enable the learner to receive a Baker certificate.

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
- Cut and form dough, prepare fillings
- Use ovens to bake products
- Decorate baked goods
- Purchase stock and rotate ingredients and supplies
- Maintain public health standards are met

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Develop menus.
3. Practice and maintain sanitary standards.
4. Develop production schedules.
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. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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:
- Specialty shops
- Hotels
- Restaurants
- Bakery manufactures
- Self employed
CERTIFICATE
• RED SEAL CERTIFICATION
• 31 Weeks
• September
• Port aux Basques Campus

COURSES

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OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment safely.
3. Interpret engineering drawings.
5. Plan sequence of operations.
6. Prepare layout operations.

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

1. High School
   High School Graduation

2. 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

INDUSTRIAL TRADES
Cabinetmaker

Cabinetmakers build and repair custom or production-type fixtures and furniture made of wood or wood substitutes. Some of the duties include:

- Read specifications and drawings
- Create layouts and patterns
- Set up and operate woodworking equipment
- Cut, shape, mould and assemble components made of wood or wood substitutes
- Sand, stain, polish and apply veneers

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment safely.
3. Interpret engineering drawings.
5. Plan sequence of operations.
6. Prepare layout operations.

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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:

- Furniture manufacturers
- Cabinet making shop
- Interior finishing firms
- Residential developers
Carpenters use hand and power tools in residential and commercial construction in accordance to National Building Codes. Some of the duties include:

- Read and interpret blueprints, drawings and sketches
- Calculate requirements and specifications
- Prepare layouts
- Use measuring tools
- Cut, shape and assemble and join materials
- Build and install foundations, floor beams, sub-floors, walls and roof systems
- Install doors, stairs, moldings and hardware trims
- Operate hand and portable power tools
- Utilize various construction products
- Complete construction projects for stairs, concrete, floors, walls and roofs

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment safely.
3. Interpret drawings and specifications.
4. Solve problems and keep a construction project on schedule.
5. Use various types of scaffolding.
6. Apply National Building Code standards and energy efficient concepts

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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 on the following areas:
- General contractor
- Custom woodworking shops
- Building suppliers
- Residential and commercial construction
- Industrial Maintenance
CERTIFICATE
• 13 Weeks
• Varies
• Bay St. George Campus

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This program offers training in the safe and effective operation of tandem trucks and tractor trailer units. Some of the duties include:

1. Perform preventive maintenance, defensive driving, and fuel conservation
2. Deliver cargo and materials
3. Interpret and communicate instructions through dispatch
4. Maintain a truck log and keep records of transported materials
5. Clean, inspect and service vehicle
6. Perform trailer operations and demonstrate defensive driving skills
7. Perform pre, post and on route inspections

The program also offers certification in the Transportation of Dangerous Goods (TDG), Air Brakes (9A), WHMIS, First Aid, Powerline Hazards and Professional Driver Improvement Course (PDIC). There will be classroom, yard, off and on route and highway training with low learner to instructor ratios. This program offers a three week (90 hour) work placement.

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

OUTCOMES
1. Demonstrate defensive driving techniques, proper economical vehicle operation, and emergency procedures.
2. Demonstrate knowledge of types of trucks, power trains, engines, drive lines, brake systems, tires and trailers.
3. Demonstrate techniques to drive on course roads, through town and on the Trans Canada Highway.
4. Demonstrate knowledge of proper freight handling procedures and methods of preparing and handling documentation connected with transfers of cargo and monies.
5. Demonstrate safe work practices and personal protection.

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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.

5. Drivers License and Medical
   i. Hold a valid Newfoundland and Labrador Class 5 driver’s licence.
   ii. Minimum of 2 years driving experience.
   iii. Provide a current Driving Abstract record showing no more than 4 demerit points.
   iv. Class 1 driver’s permit.
   v. Provide a satisfactory medical certificate in accordance with the Highway Traffic Act and meet the required vision standards. Certificate cannot be more than 6 months old.

6. Age Requirement
   Must be 18 years of age on or before course completion.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:

- Trucking companies
- Manufacturing and distribution companies
- Retail outlets
- Moving companies
## INDUSTRIAL TRADES
### Construction / Industrial Electrician

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. Some of the duties include:

- Read and interpret electrical, mechanical and architectural drawings
- Determine code specifications for writing layouts
- Cut, thread, bend, assemble and install conduits
- Position, maintain and install distribution and control equipment
- Safely test circuits to ensure integrity

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Analyze electrical theory and its application to lighting, power and control equipment.
4. Interpret instructions given in plans and specifications pertaining to electrical installations.
5. Demonstrate problem solving skills involving electrical systems.
6. Conduct trouble shooting to maintain electrical systems and equipment.

### EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:

- Residential electrical companies
- Industrial electrical companies
- Mining
- Pulp and Paper
- Oil and gas

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

1. **High School**
   - High School Graduation

2. **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

3. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate

### 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.

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**CERTIFICATE**

- RED SEAL CERTIFICATION
- 34 Weeks
- Varies

Bay St. George, Bonavista, Burin, Happy Valley-Goose Bay, Prince Phillip Drive, and Seal Cove Campuses

**COURSES**

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**OUTCOMES**

1. Demonstrate safe work practices and personal protection.
2. Develop menus.
3. Practice and maintain sanitary standards.
4. Develop production procedures.

**ENTRANCE REQUIREMENTS**

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

1. High School  
High School Graduation

2.  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

3. Comprehensive Arts and Science (CAS) Trades  
Comprehensive Arts and Science (Trades) Certificate

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:

- Hotels
- Restaurants
- Catering firms
- Cafeterias
- Health care institutions
- Specialty food outlets
- Work camps
INDUSTRIAL TRADES

Hairstylist

Male and female hairstylists cut and style hair to suit their clients face and lifestyle. Some of the duties include:

- Cut, trim, color, wave and style hair, wigs and hairpieces
- Shave, trim and shape beards and moustaches
- Suggest appropriate hairstyles
- Maintain supplies and equipment
- Self-educate on new hairstyles and fashions

**Note:** This program may not be suitable for persons with allergies and/or respiratory problems. Anyone with either of these conditions should check with a doctor to determine medical suitability.

**OUTCOMES**

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Demonstrate the skills required to style, cut and color hair.
4. Prepare clients for services.
5. Perform reception duties.

**ENTRANCE REQUIREMENTS**

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

1. **High School**
   High School Graduation

2. **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

3. **Comprehensive Arts and Science (CAS) Trades**
   Comprehensive Arts and Science (Trades) Certificate

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 work in the following areas:

- Hair salons
- Hair shows
- Sales representative

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### COURSES

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### 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. 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
3. Comprehensive Arts and Science (CAS) Trades
   - Comprehensive Arts and Science (Trades) Certificate
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:

- Repair shops
- Maintenance companies
- Transportation companies
- Construction companies
CERTIFICATE
• 21 Weeks
• Varies
• Bay St. George, and Placentia Campuses

COURSES

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OUTCOMES
1. Demonstrate knowledge of machine capabilities and industry expectations.
2. Develop servicing procedures and techniques to maximize the life span of construction equipment.
3. Demonstrate skills in basic machine maneuvering, control and operation in work simulated projects.
4. Demonstrate knowledge of standards for road construction as well as other municipal projects.
5. Demonstrate safe work practices and personal protection.

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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. 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.

Note: Learners must provide a valid medical certificate in accordance with the Highway Traffic Act and meet the require vision standards. Certificate cannot be more than six months old.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
- General contractors
- Paving companies
- Pipeline companies
- Logging
- Mining
- Landscaping

INDUSTRIAL TRADES

Heavy Equipment Operator

This program provides training in the safe and effective operation of Heavy Duty Earth Moving Equipment. Some of the duties include:
- Explore the operation of heavy equipment
- Perform preventative maintenance
- Develop skills necessary to become proficient in the use of the following heavy equipment

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

Note: Learners must provide a valid medical certificate in accordance with the Highway Traffic Act and meet the require vision standards. Certificate cannot be more than six months old.
CERTIFICATE
• 47 Weeks
• Varies
• Carbonear Campus

INDUSTRIAL TRADES
Heritage Carpentry

The Heritage Carpentry program was developed to train carpenters to work on heritage restoration projects. Some of the duties include:
- Perform contemporary construction technique
- Revitalize traditional skills for wood framed buildings
- Explore architectural styles for Atlantic Canada and Quebec
- Read and interpret blueprints, drawings and sketches
- Calculate requirements and specifications
- Prepare layouts on conformance to building codes
- Use measuring tools
- Cut, shape and assemble and join materials
- Build and install foundations, floor beams, subfloors walls and roof systems
- Install doors, stairs, moldings and hardware trims

Although the program has a heritage orientation, it is fully articulated with the Red Seal Carpenter program and learners may continue on to complete their apprenticeship and become a journeyperson Carpenter.

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret drawings and specifications.
4. Solve problems and keep a construction project on schedule.
5. Use various types of scaffolding.
6. Apply architectural styles of Atlantic Canada and Quebec in construction.

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

1. High School
High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
Comprehensive Arts and Science (Trades) Certificate

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:
- General contracting
- Custom woodworking shops
- Contractors specializing in heritage carpentry

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*Indicates Heritage Carpentry courses
CERTIFICATE
• RED SEAL CERTIFICATION
• 34 Weeks
• September
• Baie Verte, Corner Brook, Happy Valley-Goose Bay, Labrador West, and Placentia Campuses

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<td>MW1480</td>
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<td>MW2210</td>
<td>Prime Movers I</td>
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<td>MW2230</td>
<td>Vibration Analysis</td>
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The Industrial Mechanic (Millwright) program offers the training required to become a mechanic for stationary industrial machinery. Some of the duties include:

- Read and interpret diagram, schematics and service manuals
- Operate rigging equipment and dollies to move equipment
- Fit, align, attach and connect: bearings, gears, shafts, motors, couplings and belts
- Test, align and adjust equipment
- Perform predictive and operational maintenance
- Employ vibration analysis
- Service and repair hydraulic, pneumatic and programmable logic controls
- Perform tack welds

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret drawings, plans, and be able to layout and develop projects according to specifications.
4. Perform assigned tasks following quality and production standards required in industry.
5. Plan for installation and maintenance of components and systems.

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

1. High School
   High School Graduation
2. 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
3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
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 work in the following areas:
- Mining
- Forestry
- Oil and gas
- Private companies
- Manufacturing
- Government maintenance departments
## Instrumentation and Control Technician

Instrumentation involves automation in the production of various commodities. Complex process control and measurement systems such as those found in the oil and gas industry, chemical plants, food processing operations, and the pulp and paper industry require sensitive and accurate instruments. Some of the duties include:

- Repair, maintain, calibrate, adjust and install industrial measuring and controlling instrumentation
- Ensure plant machinery is safe and operating correctly
- Regulate water flow and air quality
- Monitor and calibrate instruments
- Read and interpret circuit diagrams, blueprints and schematics
- Inspect, test, diagnose faults
- Write maintenance reports
- Repair, calibrate components and instruments
- Perform schedule preventative maintenance
- Observe safe repair procedures according to regulated standards

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Interpret drawings, codes, standards and government regulations.
3. Use tools and measuring equipment.
5. Use and maintain analyzers
6. Use and maintain various types of field mounted equipment.

### ENTRANCE REQUIREMENTS

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

1. **High School**
   - High School Graduation
   - 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
2. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate
3. **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
- Hydro Power Generation
- Mining, Petrochemical, and Natural Gas
- Industrial and Commercial Manufacturing
- Industrial Construction
- Industrial Instrument Servicing
CERTIFICATE

* RED SEAL CERTIFICATION
This program is offered through a dual campus delivery model, approximately 70% at Prince Philip Drive in St. John’s and 30% (practical) in Placentia. Transportation to and from Placentia from St. John’s will be provided.

- One Year
- October
- Prince Phillip Drive Campus

COURSES

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Block 4 Advanced Level

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OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Interpret specifications, charts, drawings or sample parts to determine the machining operation required.
3. Select workplace materials.
4. Calculate dimensions and tolerances, and prepare sketches if necessary.
5. Set up and operate tools.

ENTRANCE REQUIREMENTS

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

1. High School
   High School Graduation

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

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   ii. Science 3101, 3102, 3103

4. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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

EMPLOYMENT OPPORTUNITIES

Graduates may find employment in the following areas:

- Manufacturing
- Mining
- Aviation
- Machine shops
- Pulp and Paper
- Private shops

INDUSTRIAL TRADES

Machinist

The Machinist program is designed to train individuals in the knowledge, skills, and experience necessary to set up and operate precision metal cutting and grinding machines such as lathes, milling machines, drills, shapers, boring mills and grinders. A variety of equipment is used to manufacture, install, operate, adjust and repair machine tools and other machines in common use. Duties of a machinist include: study specifications, charts, drawings or sample parts to determine the machining operation to be performed, calculate dimensions and tolerances, and prepare working sketches if necessary, set up and operate tools, which may be computer numerically controlled, to perform precision machining operations. Work could either be in job shops or production jobs. In job shops, you will make a wide variety of repair parts for different types of machinery and industrial equipment in different situations. In production shops, you will produce parts using mass production methods including CNC machining and other tools.

OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Interpret specifications, charts, drawings or sample parts to determine the machining operation required.
3. Select workplace materials.
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5. Set up and operate tools.

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   Comprehensive Arts and Science (Trades) Certificate

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   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:

- Manufacturing
- Mining
- Aviation
- Machine shops
- Pulp and Paper
- Private shops
**CERTIFICATE**  
• 34 Weeks  
• September  
• Burin Campus

### COURSES

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<td>Gas Metal Arc Welding (GMAW) Fillet Weld Flat and Horizontal Positions – Mild Steel</td>
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<td>Oxy-Fuel Cutting, Welding, Heating and Gouging</td>
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**INDUSTRIAL TRADES**  
**Metal Fabricator (Fitter)**  
This program is designed to prepare you for employment opportunities in the field of Structural Fitting. Metal fabricators make and repair parts used in the construction of buildings, bridges, tanks, towers, boilers, pressure vessels and other structures and products. Some of the duties include:

- Layout, cut and fabricate structural steel
- Interpret engineering drawings and blueprints
- Plan and sequence tasks
- Construct patterns and templates
- Rig, hoist and move materials
- Tack weld, bolt, and rivet components
- Install fabricated components

**OUTCOMES**

1. Demonstrate safe work practices and personal protection.
2. Interpret sketches, shop and fabrication drawings.
3. Use and maintain tools.
4. Prepare work area and equipment schedule.
5. Prepare final products for finish.

**ENTRANCE REQUIREMENTS**

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

1. **High School**  
   High School Graduation

2. **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

3. **Comprehensive Arts and Science (CAS) Trades**  
   Comprehensive Arts and Science (Trades) Certificate

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:

- Ironworking
- Manufacturing
- Heavy equipment
- Construction
- Mining
- Oil and Gas
- Aviation
- Ship building
- Welding shops

---

**OUTCOMES**

1. Demonstrate safe work practices and personal protection.
2. Interpret sketches, shop and fabrication drawings.
3. Use and maintain tools.
4. Prepare work area and equipment schedule.
5. Prepare final products for finish.

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Graduates may find employment in the following areas:

- Ironworking
- Manufacturing
- Heavy equipment
- Construction
- Mining
- Oil and Gas
- Aviation
- Ship building
- Welding shops
## INDUSTRIAL TRADES

### Mining Technician

Mining is a growing, ever changing industry that requires individuals to be trained in safely operating and maintaining mine/mill equipment. The Mining Technician functions as part of a mining team. Some of the duties include:

- Operate and maintain production equipment
- Read and interpret diagrams, schematics and service manuals
- Operate rigging equipment and dollies to move equipment
- Fit, align, attach and connect: bearings, gears, shafts, motors, couplings and belts
- Test, align and adjust equipment
- Perform predictive and operational maintenance
- Employ vibration analysis
- Service and repair hydraulic, pneumatic and programmable logic controls
- Perform tack welds
- Apply mineral processing and mining processes

Mining Technician graduates will receive an Industrial Mechanic (Millwright) certificate, a Mining Technician diploma, and credit for the completion of Block II of IM-Millwright. Graduates will be eligible to receive a Certificate for Entry Level Industrial Mechanic-Millwright after semester four, and a Mining Technician Diploma for completion of semester five.

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret drawings, plans, and be able to layout and develop projects according to specifications.
4. Perform assigned tasks following quality and production standards required in industry.
5. Plan for installation and maintenance of components and systems.
6. Apply technical skills learned in an industrial environment during a work term.
7. Evaluate Mining and Mineral processes.
8. Perform heavy equipment operations in a mine environment through simulation.

### ENTRANCE REQUIREMENTS

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

1. **High School**
   - High School Graduation

### DIPLOMA

- **Two Years**
- **September**
- **Labrador West Campus**

### COURSES

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* Learners who complete the requirements of WT1520 (Work Term) will be eligible to be exempt from OT1190 (Workplace Exposure).

** Courses required for completion of Entry Level Industrial Mechanic-Millwright with a 70% minimum pass mark.

*** Courses required for Block II of Entry Level Industrial Mechanic-Millwright with a 70% minimum pass mark.
INDUSTRIAL TRADES
Mobile Crane Operator

This program exposes you to the safe and efficient operation of Mobile Cranes. Some of the duties include:
- Become proficient in the use of 50 ton Lattice Boom Crawler, 30 Rough Terrain and 18 ton Boom Truck
- Perform safe operations and routine maintenance for mobile cranes
- Proficiently assemble and disassemble mobile cranes

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Assess site hazards.
3. Operate equipment safely.
4. Recognize and evaluate conditions which are potentially hazardous to safe machine operation.
5. Interpret and apply load chart and related documentation.
6. Interpret and apply visual and audio communication.

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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
Graduates may find employment in the following area:
- Construction
- Industrial
- Mining
- Cargo
- Railways
CERTIFICATE
• RED SEAL CERTIFICATION
• 34 Weeks
• September
• Prince Phillip Drive Campus

COURSES

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<td>AB1732</td>
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<tr>
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<td>Damage Analysis and Estimating Costs</td>
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OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use tools and equipment.
3. Determine the type of paint; plan refinishing system; remove, prepare, seal and mask; apply coatings to vehicle.
4. Demonstrate correct use of chemicals within the shop environment.
5. Compute cost estimates for completing repairs.
6. Manage customer needs, complaints, questions and special challenges.

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

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High School Graduation

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   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

3. Comprehensive Arts and Science (CAS) Trades
Comprehensive Arts and Science (Trades) Certificate

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:
• Garages
• Service Stations
Non-Destructive Testing Technician

Non-Destructive Testing Technician graduates are employed to accurately test items for potential flaws/failures using the following NDT test methods: Liquid Penetrant Inspection, Magnetic Particle Inspection, Ultrasonic Testing and Radiography Testing.

The program will prepare you to write the National Exams that are required by the Canadian General Standards Board.

Some of the duties include:
• Employ accurate testing inspection methods on materials and equipment
• Test using magnetic particle inspection, liquid penetrant inspection, ultrasonic testing and radiography testing

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:
3. The Canadian General Standards Board exam fees are not included in tuition/supply fees.

SUBJECT DESCRIPTIONS:
Magnetic particle Inspection (MPI) trains students to use small magnetic particles (i.e. iron filings) to detect flaws in components. For this method to be used the component must be made of ferromagnetic material such as iron, nickel, cobalt, or some of their alloys.

Liquid Penetrant Inspection (LPi) trains students to recognize surface flaws in components that appear as a result of capillary action. Flaws become apparent when a colored or fluorescent dye bleeds out of the component to reveal a crack in its surface.

Ultrasonic Testing (UT) trains students to use high frequency sound energy to conduct examinations and make measurements in materials to determine surface or internal cracks or flaws in the materials.

Radiography Testing (RT) trains students to send radioactive energy through a material enabling a negative (Photo) to be produced for that material illustrating internal flaws or cracks.

OUTCOMES
1. Perform Liquid Penetrant Inspection.
2. Perform Magnetic Particle Inspection.
3. Carry out Ultrasonic Inspection.
4. Carry out Radiographic Inspection.
5. Demonstrate knowledge of Quality Assurance, Control Documentation and Reporting Systems for various industrial sectors.
6. Develop attitudes conducive to the successful application of skills on the job.
7. Develop an awareness and concern for good safety practices in the work place.
8. Develop academic skills and knowledge in mathematics, communications and science.
9. Distinguish among various properties of metals with respect to their impact on NDT methods.

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

1. High School
High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
Comprehensive Arts and Science (Trades) Certificate

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.

LABORATORY
Time will be split between practical applications and the classroom throughout the program to assist the trainees in developing self-confidence/skills to carry out Non-Destructive testing certification exams.

EMPLOYMENT OPPORTUNITIES
Graduates may find employment in the following areas:
• Oil and Gas
• Construction
• Aerospace
• Nuclear
• Automotive
• Welding and Steel Production
CERTIFICATE
• RED SEAL CERTIFICATION
• 34 Weeks
• September
• Bonavista Campus

COURSES

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<td>PF3130</td>
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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 for plumbing systems
- Examine water supply networks, waste and drainage systems
- Install, repair and maintain domestic, commercial or industrial fixtures and systems
- Connect, bead, thread and join pipes
- Leak test utilizing air and water

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Plan work activity.
3. Use and maintain hand and portable power tools and equipment.
4. Interpret plans and specifications and prepare layouts and working drawings.
5. Prepare components and fixtures according to specifications and assume responsibility for the end product.

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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:
- Construction contractors
- Plumbing repair shops
### COURSES

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<td>PW1411</td>
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<td>PW1421</td>
<td>Air Conditioning Systems</td>
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<tr>
<td>PW1441</td>
<td>Power Engineering and Industrial Applications</td>
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### 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. Utilize essential skill training to enhance their career experience and opportunities.
5. Gain knowledge of control documentation and reporting systems in Power Engineering environments.
6. Prepare for a provincial examination in Power Engineering 4th Class part “A” and “B”.

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Power Engineers, Power Plant or Boiler Operators or Operating, Steam and Stationary Engineers, are some of the descriptions that summarize a technically skilled professional who may be 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.

This program is intended to prepare the learner for entrance into the Power Engineering field at the 4th class level. Upon successful completion of the program requirements a learner is eligible to write an Inter Provincial Certification Exam for Power Engineer 4th Class that is conducted by the Department of Advanced Education and Skills (DAES). Graduates of the program will receive a 6 month credit from the Department of Advanced Education and Skills towards firing time as a 4th Class Power Engineer. Learners will be required to complete the practical requirements and utilize the Practicum Guide endorsed by the DAES.

This program includes a 4-week on the job training experience that learners will be able to complete the practical requirements. Graduates of the program are expected to work in varying temperatures, environments, confined spaces, may be required to perform climbing, use hand and power tools, various specialty testers, and perform preventative maintenance of the equipment.

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

1. **High School**
   - High School Graduation

2. **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

3. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate

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:
- Municipal buildings
- Provincial buildings
- Federal buildings
- Health care institutions
- Educational institutions
- Manufacturing
- Mining
- Fishery
- Pulp and Paper
- Oil and Gas

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### COURSES

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### INDUSTRIAL TRADES

**Powerline Technician (Operating)**

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. Some of the duties include:

- Erect and maintain steel, wood or concrete poles, towers and guy wires
- Install, maintain and repair overhead and underground powerlines, cables, insulators, lighting arrestors and switches
- Repair or replace transformers and street lighting
- Splice, solder and insulate conductors
- Diagnose power distribution and transmission faults

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Interpret occupational documents.
3. Use and maintain tools and equipment.
4. Use and maintain electrical distribution systems and their equipment.

### ENTRANCE REQUIREMENTS

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

1. **High School**
   - Graduation
   - Some post secondary courses

2. **Adult Basic Education**
   - 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
     - ii. Science

3. **Comprehensive Arts and Science (CAS) Trades**
   - Arts and Science (Trades) Certificate

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.

5. **Class 5 License**
   - Applicants must have a valid Class 5 license prior to entry into the Powerline Technician Program. Motor Vehicle Regulations require persons to have a valid Class 5 for a minimum of 24 months prior to applying for a Class 3 license.

### EMPLOYMENT OPPORTUNITIES

Graduates may find employment in the following areas:

- Utility companies
- Private contractors
CERTIFICATE
• 30 Weeks
• September
• Placentia Campus

COURSES

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<td>OR2110</td>
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<td>Solvent Extraction and Cadmium Removal</td>
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<td>Water Effluent and Residue Treatment</td>
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Block 2  Hydrometallurgical Refining

Block 2  Mineral Processing

An apprentice is required to complete one of the Block 2’s listed. (Subject to the industry s/he is employed.)

Block 3  Common Advanced Courses

INDUSTRIAL TRADES

Process Operator

Process Operator training is essential for safe, incident-free start-up and operation of plant facilities. The process operator emphasizes the safety requirements and hazards associated with material being processed. The operator will also deal with environmental issues. The program will focus on consistent and efficient plant operation and the importance of meeting both production requirements and product quality specifications while operating the process as efficiently as possible. Some of the duties include:

- Monitor, review and control plant operations
- Maintain production record variables for volume, yield and consumption
- Sample and test chemicals
- Recommend corrective production procedures

OBJECTIVES:
1. Demonstrate positive attitudes and behaviors.
2. Evaluate and control plant operations.
3. Create and maintain adequate records as required.
4. Demonstrate safe work practices and personal protection.

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

1. High School
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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:
- Mineral Processing
- Oil and Gas
- Pulp and Paper
- Food and Beverage Production
- Natural Gas Processing
### INDUSTRIAL TRADES

#### Refrigeration & Air Conditioning Mechanic

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.
- Service, repair and replace refrigeration and air conditioning piping and components.
- Interpret blueprints and verbal instruction.
- Assemble and install refrigeration and air conditioning components.
- Install and calibrate controls.
- Perform leak detection, record keeping and performance test.

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Interpret mechanical and architectural drawings, acts, codes, standards, legislation, and service and operating manuals.
3. Use and maintain tools and equipment.
4. Arrange for refrigeration and air conditioning installation and maintenance.

### ENTRANCE REQUIREMENTS

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

1. **High School**
   - High School Graduation
   - Adult Basic Education (Level III) Graduation with 2. Adult Basic Education
   - General College Profile (or Business Related College Profile or Degree and Technical Profile). It is strongly recommended that courses include the following.

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

### EMPLOYMENT OPPORTUNITIES

Graduates will find employment in the following areas:

- Installation companies
- Service companies

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### COURSES

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<td>Understanding, Interpreting and Troubleshooting Wiring Diagrams</td>
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DIPLOMA
• Two Years
• September
• Grand Falls-Windsor Campus

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.

OUTCOMES:
1. Practice safety work procedures.
2. Manage a renovation project as it relates to core and sub trade practices.
3. Demonstrate problem solving skills, good work practices, strong communication skills, and utilize practical hands on experience gained directly from job placements in industry.
4. Perform with carpenter skills and knowledge in construction techniques related to building sciences, green technologies, waste management, estimation/budgeting and scheduling.
5. Solve problems with associated trades in the areas of electrical, HVAC, plumbing, painting, plastering, masonry and drafting.

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

1. High School
   High School Graduation

2. Adult Basic Education (ABE)
   Adult Basic Education (Level III) Graduation with General College Profile (or Business Related College Profile). It is strongly recommended that courses include the following:
   i. Mathematics MA3107A, MA3107B, MA3107C
   ii. Science 3101, 3102, 3103

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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 will find employment in the following areas:
• General contractors
• Commercial contractors
• Private contractors

INDUSTRIAL TRADES
Renovation Technician

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.

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2. Manage a renovation project as it relates to core and sub trade practices.
3. Demonstrate problem solving skills, good work practices, strong communication skills, and utilize practical hands on experience gained directly from job placements in industry.
4. Perform with carpenter skills and knowledge in construction techniques related to building sciences, green technologies, waste management, estimation/budgeting and scheduling.
5. Solve problems with associated trades in the areas of electrical, HVAC, plumbing, painting, plastering, masonry and drafting.
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 place 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, trowelng and roof drainage systems. Some of the duties include:

1. Lay out, measure and mark dimensions and reference lines
2. Utilize drawings and templates
3. Use laser and plasma cutting equipment, numerical controlled and computerized equipment
4. Cut, drill, punch, bend and shape sheet metal using hand and power shears and snips
5. Fasten components using bolts, screws, cement, rivets, adhesives, solder, or welding
6. Install and repair sheet metal products in accordance with building code requirements

OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools, machines and equipment.
3. Use scaffolds, hoists, slings and ladders.
4. Determine project requirements.
5. Develop patterns using various methods.
6. Fabricate parts using hand tools, power tools, and power operated equipment.

ENTRANCE REQUIREMENTS

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

1. High School
   High School Graduation
2. 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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3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate
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 the following types of companies:

- Plumbing, Heating and Air Conditioning Companies
- Steel Producers
- Metal Producers
- Exterior Construction firms
CERTIFICATE
• RED SEAL CERTIFICATION
• 36 Weeks
• Varies
• Bay St. George Campus

COURSES

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Block 2 | Advanced Level |
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| SR2200 | Snowmobile Servicing Fundamentals | 60 |
| SR2300 | Motorcycle & ATV Servicing Fundamentals | 60 |
| SR2400 | Marine Equipment Servicing Fundamentals | 75 |

Block 3 | Advanced Level |
| SR1500 | Small Equipment Transmissions | 120 |
| SR2110 | Motorcycle & ATV Troubleshooting & Repair | 120 |

Block 4 | Advanced Level |
| SR2110 | Lawn & Garden Equipment Troubleshooting & Repair | 80 |
| SR2210 | Snowmobile Troubleshooting & Repair | 80 |
| SR2410 | Marine Equipment Troubleshooting & Repair | 80 |

The Small Equipment Service Technician program is designed to enable you to learn the knowledge and skills associated with the repair and maintenance of recreational equipment such as snowmobiles, ATVs, motorcycles, personal water craft and outboard motors, and fuel-powered tools such as chainsaws and lawnmowers. Some of the duties include:

- Review and interpret work orders and technical manuals
- Inspect engines, motors and other mechanical components using test devices
- Diagnose and isolate faults
- Repair or replace components using hand tools
- Performance test repaired equipment
- Perform scheduled maintenance and advise customers on repair cost

OUTCOMES
1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Interpret schematics and wiring diagrams.
4. Identify major engine components.
5. Maintain and repair lubricant systems.

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

1. High School
High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
Comprehensive Arts and Science (Trades) Certificate

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:
- Rental dealerships
- Recreational dealerships
- Independent garages
- Service stations
- Repair shops
- Manufacturing companies
COURSES

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OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Plan lifts.
4. Hoist loads.
5. 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
   High School Graduation

2. 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

3. Comprehensive Arts and Science (CAS) Trades
   Comprehensive Arts and Science (Trades) Certificate

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:
- Construction contractors
- Manufacturing Plants
- Utility Companies
- Oil and Gas Refineries
- Industrial Plants
- Pulp and Paper Mills
- Thermal and Steam Generating Plants
- Chemical Plants
## INDUSTRIAL TRADES

### Truck And Transport Mechanic

This program is designed to provide you with the skills and knowledge required for employment in the field of truck and transport mechanic. Some of your duties include:

- Interpret work orders and technical manuals
- Maintain, clean and lubricate equipment
- Diagnose faults and malfunctions
- Adjust, repair or replace defective parts
- Performance test repaired equipment
- Follow manufacturers’ specifications and legislated regulations

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Use and maintain tools and equipment.
3. Follow work orders, prepare estimates, and interpret technical manuals.
4. Write service reports; diagnose problems and record service analysis.

### ENTRANCE REQUIREMENTS

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

1. **High School**
   - High School Graduation
   - One of the following academic criteria:
     - Eligibility for admission requires the applicant to meet
     - Employment opportunities
   - Graduates will find employment in the following areas:
     - Construction companies
     - Transportation companies
     - Maintenance companies
     - Repair shops
   - 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.

### 2. 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

### 3. Comprehensive Arts and Science (CAS) Trades

Comprehensive Arts and Science (Trades) Certificate

### 4. Mature Student Status

Graduates will find employment in the following areas:

- Repair shops
- Maintenance companies
- Transportation companies
- Construction companies
# INDUSTRIAL TRADES

## Welder

Welders join and server metals in beams, girders, vessels, piping and other metal components make metal parts used in construction and manufacturing plants, and weld parts, tools, machines and equipment. Some of the duties are:

- Develop patterns in given layouts, blueprints and work orders
- Clean and check for defects and shape component parts
- Examine blueprints and work orders
- Perform welding of various metals

### OUTCOMES

1. Demonstrate safe work practices and personal protection.
2. Interpret drawings and develop layout patterns for projects.
3. Use and maintain tools and equipment.
4. Follow required codes, specifications and standards.
5. Employ various welding methods using SMAW, GMAW, FCAW and GTAW

### ENTRANCE REQUIREMENTS

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

1. **High School**
   - High School Graduation
   - 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
2. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate
3. **Mature Student Status**
   - Applicants who do not meet the educational prerequisites, are 19 years of age or older and have been out of school for at least one year, may be considered on an individual basis under the Mature Student Clause.

### EMPLOYMENT OPPORTUNITIES

Graduates will find employment in the following areas:

- Machine shops
- Fabrication plants
- Garages
- Production plants
- Shipyard
- Oil and Gas

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<td>WD1871</td>
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<td>WD1801</td>
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<td>FCAW - Fillets and Grooves</td>
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<td>Air Carbon Arc</td>
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<td>WD1641</td>
<td>GTAW - Setup</td>
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<td>WD1650</td>
<td>Metallurgy, Expansion and Contraction</td>
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<td>WD1691</td>
<td>Quality Control</td>
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<td>WD1651</td>
<td>Plasma Arc Cutting and Gouging</td>
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<td>ND1120</td>
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<td>ND1130</td>
<td>Materials and Process</td>
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<td>Introduction to Apprenticeship</td>
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**INDUSTRIAL TRADES**

**Welder / Metal Fabricator (Fitter)**

Welder/Metal Fabricator contains components of the Welder, Metal Fabricator and Non-Destructive Testing Technician programs. At the end of the two years you will have two entry level certificates. Some of the duties include:

- Develop patterns or follow directions in given layouts, blueprints and work orders
- Clean and check for defects and shape component parts
- Examine blueprints and work orders
- Perform weld of various metals using different processes in accordance to codes and standards
- Layout, cut and fabricate structural steel
- Study engineering drawings and blueprints
- Plan the sequence of tasks required to efficiently cut metal
- Rig, hoist and move materials
- Tack weld, bolt and rivet components
- Install fabricated components in the final product
- Assemble and fit metal sections and plates to form complete units or sub units
- Employ accurate testing inspection methods on materials and equipment
- Test using magnetic particle inspection, liquid penetrant inspection

**OUTCOMES**

1. Demonstrate safe work practices and personal protection.
2. Interpret shop drawings, sketches and fabrication drawings.
3. Follow required codes, specifications and standards.
4. Prepare work area and equipment schedule.
5. Prepare final products for finish.
6. Demonstrate welds using SMAW, GMAW, FCAW and GTAW.
7. Perform liquid penetrant and magnetic particle non-destructive testing inspections.
8. Perform welds of various metals.

**ENTRANCE REQUIREMENTS**

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

1. **High School**
   - High School Graduation

2. **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

3. **Comprehensive Arts and Science (CAS) Trades**
   - Comprehensive Arts and Science (Trades) Certificate

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 will find employment in the following areas:

- Machine shops
- Fabrication plants
- Production plants
- Oil and Gas
- Mining
- Ship Yards
COURSE DESCRIPTIONS
AC1100 - Bookkeeping I • Bookkeeping I is a study of the fundamental principles, the mechanics of bookkeeping, including the recording, classifying, and summarizing of financial data for a service business. The course also includes the control of cash and petty cash, banking procedures, and completing the accounting cycle. This course emphasizes the national accounting standards (private enterprise Generally Accepted Accounting Principles - GAAP).

AC1260 - Financial Accounting I • This course introduces the student to accounting concepts, including the basics of the double-entry accounting system including adjusting entries, financial statement preparation, accounting for payroll, accounting for a merchandising company and the basics of the internal control of cash. This course emphasizes the national accounting standards (private enterprise GAAP in Canada).

AC1350 - Income Tax • The student is introduced to the basic principles of the Canadian Income Tax. Emphasis is placed on computing taxable income and taxes payable for individuals and corporations. The course includes basic tax planning ideas for individuals and corporations.

Prerequisite(s): AC2220

AC2100 - Bookkeeping II • Bookkeeping II involves the application of accounts receivable and accounts payable, and the study and application of the generally accepted accounting principles within merchandising firms. The course involves using special journals, end-of-the-year adjustments for depreciation, accruals, bad debts, closing entries, financial statements, and payroll. This course emphasizes the national accounting standards (private enterprise Generally Accepted Accounting Principles - GAAP).

Prerequisite(s): AC1100

AC2220 - Intermediate Financial Accounting I • This course is designed to build on the knowledge the student obtained in Financial Accounting I and II. Its focus is on the asset side of the Balance Sheet, providing an in-depth study of current assets, property, plant and equipment, and intangible assets. The recognition and measurement of revenues and expenses are also covered.

Prerequisite(s): AC2260, MC1241

AC2230 - Computerized Accounting I • This course introduces the student to the elements of integrated computerized financial accounting software (such as Simply Accounting by Sage). The student will explore integrated software systems, general ledger, payables, receivables, payroll and inventory. The student will have the opportunity to apply the skills through various applications.

Prerequisite(s): AC2100 and EP2310; or AC1260 and MC1240

AC2231 - Computerized Accounting II • This course completes the study of computerized accounting systems started in AC2230 Computerized Accounting I. The student will learn how to use computerized accounting software to: perform bank reconciliation, enter foreign currency transactions, perform project allocations, budgeting, departmental accounting, timing and billing. Furthermore the student will learn to use spreadsheets for analyzing, planning and decision making for intermediate accounting and managerial accounting content through the use of comprehensive case studies and simulations.

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.

Prerequisite(s): AC2260, MC1241

AC2260 - Financial Accounting II • This course introduces students to the principles and procedures needed to account for long-term assets (including capital assets, intangible assets, and investments), liabilities, and equities, and to the concepts of financial reporting and decision making for both partnerships and corporations. In this course the student will explore property, plant, equipment and intangibles; current and long-term liabilities; partnership accounting; corporate organization; transactions and reporting; bonds as liabilities and investments; equity investments; statement of cash flows; and analyzing financial statements. This course emphasizes the national accounting standards (private enterprise GAAP).

Prerequisite(s): AC1260

AC2280 - Accounting • The course is designed to provide a working knowledge of the fundamentals of financial and managerial accounting that can be useful for the graduate industrial technologist in understanding, interpreting, and preparing financial statements. Basic principles of managerial accounting including cost behaviour, cost systems, and cost-volume relationships are investigated. The focus will be on the extraction of relevant information from accounting data and how this information can be used in engineering decision-making and budget preparation.

AC2340 - Principles of Auditing • This course is designed to provide an introduction to auditing for accounting students who do not have significant auditing or accounting experience. The course is a practical guide to auditing theory and practice.

Prerequisite(s): AC2220

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

AC2540 - Oil & Gas Production Accounting • This course will provide students with an overview of the development of the oil and gas industry, from inception to modern practices and from the reservoir to refining, and the role which the production accountant plays in accounting for oil and gas. This will enable students to understand and communicate effectively with professionals in the oil and gas industry and to understand and apply the accounting concepts.

Prerequisite(s): AC2260

AC2600 - Managerial Accounting for Human Resource Managers • This course is designed to introduce the student to the accounting techniques needed by management for planning and control, decision making, performance evaluation and preparation of internal reports. The student will explore basic concepts of managerial accounting; departmental, project and program cost allocation; budgeting and control; control through standard costs; flexible budgets and overhead analysis; control of decentralized operations; and pricing of products and services. The student will have the opportunity to apply their skills through practical learning.

Prerequisite(s): AC2260

AC2320 - Intermediate Financial Accounting II • This course is a continuation of the study of the principles and procedures covered in the previous semester of Intermediate Financial Accounting. The content presents an in-depth study of the liabilities and owner's equity side of the balance sheet as well as the Statement of Changes in Financial Position; there is also an in-depth study of the Statement of Cash Flows.

Prerequisite(s): AC2220

AC2350 - Managerial Accounting II • This course is designed to build on the knowledge gained in Managerial Accounting I by having the student apply their previous knowledge of cost behaviour to specialized areas of cost and management accounting including budgeting, standard costing, relevant cost analysis, pricing of products and services, and capital budgeting.

Prerequisite(s): AC2250

AC2351 - Managerial Accounting III • Managerial accounting involves the internal generation, communication, and interpretation of information for both operational and strategic decision-making purposes. This course is designed to provide the student with knowledge in accounting techniques required by management for planning and control, decision making, performance evaluation and preparation of internal reports. Increased focus on how modern cost management and cost performance
AC3260 - Payroll and Commodity Taxes
This course is designed to provide the student with a working knowledge of the various payroll taxes and provide the students with the ability to complete annual F-1, F-5, summary reports etc., while utilizing software packages. The course prepares the student to account for and file required reports for commodity taxes including GST and PST. Also, the course prepares the student for processing F-1 general and F-2 corporate tax returns utilizing a software package.
Prerequisite(s): AC2260

AC3270 - Payroll and Commodity Taxes
This course introduces the basic principles of payroll administration and commodity taxes. The student will be able to account for and file the required reports for payroll and commodity taxes.
Prerequisite(s): AC2230

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

AE1260 - Power Electronics
This course introduces the student to solid state electronics for industrial power supplies and On/Off control of high current devices.

AE2210 - Power Control Devices
This course provides a study of two-terminal devices, Schottky diodes, Tunnel diodes, IR Emitters, LCDs, Solar Cells, Thermistors, 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

AE2231 - Analog Electronics II
This course provides further study of transistor amplifiers, with emphasis on frequency response characteristics. Also included is a study of oscillators and power control using thyristors.
Prerequisite(s): AE2330

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, ET1200

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

AE2321 - Analog Electronics
This course provides a study of analog applications of transistors beyond amplifiers, with emphasis on analysis, design and troubleshooting. Also included is a study of power supply regulators, as well as thyristors and power control circuits.
Prerequisite(s): AE2320

AE2330 - Analog Electronics I
This course will include the description, operation, and application of simple electronic components and their use in linear power supplies, small signal amplifiers, and power amplifiers. An introduction to frequency response is also covered. Design and troubleshooting skills are emphasized.
Co-requisite(s): MP2140

AE2400 - Problem Solving & Troubleshooting
This course acquaints the learner with a model of the process of human problem solving. Learners will be encouraged to analyze and improve their abilities by approaching new types of problems using both simulation and traditional methods.
Prerequisite(s): AE2301 or AE2321, CI1100 or CI1110, DP2400 or DP2410

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

AE3130 - Active Circuit Applications
The purpose of this course is to provide the learner with an understanding of the operation of integrated circuit amplifier circuits, active filters, and switching power supplies. The theory covered in class will be applied and validated during the laboratory periods.
Prerequisite(s): AE2330

AE3300 - Industrial Electronics I
This course is designed to provide students with an introduction to the field of industrial electronics.
Prerequisite(s): AE3100, AE2210

AE3301 - Process Control
This course will introduce the student to process control and its applications in industrial settings.
Prerequisite(s): AE3300, MP2400

AF1130 - Aircraft Structures and Materials (M, E, S)
This M, E, 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.

AF1220 - Aircraft Structures- Wood, Tubular and Fabric
This course provides an introduction into inspection and repair procedures of aircraft wood, tubular and fabric structures. This includes their design, construction and the stresses affecting them.

AF1240 - Aircraft Structural Repair (M, E, S)
This M, E, & S course will provide the student with the knowledge and skill in the principles of aircraft structural repair using different types of sheet metal forming processes, materials, fasteners, and equipment.
Prerequisite(s): AF1130

AF1250 - Aircraft Stress Skin Repair
This course will develop the students knowledge and skill to repair damaged stressed skin structures by patching and spot welding.
Prerequisite(s): AF1201

AF1270 - Composite Materials (M, S)
This M and S course will provide the students with the knowledge to identify composite materials and the skill inspect them for damage and perform an effective repair when required.

AF1280 - Stress Skin Repair or Modification (M, E)
This M and E course will provide the student with the skill to perform a stress skin repair or antenna installation on an aircraft. The course will involve damage assessment, designing and installing a stress skin repair or installing an antenna including an internal reinforcement doubler. The student will perform corrosion preventing processes and install the stress skin repair or antenna as per standard practices.
Prerequisite(s): AF1240
Co-requisite(s): GM1570

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 manufacturers specifications.

**AF1500 - Windshields, Windows and Lenses**
This course will provide the students with the knowledge and skill to identify types of aircraft windshields, windows and lenses, inspect them for damage and evaluate whether repair or replacement is required, manufacture and install windows to fit aircraft structure and perform proper maintenance and repairs to windshields, windows and lenses.

**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 personal health and wellness; human body systems will be examined, as well careers in Health care and related fields.

**AH1100 - Aboriginal History**
Aboriginal History will provide an Aboriginal perspective of the historical and cultural diversity of Canada's Aboriginal peoples with special emphasis on Aboriginal peoples of Newfoundland and Labrador, from pre-contact to Confederation to contemporary challenges. This course is open to Aboriginal and non-Aboriginal students.

**AJ1700 - Architectural Conservation**
An overview of Canadian architectural tradition will be studied through the examination of building styles and traditional building techniques as practiced regionally across Canada. Students will explore conservation principles and their practical applications as dictated by international conservation charters.

**Prerequisite(s):** GM1101, GM1120, GM1130

**AJ1710 - Building Science**
This course provides a study of heat loss and sound transference. Learners understanding of theories and practice will be developed through instruction, demonstration and project applications. Major topics include: safety measures, heat loss and insulation, sound transference.

**AJ2700 - Restoration Joinery I**
This introductory course teaches learners the theory and practice of repairing, reproducing and installing architectural millwork. Learners will produce and install quality millwork, using traditional and contemporary techniques. Major topics include: safety measures, period moldings, trim carpentry techniques, reproducing wood moldings, molding repair, baseboard installation, crown molding installation, door trims, window trims.

**Prerequisite(s):** AJ1110

**AJ2710 - Restoration Joinery II**
This second-level course continues to teach learners the theory and practice of repairing, reproducing and installing architectural millwork. Learners will produce and install quality millwork, using traditional and contemporary techniques. Emphasis will be placed upon traditional window and door construction. Major topics include: safety measures, traditional window construction, traditional door construction.

**Prerequisite(s):** AJ2700

**AJ2720 - Restoration Joinery III**
This third-level course continues to teach learners the theory and practice of repairing, reproducing and installing architectural millwork. Learners will produce and install quality millwork, using traditional and contemporary techniques. Emphasis will be placed upon designing and building stairs and steps. Major topics include: stair casing theory, basement stairs and exterior steps.

**Prerequisite(s):** AJ2710

**AM1100 - Math Essentials**
This course requires knowledge of general mathematical concepts and processes to enable trades persons to function in the institutional setting by developing numeracy skills required for technical courses. This math course should also provide a foundation for experiential learning through knowledge of math relating to on-the-job skills and practices. This course is transferable between entry level training blocks in various trade programs.

**AM1110 - Math Fundamentals**
This course provides theoretical and practical orientation to core math skills in a trade specific environment. This course is not transferable between entry level training blocks in various trade programs, and is not eligible for Prior Learning Assessment.

**AP1101 - Introduction To Apprenticeship**
Most trades programs require the learner to enter into an apprenticeship program. This course will provide an introduction to how to become a registered apprentice, the steps to complete an apprenticeship program and the responsibilities of the various stakeholders. Practical projects will introduce the learner to the Provincial Apprenticeship and Trades Certification, the Red Seal web sites. These sites provide essential information on the apprenticeship program.

**AS2120 - Aircraft Hydraulics and Pneumatics Systems (M)**
This M course will enable learners to perform inspections, troubleshooting principles, repair and maintenance on Aircraft Hydraulic and Pneumatic Systems. Aircraft Plumbing will also be covered.

**Co-requisite(s):** AS2125

**AS2125 - Aircraft Hydraulics And Pneumatics Systems (M, E)**
This M and E course is designed to provide the learner with basic knowledge of pneumatics, control valves, air conditioning systems design and function. Aircraft plumbing systems will also be covered.

**Co-requisite(s):** AS2120

**AS2160 - Aircraft Landing Gear Systems (M)**
This course will provide the learner to perform inspection, trouble shooting, repair and maintenance on Aircraft Landing Gear and related systems.

**Prerequisite(s):** AS2125

**AS2165 - Aircraft Landing Gear Systems (M, E)**
This is an M and E course to provide learners with the knowledge of aircraft landing gear and associated systems, their design and operation.

**Prerequisite(s):** AS2125

**Co-requisite(s):** AS2160

**AS2220 - Aerodynamics and Flight Controls (M)**
This M course is designed to provide the learner with basic knowledge to perform, inspect, install and adjust aircraft flight controls. Installation of float and ski systems will be covered in depth.

**Prerequisite(s):** GM1120, GM1130

**Co-requisite(s):** AS2225

**AS2225 - Aerodynamics and Flight Controls (M, E)**
This M and E course is designed to provide the learner with basic knowledge of aerodynamic forces, flight characteristics and aircraft design. Inspection and adjustments of flight controls is covered in depth.

**Prerequisite(s):** GM1120, GM1130

**Co-requisite(s):** AS2220

**AS2330 - Aircraft Systems (M)**
This M course is designed to provide the learner with basic task utilizing the operation of aircraft support, environmental and safety systems.

**Prerequisite(s):** PT1120, GM1120, GM1130

**Co-requisite(s):** AS2335

**AS2335 - Aircraft Systems (M, E)**
This M and E course is designed to provide the learner with basic knowledge of the operation of aircraft support, environmental and safety systems.

**Prerequisite(s):** PT1120, GM1120, GM1130

**Co-requisite(s):** AS2330

**AS2410 - Propellers and Systems (M)**
This M only course will provide the basic knowledge of aircraft propeller systems and maintenance.

**Prerequisite(s):** PT1115

**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):** PT1115

**Co-requisite(s):** AS2410

**AS2520 - Reciprocating Engine Fuel Metering (M)**
This M course will provide the learner with the knowledge of aircraft fuel systems, fuel metering systems, their design, components, function, operation, and maintenance.

**Prerequisite(s):** PT1115

**AT1100 - Adventure Tourism Industry •**
This course provides an in-depth study of the adventure tourism industry with special emphasis on....
Newfoundland and Labrador. Terminology will be defined, the economic impact of tourism will be discussed, tourism motivators will be identified, and the present structure and organization of the industry will be examined. Newfoundland and Labrador’s tourism marketing position, competition, potential consumer markets, and sales techniques will be identified and discussed.

AT1150 - Water Safety
This course introduces students to basic water safety techniques. Students will acquire theoretical knowledge and personal skill in small craft safety and rescue techniques for canoeing and sea kayaking. Life Saving Society of Canada “AquaAdults” swimming techniques will be introduced and practiced. It is expected that students will gain the knowledge and skills necessary to participate safely in water related activities.
Prerequisite(s): Students should be able to swim moderately upon entrance into the program and will be required to fulfill the requirements of the water safety course by the end of Semester 2

AT1220 - Heritage Interpretation I
This course will provide an opportunity to develop a variety of visual, verbal and written interpretive techniques and skills enabling students to better describe the environment to students.
Prerequisite(s): CM1460

AT1221 - Heritage Interpretation II
This course aims to further the students knowledge, confidence and skill in all aspects of minimum impact travel, wilderness navigation and group leadership; ability to lead a group safely and efficiently in a 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 packing, and food preparation in a wilderness setting; ability to select, use, care for and store personal and group wilderness travel equipment.
Prerequisite(s): AT1220, CS1600, any two of: BL2210, BL2230, GE1120, BL1120

AT1300 - Ethics for Sustainable Tourism •
This course begins with a definition of sustainable development, its origin and its implementation home and abroad. The relationship of sustainable development and tourism will be examined and topics such as ecotourism’s role 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.

AT1400 - Winter Travel I
Students will acquire theoretical knowledge and personal skill in classic technique, skating technique, and hill man oeuvres. Equipment requirements and selection, sizing, care, and waxing will also be discussed. Students will be introduced to snow shoeing.

AT1401 - Winter Travel II
Students will acquire theoretical knowledge and personal skill in Nordic (backcountry) skiing techniques. Hill man oeuvres on backcountry equipment will be taught. Ski equipment and accessories will be discussed. A wilderness expedition will further develop backcountry ski technique; winter camping and wilderness survival skills; weather observation skills; avalanche awareness; route selection; map & compass use; and leadership skills. Students will be introduced to snowmobile travel.
Prerequisite(s): AT1400, CS1600

AT1520 - Canoeing
Students will acquire theoretical knowledge and personal skill in: strokes, manoeuvres, and rescue on flat and moving water; theory and practice of canoeing instruction; and canoe tripping leadership skills. Students will have an opportunity to be tested for the Canadian Recreational Canoe Association (CRCA) certification for both flat water and moving water (levels 1 & 2). Students who choose to be tested for certification will be charged a certification fee.
Prerequisite(s): CS1600

AT1550 - Wilderness Travel
This course is designed to teach the student the necessary skills required to travel in any wilderness setting.

AT1560 - Canoeing
Students will acquire theoretical knowledge and personal skill in: strokes, manoeuvres, and rescue on flat and moving water; theory and practice of canoeing instruction; and canoe tripping leadership skills. Students will have an opportunity to be tested for Paddle Canada Lake Water Canoeing and Canoe Tripping. Students who choose to be tested for certification will be charged a certification fee.
Prerequisite(s): CS1600, AT1150, Wilderness First Aid Certification with CPR/AED

AT1620 - Survival Training
This course will expose the student to the necessary skills required to travel and survive in a wilderness setting. It will cover practical and theoretical information on trip preparation, factors that affect survival, survival techniques, practical field knowledge related to first aid, cold weather camping, site reconnaissance, GPS, map and photo interpretation, compass using and emergency procedures.

AT2520 - Sea Kayaking
Students will acquire theoretical knowledge and personal skill in strokes, manoeuvres, and rescue procedures. The evolution of the kayak and the sport, plus the equipment that is available, will be discussed. Kayak tripping leadership skills will be introduced. Students will be assessed by Paddle Canada Sea Kayaking Level 1.
Prerequisite(s): AT1510, CS1600

AV1320 - Aircraft Communications Equipment (M, E)
This is an M and E introductory course designed to give the learner the basic concepts of all communication systems used on aircraft. Emergency Locator Transmitters (ELTs) 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 I (M, E)
This M and E course provides learners with information about basic navigation principles and terms used in aircraft systems. Installation practices regarding bonding, panel layouts, antenna installations and remote mounting equipment are discussed. The course will also include descriptions of some common navigation system types.

AV1510 - Navigation System Installation (E)
This E course is designed to give the learners practical experience in installing Avionic Navigation equipment on aircraft. Learners will gain procedural knowledge of the steps involved in designing, and implementing systems installation procedures, including associated regulatory supporting documentation.
Prerequisite(s): PE1120, GM1320
Co-requisite(s): AV1500

AV2170 - Pulse Navigation Systems (M, E)
This M and E course will provide the learners 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 learners practical experience in installing integrated avionics navigation equipment on aircraft. It involves designing a system that will share a navigation display. Learners will gain procedural knowledge of the steps involved in designing and implementing systems installation procedures including associated regulatory supporting documentation. Learners 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 learners 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 learner to inspect, install, troubleshoot, repair and Maintain electronic communication radio equipment and their systems. A
programs. Students will be expected to complete Health Sciences, Natural Resources and/or University programs. are required for success in various Biology courses in achieve better understanding of basic concepts that combination of both Introductory Biology I and II will understand of Biology at the macroscopic level. A have successfully passed Introductory Biology I.

BL1100 - Biology
This is an introductory course in the first semester of the Natural Resources cluster designed to prepare the student for further biology related studies. Emphasis in labs and field trips will be directed to gaining an appreciation of natural ecosystems and associated life processes.

BL1110 - 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 MUNs 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 and includes the following subject areas: eukaryotic cell division, heterotrophic Protists, fungi, and animals. The animal discussions include an introduction to animal structure, tissue, 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.

BL1170 - Principles of Biology II
This course is an introductory course in the first semester of the Natural Resources cluster designed to prepare the student for further biology related studies. Emphasis in labs and field trips will be directed to gaining an appreciation of natural ecosystems and associated life processes.

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 MUNs 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, tissue, 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.

BL1250 - 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.

BL1251 - Auto Flight Theory (M)
This M only course will have the learners ramp test the auto pilot system in a fixed wing aircraft including the associated flight director modes.

BL1252 - Auto Flight Theory (E)
This E only course will have the learners trouble shoot various auto pilot defects on the colleges aircraft.

BL1253 - Auto Flight Troubleshooting (E)
This E only course will have the learners trouble shoot various auto pilot defects on the colleges aircraft.

BL1300 - Anatomy & Physiology
This 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.

BL1340 - Anatomy And Physiology
This course is an introduction to the structure of the human body and its systems.

BL1400 - Fish and Wildlife Biology
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 procaryotes; a study of DNA and RNA and protein synthesis; an introductory study of gene regulation in procaryotes and eucaryotes; the principles of hereditary; and introductory study of biotechnology; a study of tissues; an introduction to anatomical and medical terminology, and a study of the skeletal system.

Prerequisite(s): BL1500

BL1501 - Biology
This is a course in human anatomy and physiology with emphasis being placed on the following systems: cardiovascular, lymphatic, respiratory, endocrine, nervous and sensory organs, and related medical terminology.

Prerequisite(s): BL1500

BL1600 - Human Biology
This course will provide an introduction to human biology, including a review of biochemistry, cellular biology, and human tissues. The primary emphasis will be an overview of the anatomy and physiology of the body systems, and it is designed to provide a foundation to help the student understand the variety of medical tests and/or drugs available for diagnosis and treatment. This course will also include an introduction to microbiology.

BL1700 - Ornithology
This is an introductory course in ornithology. The course will focus on species which inhabit insular Newfoundland. Students will learn to recognize by sight and sound songbirds, raptors, seabirds, waterfowl and others. The ecology and behaviour of selected species will be discussed, as well as introductory avian anatomy and physiology.

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 sub tidal environment; beaches and sand dunes; estuaries and 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 components.

Prerequisite(s): Successful completion of Semester 3.

BL2340 - Cardiopulmonary Pathophysiology
This course will enable the student to describe the pathophysiologic manifestations, clinical signs, symptoms, and therapeutic management of the major cardiopulmonary diseases, in order to facilitate the development of treatment protocols.

Prerequisite(s): Successful completion of Semester 3.

BL2400 - Microbiology
This course consists of an introduction to the principles and methods of microbiology. Selected topics include the classification, structure, staining and cultivation of bacteria, bacterial physiology and genetics, control of micro-organisms, host-parasite relationships and diagnostic immunology.

Prerequisite(s): Completion of all third semester courses

BL2410 - Microbiology
An introductory course covering the basic aspects of microbiology with emphasis on the role of micro-organisms 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 microorganisms 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 will provide learners with the knowledge and skills to address questions regarding public safety, fire safety, plumbing systems and ventilation systems. Learners will use various codes and standards to solve design problems for new and existing structures.

Prerequisite(s): DR1220

Co-requisite(s): DR1240

BU2230 - HVAC
This course is designed to introduce the learner to building heating, ventilation and air conditioning (HVAC) systems. The course begins with an introduction to the HVAC systems classification and is intended to provide the learner with the knowledge and skills to address questions regarding public safety, fire safety, plumbing systems and ventilation systems. Design concepts and procedures are studied, with direct applications in the preparation and production of electrical systems drawings.

Prerequisite(s): PH1101, ET1101

Co-requisite(s): DR3110

BU2250 - Electrical Systems
This course is comprised of lectures and labs designed to introduce the learner to building electrical systems. Design concepts and procedures are studied, with direct applications in the preparation and production of electrical systems drawings.

Prerequisite(s): PH1101, ET1101

Co-requisite(s): DR3110

BU2260 - Plumbing Systems
Plumbing Systems is a course designed to introduce learners to terminology and design methods used in the plumbing and fire protection aspects of building services. The course begins with an introduction to hydraulics, piping and the associated terminology, and the advances to areas of water supply and distribution, sanitary drainage, storm drainage and fire protection. The course includes a detailed study of code requirements and the preparation of computerized working drawings.

Prerequisite(s): PH1101, DR3111

Co-requisite(s): CG1800

BU2270 - HVAC
This course is designed to introduce the learner to building heating, ventilation and air conditioning (HVAC) systems. The course begins with an introduction to the HVAC systems classification and is intended to provide the learner with the knowledge and skills to address questions regarding public safety, fire safety, plumbing systems and ventilation systems. Design concepts and procedures are studied, with direct applications in the preparation and production of electrical systems drawings.

Prerequisite(s): PH1101, ET1101

Co-requisite(s): DR3110
CA2501 - Structural Design
A study of the application of principles of mechanics to the solution of problems commonly met within the field of engineering practice. Procedures in problem solving, codes, specifications and standards, loads and structural systems, properties of materials, tension members, axially loaded compression members, effective length, design of beams and connections, use of steel handbook, and roof trusses are major topics to be covered.
Prerequisite(s): CA2100

CA2110 - Structures I
This is the second of two courses in the application of fundamental design concepts in structural design using Canadian design standards. This course prepares the learner to analyse and design basic steel and timber structural elements. Topics include: material properties, design of tension and compression members, beams, columns, and connections.
Prerequisite(s): CF2531

CA2111 - Structures II
This is the second of two courses in the application of fundamental design concepts in structural design using Canadian design standards. This course prepares the learner to analyse and design basic cast-in-place reinforced concrete structural elements including beams and one-way slabs, columns, foundations and walls. Flexural behavior, shear, compression, serviceability and bond and anchorage requirements are considered.
Prerequisite(s): CA2110

CA2210 - Urban Development I
This course is designed to provide the learner with an opportunity to apply learned theory to the design of an actual subdivision for given lot sizes, dwelling standards, zoning, and other internal and external site factors. This course also includes identification of local design regulations and the preparation of computerized drawings.
Prerequisite(s): SU1210

CA2231 - Urban Development II
This course is designed to provide the learner with an understanding of municipal water and wastewater distribution systems. Water quality parameters and piping network systems will be examined in detail. This course also includes identification of local design regulations and the preparation of computerized drawings.
Prerequisite(s): WA1230

CA2500 - Highway Technology
This course enables the learner to plan and design highway transportation systems according to local standards. Learners will be required to complete a major highway design project utilizing design software. The project comprises of route selection, design of horizontal and vertical alignment, including super-elevation, preparation of plans, profiles and cross-sections, calculation of earthwork quantities, and environmental protection measures using current civil design software.
Prerequisite(s): CB2420
Co-requisite(s): WA1160

CA2810 - Soils & Foundations I
This is an introductory course in soil mechanics in which learners will acquire knowledge about the various types of soils used in the design and construction of civil projects. Identification, classification, and formation of soils will be addressed and learners will become familiar with the standard tests and procedures used to evaluate soils and their engineering properties.
Prerequisite(s): CF2711

CA2811 - Soils & Foundations II
This course will build on the knowledge acquired in CA2810 and will introduce the learner to the field of Geotechnical Design. Learners will be required to determine and analyse the effects of soil properties on bearing capacity, slope stability of soils, consolidation, and settlement. Aspects covered include: shallow foundations, pile capacity and design, foundation settlement, and slope stability.
Prerequisite(s): CA2810

CA2900 - Municipal Engineering
An introduction to zoning bylaws and zoning in general. Criteria are examined for the design and construction of roads, curb and sidewalks, width or right of way, storm and sanitary sewer collecting systems, water distribution systems and layout of utilities (electrical, phone, cable TV). Lectures are supplemented by labs in which related problems, field trips, and the actual lot layout, design of roads, water mains, sanitary sewer and storm sewer for an urban subdivision is carried out.
Prerequisite(s): SU1321

CB2420 - Construction Methods
Construction methods will help learners to estimate construction costs and productivity rates of various types of equipment and apply previous knowledge from economics to Heavy Equipment. The course will deal with methods and operations utilized in heavy and marine construction, with emphasis placed on specifying the best equipment or process for the situation.
Prerequisite(s): MA1101

CD2100 - Community Development
This is an introductory course to the field of community development. It introduces students to the major concepts, principles and challenges of the community development field. The course allows students to take a critical look at conventional approaches to development, as well as theoretical influences on current community development practice. Learners explore the diversity of roles and occupations within the field and become aware of ethical considerations and skills that are needed to successfully work in the field.

CD2300 - Community Economic Development
This is an introductory course to the field of community economic development. The course covers the major concepts and essential elements used in the field of community economic development, and explains why a new approach to development is necessary. It introduces the history of community economic development in Newfoundland and Labrador, looks at successful examples elsewhere, and explores structures and strategies for facilitating community economic development. The course then introduces students to the methods of community planning and how they may be applied to the community economic development process.
CE2400 - Managing in the VNP Sector
This course is an introduction to financing and managing in community economic development enterprises. It introduces various strategies for building community economies and for financing community economic development ventures. It examines the challenges of managing human and natural resources in the voluntary sector and non-profit (VNP) sector and introduces financial concepts and management instruments.

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 learner should have a reasonable understanding of topics such as how Local Area Networks function, the role of IP addressing, and how data is reliably transported between hosts across the internet. Learners will also be expected to construct a simple network and apply appropriate IP addresses and to configure connectivity between a wireless LAN client and a wireless access point.

CE2250 - Electronic Analog Communications
This is an intermediate level electronics course designed to provide students with an introduction to the area of analog communications.
Prerequisite(s): MA2100, AE2300

CE2270 - Electronic Analog Communications
This is an intermediate level electronics course designed to provide students with an introduction to the signals and processes of analog communications.
Prerequisite(s): MA1101
Co-requisite(s): AE2320, MA2100

CE2280 - Modulating and Encoding
This course is designed to provide learners with the foundation in the fundamental methods of modulating or encoding analog and digital signals for transmission over a modern communication system. The methods for the transmission of analog and digital signals across an analog medium are covered as well as the methods for transmitting analog and digital signals across a baseband digital medium. The impact of noise on these methods is also discussed.
Prerequisite(s): MA1101, C11110

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 ET2100; AE2100

CE2730 - RF Transmission & Antennas
This course provides a comprehensive study of the basic principles of electromagnetic wave propagation as they are applied to transmission lines, waveguides, and antennas with applications in wired and wireless communications systems.
Prerequisite(s): MA1101, MP2140 or ET2100 or ET1151

CE2810 - Industrial Communication Systems
This specialized course introduces the student to industrial communication protocols and systems for process control and automation systems in an industrial environment. The lab component is designed to enhance the theoretical lecture component by implementing communication methods, networks, and troubleshooting skills.
Prerequisite(s): CE1210

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

CE2940 - HMI & SCADA
The course provides learners with a comprehensive analysis of Human Machine Interface (HMI) development using commercial HMI software for monitoring and controlling automated machines and processes from custom designed graphical user interfaces. Learners will be introduced to the Supervisory Control and Data Acquisition (SCADA) system for process and utility industries.
Prerequisite(s): CE2810

CE3110 - Wireless Communications Systems
This is an advanced electronic communications course focusing on modern wireless communication systems. It provides a background in radio wave propagation. A systems-level approach to the architecture, design, and operation of VHF and UHF mobile radio systems, cellular telephone systems, microwave and satellite-based communications systems is presented.
Prerequisite(s): CE2280, CE2730

CE3210 - Carrier Networks
This course provides the learner with an in depth understanding of how carrier transport networks operate at Layers 1 and 2. Learners will examine how traffic channels are constructed and the protocols used to manage the flow of traffic across a carrier network. Learners will combine theory with practical examples.
Prerequisite(s): CE2280

CE3270 - Wans & Sp Operations
This course provides the learner with an understanding of Wide Area Networks (WANs) and Service Provider (SP) Operations. In this course learners will complete their studies of Internet Protocol (IP) networking and examine the relationship between IP traffic and the carrier networks that transport data. Learners will gain practical experience with SP Operations such as network management and provisioning WAN services.
Prerequisite(s): CE3380, CE3370

CE3370 - Switching & L2 Security
This course continues the learners education in IP-based communications. In this course the learner will explore concepts in LAN design, the operation and configuration of LAN switches, virtual Local Area Networks (VLANs), spanning tree protocol (STP), and LAN switch security.
Prerequisite(s): CE1210

CE3380 - IP Routing, IPv6 & Security
This course continues the learners education in Internet Protocol (IP)-based communications with the concept of IP routing. In this course the learner will be introduced to packet switching and explore various methods of packet switching including static and dynamic routing; routing within private networks; routing between private networks; IPv6, and IP routing security.
Prerequisite(s): CE1210

CE3430 - Network Cabling
This course will provide the learner with the necessary skills to design and implement high performance cabling systems. The performance level of the system determines the type of cabling and hardware to be used, the rules to be followed and the type of testing and documentation required to certify performance and trouble-shoot the installation. This course focuses on the physical layer of the OSI Network Model and includes the electrical and mechanical aspects of interfacing to the transmission medium and impact on performance they may have. This includes analysis of copper cabling, fibre optics, connectors and interconnection hardware, electrical code requirements for installation, performance certification and documentation best practices.
Prerequisite(s): CE1210

CE3600 - Digital Communications I
This course provides a background in the mathematical theory and fundamentals of operation of digital and data communications.
Prerequisite(s): CE2250, DP2400

CE3610 - Digital Communications II
This course focuses on the mathematical theory and fundamentals of operation of digital and data network communications.
Prerequisite(s): CE3600

CE3650 - Unified Communications
This course provides learners with understanding of unified communications topics such as Voice over IP. Topics include unified communications components and technologies, PSTN architecture, VoIP, protocols and signaling, and unified communications deployment. Upon completion of this course learners may choose to pursue professional certification such as CCNA Voice.
Prerequisite(s): CE3380, CE3370

CF1100 - Materials & Processes
The purpose of this course is to provide learners with knowledge of the behaviour and characteristics of common engineering materials and an understanding of basic industrial processes. This is to enable learners to select suitable materials and fabrication methods for the design and manufacture of parts to ensure successful service.

CF1101 - Materials & Processes
The purpose of this course is to familiarize the learner with production and fabrication processes and practices used in the industrial environment. The course provides an overview 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

**CF2510 - Strength of Materials**

This course is an introduction to the analysis of stresses in load bearing structural members. Concepts of stress, strain and elasticity are applied to elementary systems of normal, shear and bending stress in order to give students an understanding of one of the fundamental building blocks upon which all engineering designs are based.

**Prerequisite(s):** MA1101, PH1101

**CF2511 - Strength of Materials**

This second Strength of Materials course expands on previously studied concepts of simple stress, strain and elasticity, and provides a basic for elementary calculations in engineering design.

**Prerequisite(s):** CF2510

**CF2530 - Strength of Materials I**

This is the first of two courses in the study of statics and strength of materials in preparation for further study in design-oriented courses. Learners will learn to analyze forces in structures and basic requirements to ensure safety of structures under applied loads. Major topics include: statics, basic concepts in strength of materials, centroids and moments of inertia, design properties of materials, direct stress, deformation and design, and torsional shear stress and torsional deformation. Laboratories include tensile, compression and shear testing of various engineering materials.

**Prerequisite(s):** MA1101, PH1101

**CF2531 - Strength of Materials II**

This is the second of two courses in the study of statics and strength of materials in preparation for further study in design-oriented courses. Learners will learn to calculate and plot shearing forces and bending moments in beams, analyze shear stress, bending stress and deflections in statically determinate and statically indeterminate beams, analyze stresses in columns and connections, calculate combined stress in members subject to bending and direct stresses, and calculate stresses in welded and bolted connections. Laboratories include testing of beams, columns and connections under applied loads.

**Prerequisite(s):** CF2530

**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

**CF2560 - Strength Of Materials**

This course is an introduction to the analysis of stresses in load bearing structural members. Concepts of stress, strain and elasticity are applied to elementary systems of normal, shear and bending stress in order to give students an understanding of one of the fundamental building blocks upon which all engineering designs are based.

**Prerequisite(s):** MA1101, PH1101

**CF2610 - Building Materials I**

This course examines the properties, limitations, and application of wood and concrete as it relates to building design and construction.

**Prerequisite(s):** CF2610

**CF2611 - Building Materials II**

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

**Prerequisite(s):** CF2610

**CF2720 - Materials and Testing I**

This course has been designed to provide the learner with a working and hands on knowledge of common building materials, so that he/she will be better able to function as a technologist in the building and heavy construction field. This course will provide the learner with a basic knowledge of the characteristics, uses and application of common construction materials and the general construction specifications associated with each material. Materials such as concrete and aggregate; their properties, components, uses, production and construction methods will be studied. Basic theory will be supplemented by laboratory testing of aggregate and concrete done to CSA standard. Emphasis will be placed on decision-making for the proper selection and use of the various components discussed in each material. Course work will be supplemented by field trips and in-shop demonstrations.

**Prerequisite(s):** CM1401, DR1220

**CF2721 - Materials and Testing II**

This course has been designed to provide the learner with the working and hands on knowledge of common building materials, so that he/she will be better able to function as a technologist in the building and heavy construction field. This course will be a continuation of CF2720, Materials and Testing I. It will provide the learner with a hands-on approach to the testing, selection, use and application of common building materials, such as asphalt and aggregate; and tested under laboratory conditions. Wherever possible, in lab work, will be supplemented with field trips, videos and guest lectures.

**Prerequisite(s):** CF2720

**CF3200 - Materials and Corrosion**

This course will introduce students to the physical and mechanical properties of materials commonly used in the chemical processing industries. It will examine the factors that promote the corrosion of these materials when used in industrial processes. Students will also examine a variety of means of controlling and monitoring corrosion and corrosion processes in chemical industries.

**Prerequisite(s):** CH1121

**CF3440 - Structural Design**

This course is an introduction to structural design and strength of materials. Emphasis is placed on calculations leading to the selection of structural members based on shear forces, bending moments, and deflection produced by static loads, with an application towards architecture and building construction.

**Prerequisite(s):** MA2100, PH1101

**CF3610 - Building Materials III**

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

**Prerequisite(s):** CF2611

**CG1200 - Health Care & Safety I**

This course serves as an introduction to the hospital environment, its organization and management. Students will be familiarized with the health care system of Canada. The application of safety in the hospital environment, with a special emphasis on the concepts of electrical safety.

**Prerequisite(s):** CG2710, CM2200

**Co-requisite(s):** CG3400

**CG1201 - Health Care & Safety II**

This course is a continuation of CG1200 and serves to familiarize the student with equipment control systems and procedures utilized by Biomedical Engineering Departments. The concepts of quality assurance as well as standards involved in the safe use of electricity in health care institutions will be addressed. Students will also become familiar with fire, biological and environmental safety issues as they relate to the hospital environment.

**Prerequisite(s):** CG1200, CM2200

**Co-requisite(s):** CG3401

**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):** FX1210

**CG1500 - Work Methods and Measurement**

This course is designed to introduce the student to the basics of time and motion study. It will provide a student with a basic understanding of time study techniques. It comprises various topics in predetermined 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

**CG1700 - Environmental Design**

This course will introduce learners to the fundamentals of architectural design with emphasis on applying basic architectural principles, conventions and sustainable building practices. It will also further develop the learner’s understanding of architectural practice.

**CG1800 - Building Site Development**

This is a two part course that teaches learners the requirements of building site development. The first section is an introduction to surveying while the second section deals with the actual site development. Knowledge of each major topic will be gained through both theory and practical work.
including field work.

Prerequisite(s): DR3111
Co-requisite(s): BU2260

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

CG2330 - Planning & Estimating I
This course is an introduction to the disciplines of cost estimating, project management, scheduling and planning for construction purposes.

Prerequisite(s): CB2420

CG2331 - Planning & Estimating II
This course is a continuation of CG2330 - Planning & Estimating I. Learners will use commercially available computer software to prepare construction cost estimates and schedules. This course will also provide the learner with the opportunity to apply technical material studied in earlier courses of the Civil Engineering Technology (Co-op) Program to the construction management process.

Prerequisite(s): CG2330

CG2320 - Procurement & Contract Administration
This course examines the fundamentals of economics, types of businesses, and the administrative process as it relates to design construction projects. It is designed to help learners understand their role in the economics and administration of the design and construction industry.

CG3320 - Estimating for Buildings
This course is designed to provide learners with a basic understanding of the various types of estimates commonly used in the building design and construction industry. This course addresses both elemental cost analysis and building construction estimating. Computer-generated spreadsheet applications are used.

Prerequisite(s): DR4110, BU2270

CG3400 - Engineering Management
This course is intended to familiarize the student with the role of management in industry. Topics covered include project representation and analysis using C.P.M. and P.E.R.T. as well as several methods of management decision-making with a mathematical approach. The course provides the basic methods used for project management and control. It gives an appreciation of the role of management in industry, as well as providing management techniques used in various applications of decision-making. Students are instructed in the use of project management software and they are enabled to identify business opportunities and acquire the skills necessary to set up and operate their own business.

Prerequisite(s): MA1101

CG3500 - Production Planning
This course analyzes the principles of production management by bringing together topics of planning and approaching them as an integrated production plan, interpreting various components such as master scheduling, resource planning, manufacturing control and flexible manufacturing.

Prerequisite(s): CG1500

CH1030 - Introductory Chemistry I
Introductory Chemistry I is a Comprehensive Arts and Science (CAS) Transition course. It is the first of two Chemistry courses designed to prepare students for entry into a number of technical programs at the College level as well as CAS Transfer: College-University. The purpose of this course is to give students an introduction to basic chemical principles and laboratory procedures.

Prerequisite(s): CG1500

CH1031 - Introductory Chemistry II
Introductory Chemistry II is a Comprehensive Arts and Science (CAS) Transition course. It is the second of two Chemistry courses designed to prepare students 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.

Prerequisite(s): CH1030

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.

Prerequisite(s): MA1101 or MUN Math 1000 or MA2100. A physics course would be helpful especially for students who did not take Physics in high school.

CH1140 - General Chemistry II
Transferable to MUN Chemistry 1011. This is a continuation of CH1135. This course will further develop the fundamental concepts of chemistry, with emphasis on physical properties of matter, intermolecular forces, molecular geometry and chemical bonding theory, rates of reaction, chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: physical properties of matter, molecular geometry, rates of reaction, chemical equilibrium, acid-based equilibria, precipitation equilibria, redox reactions and electrochemistry.

Prerequisite(s): CH1135 or MUN Chemistry 1010

CH1141 - General Chemistry II
Transferable to MUN Chemistry 1011. 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 visualization 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; enthalpy and free energy, electrochemistry, descriptive chemistry.

Prerequisite(s): CH1140 and MA1130 or MA2100, or MUN Chemistry 1050 and Mathematics 1000 or 1081.

CH1150 - Introductory Chemistry III
This course is designed to prepare students who have completed Introductory Chemistry II (or MUN Chemistry 1011), for second year Chemistry courses. It deals with the topics in greater depth, with emphasis

Available through Distributed Learning
Available through correspondence
on problem solving, as in Chemistry 1141. Introductory Chemistry III is transferable to MUN Chemistry 1031.

Prerequisite(s): CH1136 or MUN Chem 1011.

**CH1200 - Chemistry**
This is an introductory course in chemistry dealing with the fundamental laws of chemistry, the nature of matter and structure of the atom, the periodic table, chemical bonding, stoichiometry, and the physical states of matter and solutions. The quantitative aspects of chemistry are stressed.

**CH1201 - Chemistry**
This is a continuation of CH1200. Major topics include: the gas laws, oxidation-reduction, electrochemistry, chemical nomenclature, chemical kinetics, nuclear chemistry and chemical equilibrium. The quantitative aspects of chemistry are stressed.

**Prerequisite(s):** CH1200

**CH2200 - Chemistry**
This is a continuation of the second semester course. Major topics include various types of chemical equilibria such as gaseous equilibria, solubility equilibria, and acid/base equilibria. The quantitative aspects are stressed.

**Prerequisite(s):** CH1201

**CH2250 - Clinical Chemistry**
This course will introduce laboratory safety, basic laboratory techniques and skills, laboratory instrumentation and quality control procedures. This is then applied to the study of the theoretical and practical aspects of the analysis of the 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, and dissolved oxygen). Students are also exposed to environmental sampling and statistical treatment of data.

**Prerequisite(s):** CH1200

**CH2720 - Analytical Chemistry**
This is an introductory course in chemical analysis. It will introduce learners to the classical methods of quantitative chemical analysis such as gravimetry and titrimetry, as well as simple instrumental techniques used for field measurement (pH, colorimetry, conductivity, and dissolved oxygen). Students are also exposed to environmental sampling and statistical treatment of data.

**Prerequisite(s):** CH1201

**CH3450 - 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 to both laboratory and process.

**Prerequisite(s):** CH1211

**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

**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

**Prerequisite(s):** CH2340, CH2250

**CH3700 - Environmental Chemistry III**
This is the second of two courses dealing with the chemical interactions which occur in natural environments. The focus is on air and soil chemistry, and emphasis is placed on Organic Chemistry. The fundamental aspects of nomenclature, structure, properties, and reactions of organic compounds are discussed and applied to studying the sources and toxicity of environmentally important organic compounds.

**Prerequisite(s):** CH2700

**CH4510 - Clinical Chemistry**
This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.

**Prerequisite(s):** Successful completion of semester 8

**CI1100 - Electronic Instrumentation**
This is a practical course in which students become acquainted with the variety of laboratory and test equipment that could be encountered in a working environment. The course focuses on applications of the concepts learned.

**Prerequisite(s):** ET1101

**CI1110 - Signals & Measurements**
This course will introduce the learner to the fundamental concepts of signals and measurements. Learners in the course will learn how to identify different types of signals, select the appropriate test equipment, take measurements, and interpret and report results.

**Prerequisite(s):** ET1101

**CI1210 - Instrumentation Controls & Automation**
This course provides a comprehensive treatment of sensors and methods of measuring automated process variables. The learner will be introduced to the underlying concepts and operation of industrial measurement devices and control systems.

**Prerequisite(s):** ET2100

**CI1211 - 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 systems.

**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.

C11310 - Electrical/Electronic Fabrication Techniques
This is a practical electrical/electronics course for students entering the primary electrical / electronics technical intersession. This course enables the student to obtain practical knowledge in soldering, wiring, fabrication and proper use of test equipment as related to accepted procedures found in industry.
Prerequisite(s): ET1101

C11350 - Basic Process Automation
in this course the participants will run existing processes to determine the types of devices used to measure level, flow and other parameters within a plant and how the final control elements interact with the automation control system.

C11400 - 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 amplifiers; an explanation of digital fundamentals, including the binary number system, combinational logic, and sequential logic.
Prerequisite(s): ET1101

C11401 - Industrial Controls II
As industrial process technologists, graduates must understand how industrial controllers work. While they are not expected to maintain the industrial controllers, it is important that the learner 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. Also introduced are variable speed drive technologies, with an emphasis on variable frequency (AC) drives and applications. The learner applies the concepts learned to specific systems, processes and equipment found in manufacturing operations.
Prerequisite(s): CI1400 or CI1440; PE2430

C11440 - Process Controls
This course introduces the learner to the field of Industrial Process Control. Specific emphasis is placed on the analog and digital building blocks used in the various stages of a process control system. The underlying mathematical principles of process control will be investigated and applied to specific industrial processes.
Co-requisite(s): MA2100

C11520 - Process Analyzers I
This course will examine the role of chemical analyzers in monitoring and controlling industrial processes. Statistical principles will be applied to process analyzer systems and the validation of process analyzers. The operating principles of electrochemical analyzers will be studied and learners will learn to calibrate, install and troubleshoot these analyzers as well as perform routine maintenance on them. The operating principles of a variety of physical property analyzers will be studied and learners will perform routine calibration, maintenance and troubleshooting procedures on these analyzers. Factors affecting corrosion and the use of analyzers in the prevention and measurement of corrosion will also be studied.
Prerequisite(s): CH1121, CI2230

C12100 - Pressure and Level Measurement and Control
This is the second core instrumentation course designed to reinforce the basic instrumentation concepts previously covered. The various types of transmitters used to measure pressure and level will be covered in detail. The control section of the course will show how the transmitters are used in a control loop.
Prerequisite(s): CI1350

C12120 - Final Control Elements and Instrument Air Systems
This course focuses on the various types of control valves and damper operators as well as the auxiliary devices used to position and supply power to the actuator. The final section of the course covers how Instrument Air is produced for an industrial plant.
Prerequisite(s): CI1350

C12230 - Flow and Temperature Measurement and Control
This course develops further understanding of types of control strategies and introduces students to the principles and operation of flow and temperature control systems, with an introduction to cascade and feed forward control systems.
Prerequisite(s): CI1200

C12250 - Hydraulics for Instrumentation
This introductory course is designed to acquaint the learner with the design and operation of industrial hydraulic systems. It includes a review of the selection and integration of the components used to build and control hydraulic circuits. Operational control and troubleshooting of basic circuits is an integral component of the course.

C12300 - Advanced Control Strategies
This course covers advanced PID control strategies with an emphasis on boiler control.
Prerequisite(s): CI2230

C12520 - Process Control Operations
This course provides the learners 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”.
Prerequisite(s): CI1210

C12610 - 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 learner 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

C12620 - Process Optimization
This course introduces the learner 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 industrial operations.
Prerequisite(s): CI2520

C12820 - Process Control II (Level and Flow Measurement and Control)
This course provides an introduction to process measurement and control terminology. Students will be given the opportunity to control single phase flows and control level in various process loops.
Prerequisite(s): PH1101, ET1101

C13110 - Safety Shutdown and Machine Monitoring Systems
This course covers basic shutdown systems on boilers and then covers the safety shutdown systems found in the oil and gas industry. The course also introduces software that can be used for process and optimization.
Prerequisite(s): CI2300

C13200 - 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

C13400 - Biomedical Instrumentation I
This course will provide the students 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 or CI1110, AE2210, AE2400
Prerequisite(s): 

The purpose of this course is to familiarize the learner with the distributed control systems (DCS) and Safety Instrumented System (SIS) used by the processing industries. Learners will also learn Functional Block Diagram (FBD) programming language that is widely being used in DCS as well as Process Automation Systems (PAS).

Prerequisite(s): CE2810, CI2230

This course provides students with an overview of Canadian Criminal Justice System. The course gives students an understanding of the philosophies 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

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): None

This course introduces students to the mixing process, factors affecting mixing and 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

This course has been developed for aboriginal students using culturally relevant materials. The academic focus of this course will be the advancement of reading and writing skills. The writing process will be covered in detail, as will basic grammar and structural mechanics. To develop a variety of reading strategies, students will examine and interpret a number of culturally relevant texts, including informational, graphic, and literary texts (poetry, short fiction and a novel) written by aboriginal writers.

Prerequisite(s): CM1010
CM1012 - Communications III for Aboriginal Students
This course has been developed for aboriginal students using culturally relevant materials. Its focus will be the development of research paper writing and oral presentation skills. The emphasis will be upon the processes involved in the critical analysis of contemporary aboriginal culture, as well as the effective presentation of findings. Students will learn skills relevant to research, exposition and speaking publicly.
Prerequisite(s): CM1011

CM1020 - English I
English I is the first of three courses in English in the CAS Trades program. The intent of the course is to introduce reference skills, to develop fundamental reading skills, and to introduce fundamental writing skills. Regarding strategies to be covered include reading in context, skimming, and scanning.

CM1021 - English II
English II is the second of three courses in English in the CAS Trades program. Learners will continue to be introduced to fundamental writing skills including punctuation and mechanics and sentence and paragraph construction. In addition, this course will further develop reading and writing fundamentals, particularly as they relate to the trades. Learners will also be introduced to technical documents applicable to the trades field.
Prerequisite(s): CM1020

CM1022 - English III
English III is the third of three courses in English in the CAS Trades program. This course presents knowledge of the skills needed to communicate in the trades workplace. The importance of oral communications from a safety perspective will be emphasized.

CM1060 - Essential English I •
Essential English I is a Comprehensive Arts and Science (CAS) College Transition course. It is the first of two English courses designed to give students a solid foundation in writing skills and to prepare them for success in subsequent post-secondary studies. Through varied writing assignments and revisions, students will achieve a college level of proficiency in English. Students may also meet the admission requirements for CAS Transfer: College-University and other post-secondary programs through the successful completion of Essential English I and II.

CM1061 - Essential English II •
Essential English II is a Comprehensive Arts and Science (CAS) College Transition course. It is the second of two English courses designed to give students a solid foundation in writing skills and to prepare them for success in subsequent post-secondary studies. Through varied writing assignments, revisions and numerous grammar exercises, students will achieve a college level of proficiency in English. Students may also meet the admission requirements for CAS Transfer: College-University through the successful completion of this course.
Prerequisite(s): CM1060

CM1100 - Writing Fundamentals •
Writing Fundamentals is an introductory course designed to review writing fundamentals including grammar, punctuation, spelling, and usage. Students will apply principles of writing in sentence and paragraph construction.

CM1120 - Critical Reading And Writing I
This course is 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. This course is transferable to MUN English 1080 or 1000.
Prerequisite(s): Minimum of 60% in Language 3101 and a minimum of 60% in Thematic Literature 3201, Literary Heritage 3202, or English 3201 (to meet Memorial’s admission requirements)

CM1135 - Critical Reading And Writing II (Fiction)
This course is an introduction to such prose narrative forms as the novel, the novella, the story sequence, and the autobiography. The course continues the emphasis on critical reading and writing begun in CM1120: analyzing texts, framing and using questions, constructing essays, organizing paragraphs, conducting research, quoting and documenting, and revising and editing. This course is transferable to MUN English 1101 or English 1001.
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.

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.

CM1260 - Communications in Health Care
This course is designed to enable the student to communicate clearly, concisely and correctly in both written and oral forms in the health care setting. Emphasis is placed on medical documentation and oral communication with health care professionals, clients and families.

CM1370 - JM 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. Emphasis is on strategies of technical reporting, research techniques and organizational skills.

CM1401 - Technical Report Writing II •
This course is designed to help students formulate criteria for structuring informal and semi-formal reports. Various report formats will be examined with emphasis on statistical data analysis, documentation and illustration methods. Oral reporting techniques will be enhanced through problem-solving reports and the technical sales presentation.
Prerequisite(s): CM1400 or equivalent

CM1450 - Writing Fundamentals for the Workplace
This course is designed to introduce students to written communications in the workplace and provide...
considerable practice in constructing and editing effective sentences and paragraphs and writing clear, concise summaries that are properly documented.

**CM1460 - Writing for the Workplace**
This course is designed to introduce students to written communication in the workplace and provide considerable practice in writing clear, concise summaries that are properly documented.

**CM1480 - 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 applying writing exercises that require philosophical reflection and that will extend students vocabulary and increase their effectiveness as communicators in their field.

**CM1530 - Proposal Writing**
In this course students will learn the necessary skills to write successful proposals. Students will formally research funding sources, identify personal areas of interest, and complete an actual proposal for submission. Students will also be expected to present, defend, and critique their proposals.

**CM1550 - Creative Writing**
This course provides an opportunity for students who are interested in writing poetry, short fiction, or drama to share ideas and innovations. Students will examine a variety of themes, styles, and techniques which can broaden their own creative explorations. The course encourages students to discover and develop styles appropriate to their own literary aspirations.

**CM1560 - Writing from Original Sources**
Students in this course develop multimedia content from original sources such as recall, interviews, research, conversation and imagination. Students keep a personal journal, develop creative writing skills through various writing exercises and develop written content for multimedia applications

**CM1680 - Writing for the Screen**
Students will acquire advanced skills in critical narrative development, formal presentation, and the screenwriting craft. It expands on previously covered material on film direction, pre-production and narrative fundamentals to create a detailed creative synopsis or "treatment" and a screenplay in a prescribed format.

**CM2100 - Workplace Correspondence**
Communications 2100 gives students the opportunity to study the principles of effective writing. Applications include letters, memos, and short report writing. This course also allows students to explore job search techniques.

**CM2110 - Business Writing Fundamentals**
Business Writing Fundamentals gives students the opportunity to apply the principles of effective business writing. Applications include letters, memos, e-mail and informal business report writing. This course also allows students to explore job search techniques.

**CM2130 - Workplace Writing**
Students will be introduced to the principles and practices of effective written communications applicable to their program of study. They will understand the importance of well-developed writing skills; the purpose of various types of correspondence; examine the principles of effective writing; examine standard formats for letters and memos; write effective letters and memos; examine the fundamentals of informal reports and the report writing procedure, and develop an effective resumes.

**CM2150 - Workplace Communications**
This course is designed to introduce students to the principles of effective communication including letters, memos, short report writing, oral presentation and interpersonal communications. Upon completion of the course, students will be able to understand and apply communication skills as outlined in the Employability Skills 2000, Conference Board of Canada; understand the importance of well-developed writing skills in business and in career development; understand the purpose of the various types of business correspondence; examine the principles of effective business writing; examine the standard formats for letters and memos; write effective letters and memos; examine the fundamentals of informal reports and the report writing procedure; produce and orally present an informal report; examine effective listening skills and body language in communication.

**CM2160 - Communication Essentials**
This course is designed to introduce learners to the principles of effective communication including letter, memos, short report writing, oral presentations and interpersonal skills. Learners will apply the principles using trade specific examples.

**CM2200 - Oral Communications**
This course is designed to help students develop interpersonal, oral communication, and presentation skills in a team-based environment.

**CM2300 - Report Writing**
This course will stress skill development in planning, researching and documenting, preparing graphic aids, proofreading and editing, and completing formal reports.

**CM2460 - Note-Taking And 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.

**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.

**CP1150 - Visual Basic**
This course introduces students to WINDOWS programming using Visual Basic. Relational database concepts will be employed as attractive and useful applications are developed taking advantage of the Graphical User Interface.

**CP1270 - Programming Fundamentals**
The course introduces the fundamental concepts of problem solving and procedural programming techniques used to design and implement computer solutions to problems in engineering and mathematics.

**CP1280 - Windows Client**
This course is intended to provide the skills necessary to provide a stable, secure, and efficient desktop environment for Windows client operating systems. Topics include automated deployment, updates, network configuration, operating system optimization, and backup across multiple versions of Windows operating system.

**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.

**CP1331 - Advanced Windows Enterprise Server**
Building on the skills developed in CP1310 Windows Server Administration, this course enhances the students 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.

**CP1340 - Object Oriented Programming**
The course is designed to give the learners a thorough grounding in the principles of object oriented programming. Additional topics include exception handling design and implementation of Java applications with Swing graphical user interface and
multithreading in the Java programming environment.

Prerequisite(s): CP1270

CP1360 - Programming for Computer Systems and Networking
This course is designed to give the student the logic involved in the computing process and the ability to develop algorithms to describe the solution to a given problem, with implementation using a scripting language. This course uses object oriented technologies to aid the student in developing solutions to computer support related problems. The intent of this course is for the student to become familiar with object oriented techniques and programming logic and to practice that logic using scripting language.

Prerequisite(s): None

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, 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.

Prerequisite(s): CP1270

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

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

CP1920 - Computer Hardware and Troubleshooting I
This course is designed to expose the students to the basic components of a computer system and methods of troubleshooting the components. The student will learn how to: evaluate, install, configure, troubleshoot and specify all basic components such as CPUs, Memory, and Storage Devices. It will also cover such topics as: PC repair fundamentals, chipsets, busses and expansion slots.

CP1922 - Computer Hardware and Troubleshooting II
This course is designed to expose the student to another level of components of a computer system and the methods of troubleshooting 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 - Linux And Unix
This course is an introduction to the fundamental concepts of the Linux and UNIX operating systems. Students will apply these concepts through practical application.

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 CP1850

CP2310 - Electronic Spreadsheet Applications
This course will introduce students to the concepts and applications of electronic spreadsheets. Students will create, format and print enhanced worksheets and graphs, and will incorporate functions and macros into their spreadsheets. They will also use database features to manipulate data.

CP2320 - Micro Database Applications
This course introduces the student to the concepts and applications of database. Students will create, modify and update a database as well as database forms and reports for use in a business environment. They will also perform database functions and use database commands.

Prerequisite(s): None

CP2390 - Desktop Publishing/Web Basics
Using desktop publishing software, students will prepare newsletters, flyers, and other publications which require professional design elements such as columns, boxes, various type fonts and styles, rules, and graphic pictures. Students will create, modify and maintain standards based static websites.

Prerequisite(s): MC1080
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): None

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, CP3120

CP2530 - Data Structures & Algorithms
This course builds on the foundation provided by Programming Fundamentals and Object Oriented Programming. It introduces the fundamental concepts of algorithm analysis and design as well as dynamic data structures. Prerequisite: discrete mathematics concepts are introduced as appropriate.
Prerequisite(s): CP1340

CP2560 - Advanced J2SE Programming
This is a second course in Java for students who have already completed a one-semester course in object-oriented programming in Java. Examples and assignments typify standard business applications. The course stresses using object-oriented design concepts to develop relatively sophisticated applications in Java. Topics include but are not limited to: String Processing; Graphics and Java2D components; Advanced GUI Components and Event-handling; Exception Handling; Multi-threading; File and Stream I/O; Internet Networking; Multimedia, Utilities Package and Bit Manipulation; Collections API.
Prerequisite(s): CP2280

CP2640 - Desktop Publishing
Using desktop publishing software, students will prepare newsletters, flyers and other publications which require professional design elements such as columns, boxes, tables, various font faces and styles, rules, and graphic pictures. Using web design software, students will create and modify a multiple page website for use in a business environment.
Prerequisite(s): DM2200 or MC1240

CP2650 - Hardware Fundamentals
This course prepares learners to work with computing devices commonly found in enterprise. Learners will be introduced to safety and effective tool use. Learners will examine client computing options including mobility. Learners will examine how client computing is supported in the enterprise through study of server technologies including storage and virtualization.

CP2730 - Project Management and Analysis
This course is designed to help the student understand the workings of project management/analysis and understand its importance to improving the success of information technology projects. The student will complete a major project that concentrates on project management/analysis as it applies to the infrastructure support area.
Prerequisite(s): CR1100

CP3180 - 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

CP3190 - 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

CP3110 - 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 `&gt;in hands-on use of the commands and procedures.
Prerequisite(s): CP3130

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, EP1150

CP3470 - IM Systems Analysis and Design
The IM Systems Analysis and Design course presents an overview of the complete system development life cycle (SDLC) of IM related projects. It gives a fundamental overview of the effective analysis and design of business-related problems. It also concentrates on requirements definition, feasibility and design considerations utilizing the traditional
CP3490 - Software Engineering
The course introduces learners 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 a significant software system is a crucial part of the course.
Prerequisite(s): CP2530
Co-requisite(s): CP3490

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.

CP3520 - Databases
The course introduces learners to the principles of database design and implementation as well as administration of database management systems. Discrete mathematics prerequisites are introduced as appropriate. Development of significant database system is a crucial part of the course.
Prerequisite(s): CP2530
Co-requisite(s): CP3490

CP3561 - Java Database and Web Component Development
This is the third course in the Java sequence. The student will learn techniques to manipulate databases using JDBC technology as well as create web components using JavaServer Faces components and AJAX enabled javaServer faces. The programs and services created will use java data types and Swing controls that reinforce the Model-View Controller architecture. Examples and assignments typify standard client-server business applications in an intranet or internet environment.
Prerequisite(s): CP2560, CP2370

CP3620 - Web Programming
The course is designed to give learners a thorough understanding of Web technologies. Topics include client-server architecture and protocols. Server side topics include JavaScript and PHP scripting languages, AJAX, Java servlets and security.
Prerequisite(s): CP3490, CP3520, CE1210

CP3800 - Mobile Application Development
The course introduces learners to application development for mobile devices and is structured around tools, frameworks and programming language(s). Topics include Model-View-Control paradigm, Objective-C, views (scroll, web, image, table), view controllers, application settings, documents and core data, OpenGl ES and core location and map it.
Prerequisite(s): CT2530, CP3490
Co-requisite(s): CP3830

CP3830 - Computer Graphics
The course introduces learners to basic algorithms and programming skills in computer graphics using C programming language and OpenGl libraries.
Prerequisite(s): CT2530

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.
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): CP3410

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
Co-requisite(s): PR2460

CP4470 - Emerging Trends in Industry
Through directed research students will explore emerging trends in the digital animation field. The topics covered are selected to focus on a program that has not been fully explored in the students 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 unmet deficiency in student knowledge of specific topics.

CP4471 - Emerging Trends in Software Development
This course covers trends in software development that arise from the natural evolution of the field. Topics are selected with the aim of exposing the student to the new and/or evolving techniques and/or technologies used in software development.
Prerequisite(s): Depends upon the topic(s) selected.

CR1100 - Networking Fundamentals
This course introduces students to networking.

CR1260 - Client Service for the Computer Industry
This course focuses on the role of an information technology employee in providing quality technical client service in any given situation. Students will develop the skills they need to interact effectively with clients, either face-to-face, on the telephone, in writing or on the web. Some of the topics covered will be Quality Client Service; Communicating with Clients; Handling Difficult Clients; Solving and Preventing Problems; Working as a team; and Managing Stress and Burnout.

CR1280 - IM Computer Concepts
This course is designed to expose the student to the fundamentals of computing/IT concepts, associated terminology, and emerging issues and technologies as they pertain to Information Management. The students are exposed to a full range of topics that focus on storage devices, peripheral devices, networks and the Internet, security, and file formats.

CR1340 - Computer Networking Operations
This course is intended to give learners an overview of computer networking, data communications, and operating system applications found in processing industries. The student will be exposed to data communications standards and systems, network topologies, Communication Media, Communication Hardware, LAN Protocols, and Microsoft Operating Systems.

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 Organizational Security. In the labs students will be exposed to the techniques and tools that can be used to protect personal computers from attacks via the web.
Prerequisite(s): CR1280

CR1510 - Website Development
After completing this course the student will be trained in the essential concepts of XHTML and JavaScript. The student will begin with developing a basic web page and move on to developing a basic website. Then the student will create web page forms, and work with cascading style sheets. Next, the student will work with JavaScript to create dynamic web pages and websites.

CR1530 - Web Design I
Students will gain the skills necessary to design and develop a basic website, with an emphasis on design issues over programming skills. Students will be introduced to basic programming in HTML and will learn how to develop sophisticated page layouts and images for websites.

CR1531 - Web Design II
Students will gain the skills necessary to modify and
develop client-side websites. Students will focus on design issues as opposed to programming skills and will be introduced to intermediate programming in HTML and basic CSS and will learn how to develop sophisticated page layouts and images for websites.

**Prerequisite(s):** CR1530

**CR2130 - Enterprise Management using SMS**
This course provides the student with the knowledge and skills to management client and server systems using a centralized management suite to provide a stable and secure computing environment.

**Prerequisite(s):** CR100, CP1330

**CR2170 - Trends in Web Development**
This course covers trends in web development that arise from the natural evolution of the field. Topics are selected with the aim of exposing the student to the new and/or evolving techniques and/or technologies used in web development.

**Prerequisite(s):** Successful completion of all courses in Semesters 1-3 of the Web Development program

**CR2230 - Microsoft Exchange Server**
Since its inception as a text messaging service for locally-connected computers, email has evolved into a globally-connected information sharing and collaboration system. Understanding the interconnection between clients, servers, and other networked email systems is vital to maintaining business communications. This course focuses on the planning, installation, configuration, and support of a Microsoft Exchange Mail Server. This would include mail concepts, server installation, client configuration, server management and configuration, public folders in a 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 deal with the use and administration of a Linux based system. In this course the student will learn design and architecture of a Linux operating system as well as how to use many of the commonly used 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.

**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

**CR2530 - Web Design III**
Students will gain the skills necessary to work as part of a team and develop more advanced websites. Students will be working on more complex projects where the role of the designer is to work with clients, audiences and team members to develop more sophisticated design solutions.

**Prerequisite(s):** CR1531, GA1351

**CR2800 - Security for Programmers**
This course will provide the student with a general understanding of the field of Information Security. Topics discussed include, but are not limited to, General Security Concepts, Secure Coding, Basics of Cryptography and Operational and Organizational Security.

**Prerequisite(s):** CR1100 or CP1570 or CP1880, CR1120 or CP1850

**CR2900 - Switching and VoIP**
This course builds upon the students 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 an IT 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

**CS1120 - Leadership Skills I**
This course introduces the concepts of group dynamics, team development, goals, group structures and communication in groups. Skills in team development, and in resolving conflicts and controversy in groups are practiced.

**CS1121 - Leadership Skills II**
This course is the second of three leadership courses designed to help students work with groups. Decision making, meeting management, facilitation, recruitment, motivation, fund-raising, board development, supervision, mediation and planning are the major topics. Case studies, gaming, simulations, role play and formal exams are part of the instruction and evaluation process.

**Prerequisite(s):** CS1120

**CS1600 - Leadership I - Wilderness Travel**
Topics in this course will involve the theory and practical aspects of wilderness travel: basic human needs; clothing and insulation; basic equipment needs; and nutrition, food planning and preparation.

**CS2121 - Leadership Skills III**
This course helps students practice and develop their leadership skills by working on a specific project, normally in conjunction with a community group. Together with the community group, students will develop a strategic plan, implement that plan, and evaluate the learning process.

**Prerequisite(s):** CS1121

**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 covered, including qualitative and quantitative methods. Students will learn how to design research questions, select appropriate methods, and analyze data. The course will also cover ethical issues in social research.

**Available through Distributed Learning**
CS2650 - Leadership III - Guiding Principles
This course focuses on leadership and its role in managing projects and organizations. The course will include case studies, group discussions, and a research project.
Prerequisite(s): MA1101

CS2500 - Project Management
This course focuses on planning projects and on acquiring and utilizing the resources necessary to complete these projects. Students use project management and budgeting software to apply planning and management principles to a particular project.

CS2610 - Wilderness Survival
This course is designed to teach the student the necessary skills required to travel and survive in a wilderness setting. It includes practical and theoretical information on map and compass, search and rescue techniques, and emergency survival skills. It includes information on trip preparation, maps, compasses, factors that affect survival, survival techniques, search and rescue procedures and rope handling.
Prerequisite(s): CPR and Standard First Aid

CS2620 - Wilderness Survival
This course is designed to teach the student the necessary skills required to travel and survive in a wilderness setting. It includes practical and theoretical information on search and rescue techniques, and emergency survival skills. It includes information on 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

CS2640 - Leadership II - Wilderness Survival
This course is designed to assist students in developing the necessary skills required to travel and survive in severe wilderness settings. It includes theoretical and practical activity in emergency survival skills, search and rescue techniques, and hazard / avalanche awareness and rescue procedures. Practical activities will occur in winter conditions, and will involve two overnight expeditions.
Prerequisite(s): CS1600

CS2650 - Leadership III - Guiding Principles
This course will study outdoor leadership. Topics include an overview of outdoor leadership, group dynamics, conflict resolution, leadership theories, judgment and decision making, guiding approaches, and instructional techniques. Students will be required to participate in an extended field expedition and real life situational role playing will be required of students on a rotational basis for all aspects of this course as part of in-class and field based activities.
Prerequisite(s): CS2640

CS2700 - Self Directed Learning
This course is normally taken in the fourth semester of a students program. It is designed to help students integrate and build upon previous courses in their program of studies. Based upon independent study, and structured around a learning contract between the student and the instructor, the course consists of students focusing on a specific issue within their field of specialization.

CT2300 - Applied Programming
This is a course designed to introduce the technology learner to the concepts of problem solving using computer programming. The course will be taught using a high level language such as C or C++. Learners will write programs to solve problems within their related disciplines and will learn the concepts of troubleshooting and problem solving. The course covers the following areas: structured programming concepts, data types, decision statements, loop and iteration procedures, input/ output procedures, and files.
Prerequisite(s): MA1101 or CE1140, ET1151

CT2530 - POSIX Operating Systems
The course introduces learners to the fundamentals of operating systems including process, memory, I/O management, file system and virtualization. Examples will be taken from UNIX. C programming language is overviewed as well as shell scripts.
Prerequisite(s): CP1340
Co-require(s): CE1210

CT3140 - PC Configuration
This course is designed to expose the student to the basic components of a computer system. It will enable the student to evaluate, install, configure, and specify all basic computer components.

DB2100 - Introduction to Disabilities
This course is designed to provide students with an overview of the history of disability, as well as an understanding of current human rights legislation which provides a context and a value base for students to explore the field and refine a personal value system. The course also provides a general understanding of various types of disabilities, and allows students to explore the types of support that may be needed by individuals and families, as well as the various roles they may choose to take in order to facilitate inclusion and citizenship of persons with disabilities.

DB2110 - Issues in Disabilities
This course explores many of the issues and challenges which are faced by persons with disabilities and their families as they attempt to participate in their communities as equal citizens. Students will analyze the issues, explore alternatives, and develop a vision of the changes needed for full participation. Furthermore, students will examine strategies which can be used in building inclusive communities.

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 students 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 CE3400.
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): CE61500

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): CT1150

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): EG1430; 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): EG1430; FM3100; CI1240

DM1100 - Course 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 - Course Production I
This course includes keyboarding, file management and basic document formatting. Keyboarding speed on unseen straight copy material is developed to 25 net words per minute for three (3) minutes. Students...
will use Microsoft word processing software to produce the following documents: notices, announcements, signag, basic correspondence, basic tables, and basic reports. Note: Students must achieve a typing speed of 30 net words per minute for five minutes in order to pass KB1150. Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

DM1210 - Document Production II
This course further develops proficiency in document production using intermediate word processing applications. Students will also apply skills in the production of intermediate business correspondence, tables, forms and reports and reinforce their skills in file management. Note: Students must achieve a typing speed of 30 net words per minute for five minutes in order to pass KB1150. Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM1200

DM1300 - Transcription I
This course introduces skills in machine transcription and/or using transcription software, and reinforces grammar and punctuation skills. Emphasis is placed on applying proofreading and language skills: grammar, punctuation, and spelling. Decision-making skills are introduced through the transcription of basic business documents.

Prerequisite(s): DM1200 and CM1100

DM1301 - Transcription II
This course is designed to further develop skills in machine transcription and/or using transcription software. Emphasis is placed on accuracy and speed as well as grammar, punctuation, and spelling competency. Documents will be transcribed from various business environments. Decision-making skills are improved in the transcription of complex unarranged material.

Prerequisite(s): DM1300

DM1330 - Legal Transcription I
This course helps students increase their competency in machine transcription and/or using transcription software. Emphasis is placed on accuracy and speed of transcription as well as on grammar, punctuation, and word usage competency. Decision-making skills are enhanced through the transcription of legal documents for general legal procedures, civil litigation and incorporation.

Prerequisite(s): DM1300
Co-requisite(s): DM2210 and OF2500

DM1400 - Medical Transcription I
This course introduces the student to a basic understanding of medical transcription software and rules of medical transcription, and the development of the students skills to transcribe medical correspondence and reports.

Prerequisite(s): DM1300 and DM1210
Co-requisite(s): TM1100

DM1401 - Medical Transcription II
This course further develops the ability of students to transcribe with accuracy and speed medical correspondence and more specialized reports for various medical specialties. Transcription drills will be used to enhance proficiency in medical transcription with speed and accuracy.

Prerequisite(s): DM1310
Co-requisite(s): DM3250 and OF2530

DM2200 - Document Production III
This course combines keyboarding development, document production, and word processing to improve proficiency in document production. Keyboarding speed on unseen straight copy material is developed to a minimum of 35 net words per minute for five minutes. Students will reinforce their skills in the production of advanced business correspondence, tables, reports and specialized business documents. Students will also use Microsoft PowerPoint software to prepare presentations. Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM1210

DM2210 - Legal Document Production I
This course combines keyboarding development, word processing concepts, and legal document processing for general legal procedures, civil litigation and incorporation. Keyboarding skills will be reviewed and developed to 35 net words per minute for five minutes with an emphasis on accuracy. This advanced course is designed to teach students the setup and function of various legal and non-legal documents including correspondence, reports, memoranda, accounts, contracts, court documents and corporate papers. These documents will be produced with speed and efficiency using state-of-the-art equipment and software to create a precedent file from which students will merge text from the keyboard. In addition, word processing concepts introduced in DM1210 Document Production II will be further enhanced. Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM1210
Co-requisite(s): OF2500

DM2240 - Document Production IV (Typesetting)
This course combines keyboarding development and document formatting using a project/simulation approach. Students will be expected to develop and use critical thinking and decision-making skills, and to process and produce documents at an advanced level using Microsoft Office. Students will also perform tasks that require the integration of various software packages i.e., word processing, database, spreadsheets, presentations, electronic mail and calendar. Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM2200, CP2310 and CP2410

DM2420 - Legal Transcription II
This course continues to increase competency in machine transcription and/or using transcription software. Emphasis is placed on accuracy and speed of transcription of business correspondence and legal documents presented in an unarranged, office-style manner. Throughout dictation of the material, the dictator makes editing decisions, phones may ring, and other interruptions may occur. Decision-making skills are further refined through transcription of legal documents for real estate, wills and estates, and family law.

Prerequisite(s): DM1310
Co-requisite(s): DM3250 and OF2530

DM3250 - Legal Document Production II (Real Estate, Wills, Estates and Family Law)
This course builds on DM2210 - Legal Document Production I and incorporates many of the basic legal formats learned. This course will introduce students to documents required by a legal practice when handling real estate transactions for both the vendor and the purchaser and will further develop word processing and legal document production skills for wills, estates and family law. Students will produce correspondence, legal documents, and legal precedents required in real estate, wills and estates law, and family law. Using a case approach, students will follow and interpret instructions and produce documents while using check lists to assess priorities and manage time. The students will further develop a precedent file using state-of-the-art equipment and software. Note: Students must achieve a typing speed of 40 net words per minute for five minutes in order to pass KB1151.

Prerequisite(s): DM2210
Co-requisite(s): OF2530

DP1100 - Digital Electronics
This course introduces students to the field of digital electronics. They will be taught design and diagnosis techniques applicable to digital electronics.

Prerequisite(s): ET1101

DP1110 - Digital Systems I (Logic)
This course introduces learners to the field of digital electronics. They will be taught design and diagnosis techniques applicable to digital electronics.

Prerequisite(s): ET1101

DP1310 - Introduction to Programmable Logic Controllers
This is an introductory course in programmable logic controllers (PLC) covering the fundamental concepts of digital, numbering systems, logic, gates, circuits, simplification, arithmetic elements, latches, flip-flops, counters, the components in a typical PLC system, configuring, addressing and programming. The laboratory component will develop understanding and skills related to circuit construction and operation and ladder logic programming and troubleshooting.

Prerequisite(s): ET2100, AE1240

DP1840 - Motors Generators and Starting Systems (M, E)
The M and E Course will give the student an overview of the principles of all AC and DC motors. The student will be able to differentiate between AC/DC motors. Also cover all aspects of AC/DC generators and alternators theory, including construction and maintenance of engine starters, electrical starters. The inspection and servicing procedures for the starting systems will be covered in this course.

Prerequisite(s): PE1140

DP2110 - Digital Systems II (Interfacing)
This course provides the learner with knowledge of the hardware and software associated with digital systems and interfacing requirements for communication from a PC to external environments. Advanced FPGA technologies will be used to interface hardware devices. Interfacing using pneumatics will be used to expand the knowledge of interfacing from electronics to mechatronics.

Prerequisite(s): DP1110, CT12300; CP1270

• Available through Distributed Learning ☋ Available through correspondence
**DP2150 - Interfacing & Microcontrollers**
This course provides students with an understanding of microcontroller circuits through hands-on experience with the Intel 8051 family of microcontrollers. The microcontroller, its use as a control device in embedded systems, and the hardware requirements associated with interfacing with the environment will be covered. Students will further develop the skills required to troubleshoot, analyze and design complex, automated digital circuits and systems.
**Prerequisite(s):** DP1100; DP2400; CT1120

**DP2340 - Robotics & Computer-Aided Manufacturing**
This course introduces learners to robotics fundamentals; operations; programming; interfacing to other components and systems; and application of robotic technology to computer numerical control (CNC) and computer integrated manufacturing (CIM). Course activities will be concentrated on both pneumatic and electronic robots, CNCs theory and machine tool control practice and the integrations of engineering manufacturing by using computers and micro-controllers.
**Prerequisite(s):** DP1100 or DP1110

**DP2360 - Function Block Programming**
Function block programming has become the programming language used for most process automation systems. It is currently used in DCs, standalone controllers, PLCs, and is now being used in field level devices. This course will cover how to develop function block programs and link them to a Human Machine Interface (HMI). The control strategies being taught in this course will start with basic PID control and progress to more complex control strategies with additional variables being placed on the HMI.
**Prerequisite(s):** DP2520 or XD2500

**DP2400 - Digital/Microprocessors**
This course introduces the student to the Intel microprocessor programming techniques using assemblers and debuggers and provides training in the MS-DOS operating system.
**Prerequisite(s):** DP1100

**DP2410 - Digital/Microprocessors**
This course introduces the student to the microprocessor programming techniques using assemblers and debuggers and provides training in computer interfacing techniques.
**Prerequisite(s):** DP1100

**DP2430 - Digital Interfacing**
This course provides the learner with knowledge of the hardware associated with digital systems and interfacing requirements for communication from a PC to external environments. Interfacing to pneumatic systems will also be introduced.
**Prerequisite(s):** DP1110, AE1260

**DP2540 - Advanced Programmable Logic Controllers**
This is an advanced course in programmable logic controllers (PLC) covering timers, counters, data manipulation, comparison, conversion, arithmetic instructions, word logic instructions, shift registers, rotate registers, sequencers, analog inputs and outputs, communications protocols and an introduction to human machine interface concepts. The laboratory component will further develop and strengthen the understanding and skills related to circuit construction and operation and ladder logic programming and troubleshooting.
**Prerequisite(s):** DP1310

**DP3110 - PLC**
This course introduces the learner to the general concepts and programming techniques for digital, analog and peer to peer communications associated with programmable logic controllers (PLC) used in the instrumentation applications.
**Prerequisite(s):** MP3170, CE2810

**DP3200 - Embedded Controller Applications**
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 microcontrollers resources. Hands-on experience is provided in the lab environment.
**Prerequisite(s):** CT12300 or CP1270, DP2410 or DP2110

**DP3240 - DCS Configuration**
This course will review the history of Distributed Control Systems (DCS) and provide a comparison of the current system to modern PLC/HMI and SCADA systems. It will provide the participants with the knowledge to troubleshoot a DCS system as well as modify existing configurations, control strategies, and operator interfaces.
**Prerequisite(s):** DP2360

**DP3300 - Microprocessor Interfacing**
This course provides the student with a knowledge of the hardware associated with a microcontroller system and the interface requirements for communication with the environment.
**Prerequisite(s):** CT12300, DP2400

**DP3310 - Microprocessor Interfacing**
This course provides the student with a knowledge of the hardware associated with a microcontroller 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 of network design, 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):** ET1200
**Co-requisite(s):** CT2330

**DR1111 - Drafting 4th 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.
**Prerequisite(s):** EG1140
**Co-requisite(s):** DR1400

**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

**DR1220 - Engineering Drawing**
Through participation in this course, learners will acquire drafting and design skills that will enable them to design a basic wood-frame structure to the requirements of the National Building Code, Part 9. Learners will acquire the ability to sketch floor plans, main sections, and elevations. Furthermore, learners will be expected to produce a partial set of working drawings of a wood-frame construction (residential) structure using AutoCAD.
**Prerequisite(s):** EG1110, EG1140

**DR1240 - CADD Drawings**
Through participation in this course, learners will acquire computer drafting skills that will enable them to lay out a variety of engineering drawings (mechanical, civil, and architectural) to industry standards. Specifically, learners will acquire the ability to draw floor plans, sections, details, and elevations, as well as some basic mechanical and structural working drawings.
**Prerequisite(s):** DR1220

**DR1400 - Wood Frame Construction**
This course is an introduction to wood frame practices and materials with emphasis on foundation, floor, wall and roof construction of residential buildings.
**Prerequisite(s):** EG1430

**DR1700 - Basic Drawing and Sketching**
This course provides training in blueprint reading and sketching.

**DR1770 - Basic Drawing And Sketching For Ndt**
This course provides an introduction to orthographic projections sketching, sectional and primary views. It also introduces the techniques of plan reading and drawing. This course provides training for a NDT Technician Certification. It includes both in class practical training.

**DR2150 - Architectural Drawings**
This course is an introduction to Architectural Drawing conventions and applications which focuses on the rationale used in producing the technical drawings needed for conventional wood-frame construction. Emphasis is placed on general drawings such as floor plans and elevations in this course.
**Prerequisite(s):** EG1430
**Co-requisite(s):** DR1400

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DR2230 - Engineering Graphics for Electrical
This course follows the Engineering Graphics course completed in the first year of Engineering Technology. It covers the more advanced commands used in the AutoCAD drafting package, with application examples from across the electrical engineering technology curriculum that require the use of AutoCAD.
Prerequisite(s): EG1430

DR2350 - Engineering Graphics for Instrumentation
This course follows the Engineering Graphics course completed in the first year of Engineering Technology. It covers the more advanced commands used in the AutoCAD drafting package, with application examples from across the Instrumentation and Controls Engineering Technology curriculum that require the use of AutoCAD.
Prerequisite(s): EG1430

DR2410 - Electronic Computer Aided Design I
This course is designed to give the student a basic knowledge of Printed Circuit Board design techniques required in the electronics industry through the use of AutoCAD, Circuit Maker 2000 and Isopro software. It introduces the student to specific types of drawings required in the electronics industry to include: Block Diagrams, Logic Diagrams and Schematic Diagrams. The Electronic Specific drawings will be done using Circuit Maker 2000 or equivalent Schematic Capture software. A PCB design will be created using the T-Techn Quic PCB Circuit CNC machine and Isopro software.
Prerequisite(s): EG1110 and either ET2100 or MP2140

DR2411 - Electronic Computer Aided Design II
This course utilizes the latest in computer-aided design software to provide the student with skills necessary to completely analyze any analog or digital circuit prior to construction or implementation. It provides the student with a working knowledge of the latest in computerized design tools used for Digital Simulation, Analog Simulation, and PLA/PAL Construction and Programming. This course makes extensive use of three Computer Aided Design Packages: and the techniques used in this course will be used extensively in future electronic courses.
Prerequisite(s): AE2301, DP1100, DR2410

DR3110 - Working Drawings I
This course is an introduction to building construction techniques, architectural working drawings and detailing. It is designed to enable the learner to become involved in the creation and proper use of working drawings. Course material takes the form of lectures, projects, and analysis of such projects.
Prerequisite(s): EG1240, DR2150
Co-requisite(s): BU2300, BU2410

DR3111 - Working Drawings II
This is a course dealing with larger buildings of masonry construction. It is designed to enable the learner to become a functional part of a group involved in the creation and proper use of working drawings. Course material takes the form of lectures, group projects, and group analysis of such projects.
Prerequisite(s): DR3110, BU2300, BU2410
Co-requisite(s): BU2301, BU2411

DR3200 - Advanced Computer Aided Design
This course is designed to give the learner an exposure to programming logic and data linking between graphics information and text/numerical data. After a general introduction to operating environments, Visual Basic for Applications and AutoJSP, the learners are expected to make extensive use of CAD customization concepts. Data linking through attributes and SQL is used in the development of data tracking with emphasis on Facilities Management. Also included are the concepts and procedures in the presentation of animated drawing and virtual images, which are used in the preparation of the major technical project.
Prerequisite(s): EG2200, PR2300
Co-requisite(s): DR4101

DR3300 - Manufacturing Technology
This is an introductory course in manufacturing technology. In this course, students are introduced to fundamentals of computer-aided design, design and manufacturing (CAD/CAM). Emphasis is placed on theory and practice in the metal fabrication industry through computerized numerical control (CNC) shape cutting.
Prerequisite(s): MC1100 or equivalent

DR3310 - Cad/Cam
This is an introductory course in manufacturing technology. In this course, learners are introduced to fundamentals of computer-aided design and manufacturing (CAD/CAM). Emphasis is placed on theory and practice in the metal fabrication industry through computerized numerical control (CNC) shape cutting.
Prerequisite(s): EG1310

DR3720 - Tool Design I
This course is an introduction to tool design and tool making practices. It will provide the student with the basic knowledge required to design simple types of tooling required within the Manufacturing industry.
Prerequisite(s): CF1120
Co-requisite(s): EG2130

DR3721 - Tool Design II
The continuation of DR3720 Tool Design I, this course will expand on tool designing methods used in the sheet metal and plastic industries. The course will allow students to create tool design drawings for sheet metal and plastic components. Hands-on lab application will use a Vacuum Former, Injection Molder and Rapid 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

DR4110 - Working Drawings III
This is the third course in a series of working drawing courses. The focus is on larger structures with a variety of building envelopes including glass and metal curtain walls and composite metal panel systems. 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): DR3111

DR4111 - Working Drawings IV
This is the fourth in a series of working drawing courses. The course uses the same building as in Working Drawings III. Students are required to solve technical problems based on theory and knowledge gained in other courses. This course focuses on details of technical design problems not incorporated in previous working drawing courses.
Prerequisite(s): DR4110

EC1110 - Microeconomics
The course objectives are to develop an understanding of the economic institutions and environment under a market system of exchange and the response made to decisions arrived at by 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 issues.

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.
EE1150 - 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): MA1101

EE1200 - 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.

EE1210 - Macroeconomics
This course is designed to introduce students to the principles of macroeconomics, including 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.

EE1400 - 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.

EE1700 - 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): MA1101

EE1710 - 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, depreciations, 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 dynamics of supervision that relates to individual and group behaviours in an organizational setting.
Prerequisite(s): MA1101

EE1750 - Construction Economics
This course will give the learner the knowledge necessary to make decisions based on economic alternatives. It will introduce the learner to the fundamentals of cash flow equivalences and methods of comparison for different alternatives. It will take into account depreciation and the effect of inflation on the evaluation of alternatives. The learner will also be able to compare public sector projects based on benefit-cost analysis.
Prerequisite(s): MA1101

EE2410 - Introduction to Economic Geography and Local Development Planning
This is an introductory course in Economic Geography with an emphasis on the application of the principles of locational analysis, community economic development, and sustainable development to local economies.

EE1180 - Curriculum I
This course offers an in-depth exploration of play as an integral component of quality early learning and child care programs. Students will learn about the theory, function and value of play. There will be an emphasis on developing and refining basic skills that help the adult engage in quality play experiences with children. Students will explore play with sand, water, blocks, and manipulatives. Students will also be introduced to the management of time, routines and transitions to ensure quality play experiences for children.

EE1181 - Curriculum II
The student will develop knowledge of the major theoretical models and approaches currently being used in early learning and child care curriculum. In accordance with provincial standards, the students will develop a working knowledge of the emergent curriculum approach. Students will learn to develop and maintain a developmentally appropriate learning environment as the basis of the emergent curriculum. The student will develop basic skills in the planning, facilitation, documentation and reflection of experiences within an emergent curriculum. A child-centred, active learning approach to curriculum is emphasised. Throughout this course the unique learning styles, individual differences and interests among children will be emphasized and used as a basis for individualizing the curriculum.
Prerequisite(s): EE1180

EE1320 - Positive Behaviour Guidance
This course provides a foundation for understanding and guiding children’s behaviour. Students will learn the principles of guidance and strategies needed to guide behaviour in positive ways. The focus will be on understanding behaviour and implementing techniques that foster positive relationships and self-esteem, and create opportunities for learning.

EE1340 - Child Development I
This is an introductory course in child development. Students will learn terminology related to child development as a foundation for advanced exploration of developmental stages in childhood. Students will also explore the basic principles of child development and learning. An introduction to the concept of child observation is provided as a foundational concept for the study and practice of early childhood education.

EE1341 - Child Development II
This is a course in child development that focuses on increasing students understanding of developmental milestones and growth patterns in toddlerhood and early childhood (2 to 6 years of age).
Prerequisite(s): EE1340

EE1360 - Observation
The early childhood education student must be committed to the goal of supporting and enhancing children’s development. Becoming a skilled observer is a reliable way to collect valid information about each child’s skills, abilities, and their interests and needs. Students will develop knowledge and skills to purposefully observe, record, and interpret child behaviour. Through practical application of a variety of methods to gather observational data, the students will study children’s development, interests, and needs will be enhanced. Students will be able to select appropriate observation methods, interpret and analyze their findings, and apply this knowledge to planning a developmentally appropriate program.
Prerequisite(s): EE1340

EE1420 - Creative Experiences I
This introductory course will provide students with a foundation for creating early learning and child care curriculum. Students will learn about developmentally appropriate experiences in creativity, art, literature and dramatic play. Using a hands-on, participatory approach, students will be provided with opportunities to explore and experiment with related mediums and materials. Students will cultivate a personal sense of wonder and inquiry. The goal is for the student to develop practical play skills that can be applied throughout the early learning environment.

EE1421 - Creative Experiences II
This introductory course will provide students with a foundation for creating early learning and child care curriculum. Students will learn about developmentally appropriate experiences in music, movement, outdoor play, science, and numeracy. Using a hands-on, participatory approach, students will be provided with opportunities to explore and experiment with music, movement, nature, science, and numeracy. Students will cultivate a personal sense of wonder and inquiry. The goal is for the student to develop practical play skills that can be applied throughout the early learning environment.

EE1440 - Family Studies I
This introductory course in family studies provides students with a basic understanding of the modern Canadian family as a foundation for learning about partnerships between parents and early childhood educators. It stresses the significance of positive relationships. Students will become familiar with strategies that promote parent-educator partnerships and communication to create and maintain family-centered and culturally sensitive early childhood education.

EE1441 - Family Studies II
Effective responses to families needs require an understanding of the demands and stresses on families. Students will learn about a number of family stressors, methods families use to cope, and supports that may be provided for children and families.
Prerequisite(s): EE1440

EE1480 - Inclusion I
This is an introductory course on the philosophy, principles, and appropriate practices of inclusion in early childhood programs. Students will learn about the characteristics of inclusive environments, the roles of those involved, and the use of Individual Support Service Plans.
Prerequisite(s): EE1360, EE1340

Available through Distributed Learning
Available through correspondence
EE1481 - Inclusion II
This course will discuss variations in developmental ability as a foundation for developing and implementing strategies for supporting all children in an inclusive early learning environment. Students will have an opportunity to learn about atypical or delayed cognitive, speech/language, physical/motor, sensory, and social/emotional development as well as health impairments. The causes, red flags and developmental impact of developmental deviations will be explored. There is a focus on identifying strategies that the early childhood educator can use to create developmentally appropriate learning environments, activities and materials. 
Prerequisite(s): EE1480, EE1181, EE1341

EE1870 - Community Resources
Strong connections with the community are essential to quality early learning and child care programs. Students will reflect on the importance of community to the health and wellbeing of children and their families. The concept of empowering families to utilize community supports is introduced. Students will identify a broad range of community resources, with opportunities for in-depth examination of specific community resources such as health care professionals, family resource centres, and non-profit organizations. Students will develop the competencies necessary to utilize these resources to support their work as early childhood educators.

EE2180 - Curriculum III
This advanced curriculum course provides students with the opportunity to participate in an in-depth exploration of approaches to curriculum. Students will be able to explain the primary theories related to development and learning, as well as advanced curriculum models. Students will have an opportunity to relate this knowledge to advanced planning, facilitation and documentation strategies, including webbing, the Project Approach, and learning stories. 
Prerequisite(s): EE1181

EE2255 - Advanced Behaviour Guidance
This course offers a more in-depth exploration of guidance theory and its application to the study of children with emotional and behavioural challenges. Students will learn about possible causes and resulting challenges for children. Students will develop practical skills in the prevention and management of challenging behaviour in a team approach. The goal is to develop the skills and an inventory of resources so that educators are able to effectively support children with behavioural challenges. 
Prerequisite(s): EE1290

EE2260 - Introduction to Child Care Administration
This is an introductory course in early childhood education program administration. The aim of this course is to provide an overview of administrative principles and procedures needed to successfully operate high quality, inclusive early childhood education programs. Knowledge of provincial legislation and regulations, and factors which contribute to quality provide the foundation for developing practical skills related to governance, development and evaluation of quality programs, financial and staff management, menu planning, and working in partnership with parents and the community. 
Prerequisite(s): EE2180

EE2340 - Child Development III
This is an advanced course in child development. Students will examine primary theories related to child development and learning as a foundation for advanced curriculum planning. Students will have an opportunity to examine the sequential progression of primary developmental skills from birth to age 12 years. The focus is on developing a working knowledge of the theories, principles, and stages of child development for application in early learning and child care curriculum. 
Prerequisite(s): EE1341

EE2350 - Professional Practice
This course bridges the student to the profession of Early Childhood Education. Students will examine the roots of the early childhood education field as a basis for the study of the current state of early childhood education in Newfoundland and Labrador, Canada and internationally. Students will develop a strong sense of professionalism as an early childhood educator. The goal is to enhance the students capacity to envision and advocate for advances in the sector as an early childhood educator.

EE2470 - Infant Development & Care
This is an introductory course in infant care. It focuses on the unique needs of infants and how these needs can be met through a developmentally appropriate approach to programming and responsive care during the first two years of life. This approach takes into consideration the developmental needs and individual and cultural differences among infants, as well as the critical role of the infant-educator relationship. Particular attention is paid to the various roles of the educator in the design, planning, implementation, and evaluation of a developmentally appropriate physical, social-emotional, and cognitive environment for infants. The importance of establishing positive relationships and open communication patterns with parents will be highlighted in the course. 
Prerequisite(s): EE2340, EE1360

EE2500 - School-Age Development and care
This is an introductory course in school-age care. Students will develop knowledge and skills for working with children ages five through twelve. The course focuses on the unique needs of school-age children and how these needs are met through a developmentally appropriate approach to programming. Students learn about child development patterns and milestones in middle childhood and early adolescence as a foundation for understanding the principles of inclusive school-age care. Particular attention is paid to the various roles of the early childhood educator in the design, planning, implementation, and evaluation of developmentally appropriate physical, social-emotional, and cognitive environments for school-age children. 
Prerequisite(s): EE1341, EE1181

EE1100 - Engineering Graphics
This is an introductory level course in Engineering Graphics which uses CAD as a tool to produce engineering drawings. Engineering Graphics provides visually oriented data that is usable by technical, engineering, and manufacturing personnel to assist in the production of goods and services. Topics covered include an introduction to CAD, geometric terminology and constructions, orthographic projection, pictorial sketching, dimensioning conventions, and sectional views. 
Prerequisite(s): EE1341, EE1181

EE1110 - 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.

EE1160 - 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.

EE1240 - Architectural Graphics I
This course is taken concurrently with DR2150 - Architectural Drawings and is a continuation of EG1430 - AutoCAD Essentials. It is designed to provide the learner with a greater knowledge of CAD and provide an introduction to 3D visualization basics related to Architectural Working Drawings. 
Prerequisite(s): EG1110, EG1430
Co-requisite(s): DR2150

EE1241 - Architectural Graphics II
This course is designed to introduce the learner to Building Information Modeling (BIM) concepts and working knowledge of related software. Learners will use 3D design visualization and incorporate all building related information into one working model. From these modeling techniques, learners will focus on development of presentation graphics, working with shadows and sun studies and completing simple renderings. 
Prerequisite(s): EG1240
Co-requisite(s): DR3110

EE1300 - 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

EE1310 - Applied Cad
This is an applied CAD-based drafting course designed to provide learners with the ability to interpret and prepare mechanical and structural drawings which extend the principles presented in EG1110 and EG1430. 
Prerequisite(s): EG1430

EG1321 - Drawing Interpretation
This course is designed to provide the learners with the ability to interpret and prepare drawings used in specialized areas of mechanical engineering. Learners...
will prepare and interpret assembly, piping, welding drawings and P&ID.

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): EG1430

EG2130 - Engineering Graphics

This is an advanced course in computer aided drafting and design. Parametric 3D CAD software is used for both virtual prototyping of mechanical systems and development of related working drawings. The command tools commonly used for 2D sketch development, 3D feature creation, part assembly, 2D drawing generation, 2D drawing annotation, and 3D simulation are explored. For 2D drawing annotation, particular emphasis is placed on the command tools used for geometric dimensioning and tolerancing.

Prerequisite(s): EG1430

EG2240 - Architectural Graphics III

This is a three part course that allows the learner to explore the world of advanced CAD. The first section is designed to give the learner the ability to customize and extend the many features of CAD according to individual needs. The second section introduces the learner to attributes, data extraction, and data linking between graphics information and text/numerical data. The final section includes the concepts and procedures in the presentation of animated drawings and virtual images which are used for client presentation drawings.

Prerequisite(s): EG1241

Co-requisite(s): OR3111

EH1100 - Earth Systems

Transferable to MUN Earth Sciences 1000. A survey of major earth systems, including the interior of the earth, lithosphere, hydrosphere, atmosphere, and biosphere â€“ their structure, composition and interaction.

EH1102 - Concepts and Methods in Earth Sciences

Introduction to a broad range of concepts concerning the development of the geological record and the Earth; practical methods for collection of field based data; topics in map interpretation and geometric analysis, stratigraphy, paleontology, structure and petrology design to develop the skills necessary to understand and prepare geologic maps and other general skills needed to pursue a career in Earth Sciences.

Prerequisite(s): EH1101 or MUN Earth Sciences 1000

EL1120 - Folklore

This course is an introduction to folklore. It deals with the role that tradition plays in society. The student is given an opportunity to investigate his/her own culture by partaking in field work in the different genres of folklore.

EL1130 - Introductory Business French I

This course is designed as an introduction to French for Anglophone adults. It will focus on both oral and written communication and will introduce students to vocabulary and basic grammatical structures necessary to communicate in French. There will be an emphasis on helping students understand and communicate (at an introductory level) with French-speaking people in the business world.

Prerequisite(s): EL1130

EL1150 - Introduction to Folklore

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

EL1160 - Leisure Arts

This is an introductory course focusing on various art techniques. Students will experience using basic materials and techniques in drawing, ceramics, metal, painting, and photography. This course is not suitable for students enrolled in Visual Arts or Textiles: Craft and Apparel Design programs and therefore cannot be taken as an elective in those programs.

EL1320 - Folklore Studies

Transferable to MUN Folklore 2401. This course is an examination of the traditional cultures of Europe and North America with special reference to Newfoundland and Labrador. A selection of the following areas will be covered: settlement patterns, architecture, work and leisure patterns in the folk community, calendar customs, rites of passage, folk religion, folk medicine, language and folk culture, folk costume, foodways and folk art.

Prerequisite(s): Normally Folklore 1000: Introduction to Folklore is the prerequisite for this course; this can be waived with special permission of the head of the Folklore Department.

EL1340 - Introduction to Anthropology

Transferable to MUN Anthropology 1031. This course is an introduction to the field of social and cultural anthropology. Taking a cross-cultural approach to the study of society and culture, the focus of this course will be on the global issues of ecology, technology, economy, politics, kinship and ideology. This course will also examine linguistic anthropology, but the emphasis will be on how we use language for human communication rather than on formal linguistics. We will consider how human societies go about solving some of the fundamental problems of human existence. How do we make a living? What forms of social organizations do we take part in and why? How do we think about the universe and our place in it? We will compare some of the social and cultural systems we have in our society with those found in other societies. In this manner we can hope to learn valuable lessons about how people from other cultures attempt to solve existential problems and at the same time see our own social and cultural formations in a new and more critical light.

EL1420 - Introductory French I

Transferable to MUN French 1500. This is an introductory course designed for students with little or no previous knowledge of French and for students who wish to review basic vocabulary and structure. The course uses mainly the present tense, but also includes an introduction to the past tense (passé composé with “avoir”). EL1420 has a 500-word vocabulary and covers the most common situations of daily life.

EL1430 - Introductory French II

Transferable to MUN French 1501. This course teaches the use of past tenses and more advanced structures. Students begin to read short texts which are faithful to the original, to write longer compositions, and to explore more complex situations.

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

EL1440 - Introductory French III

Transferable to MUN French 1502. In EL1440, it is assumed that students already have a knowledge of basic vocabulary, grammar and constructions of French, in particular the use of the present tense in regular and irregular verbs, and the use of past tenses. This course continues to practice those tenses, but concentrates on the forms and uses of the future, the conditional and the subjunctive tenses. Students are expected to achieve and maintain a high level of accuracy in spelling, grammar and pronunciation. The work of composition and intensive vocabulary building continues, and students are expected to engage in more advanced oral practice.

Prerequisite(s): EL1430 or MUN French 1501.

EL1500 - Introduction to Linguistics

Transferable to MUN Linguistics 1100 or 2100. This course provides a general, fairly non-technical introduction to linguistics. Students will learn basic concepts about the nature of language and its function in communication. Some technical terminology and elementary analysis related to the study of language and linguistics will be introduced.

EL1530 - Fine Art Printing

Students will gain an understanding of the relationship between a digital photographic file and an electronic printer. Particular attention will be paid to the relationship of the file and a final presentation print.
EN1220 - Resilience And Sustainability
A disaster resilient community has the capacity to absorb stress (physical and psychological) through adaptation. It can manage or maintain certain basic functions and structures during disastrous events and can recover or ‘bounce back’ after an event. This course will provide the learner with a practical and theoretical introduction to the concepts of recovery, resilience and sustainability through instruction, individual and group activities, presentations and case studies.
Prerequisite(s): EM1100 or EM1110; EM1150 or EM1130

EN1330 - The Recovery Process
The discipline of recovery in emergency management often begins in the initial hours and days following an emergency or a disaster and can continue for months and in some cases years, depending on the severity of the event. This course introduces principles and guidelines for managing short and long-term recovery.
Prerequisite(s): EM1100 or EM1110; EM1150 or EM1130

EN1100 - Environmental Science
This is an introductory course in environmental science for Geomatics Engineering Technology. Since Environmental Science is the study of the interactions between humans, other living organisms, and the environment, this course gives the student knowledge of how humans can live, develop, and properly use the earth’s resources while understanding the many environmental issues. The solving of various environmental problems, as well as improving and conserving our natural and urban environments, will form the basis for further studies in the science of Geomatics.

EN1300 - Environmental Technology
This course presents an overview of environmental concerns in the oil and gas industry. Both the effect of the industry on the environment and vice versa. This is a seminar course. All students will be expected to complete a minimum of five seminars.
Prerequisite(s): 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.
Prerequisite(s): EN1520

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, EN2200, 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.

EN2320 - Occupational Health & Safety
This course introduces the principles, methods and techniques involved in assessing hazards, how to control them, and learning the necessary skills to work safely.
Co-requisite(s): CM1401

EN2420 - Environmental Management
This course is designed to prepare the student to analyze potential environmental difficulties associated primarily, but not restricted to the construction industry. In addition, the student will be prepared to recommend, design and implement solutions to eliminate or minimize the effects of construction or associated activities.

EN2500 - Water Resources: Hydrology and Hydrogeology
This course provides the fundamental concepts required to understand hydrology. This course will address hydrologic principles, flood analysis, urban hydrology, and groundwater hydrology. The course also gives the student an overview of well construction, maintenance, rehabilitation, and monitoring techniques.
Prerequisite(s): EN1520

EN2540 - Wastewater Management and Treatment
This second course in the water resources field will cover the issue of wastewater. Students will be introduced to the topic of wastewater by covering the following areas: flow, characteristics, collection systems, processing, operation of systems and treatment. This course will also consider storm water management.
Prerequisite(s): EN1520, BL1130

EN2600 - Environmental Abatement I (Air)
This course is designed to provide the student with basic knowledge of the nature of air pollution in general, and specific technical knowledge and skills in the management and abatement of gaseous waste streams arising from manufacturing industries such as pulp and paper. The course begins with overviews of the impact of air pollution on human health, a discussion of global air quality trends, and a brief look at indoor air pollution. Students are then introduced to concepts of criteria and hazardous air pollutants, especially particulates, gases and odors. Current and innovative air pollution abatement processes are studied in detail. Special attention is focused on provincial and federal Environmental Acts, in particular how these relate to employer and employee responsibilities.

EN2601 - Environmental Abatement - 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. 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. Monitoring procedures and methods of analysis are covered in theory and laboratory sessions. Current and innovative wastewater treatment processes are covered. Special attention is focused on provincial and federal environmental acts.
and regulations, in particular how these relate to
decision making and possible audit findings.
Prerequisite(s): MA1101; PH1101

EN2640 - Environmental Abatement-Air & Solid Waste
This course deals with air pollution and industrial solid waste treatment and abatement. The first part of the course focuses on air pollution and its abatement. The second emphasis of the course is an introduction to knowledge, practices, and theories relevant to solid waste generated from industrial settings. The characteristics, treatment processes, and plant operations to handle air pollution and solid waste will be studied. Monitoring procedures and methods of analysis for air pollution and solid waste management are covered in theory and laboratory sessions. Current and innovative treatment processes are covered with focus on industries operating within the province of NL. Special attention is focused on provincial and federal environmental acts and regulations, in particular how these relate to decision making and best operating practices.
Prerequisite(s): MA1101; PH1101

EN2700 - Environmental Project Management
This course will enable the technician to effectively plan and implement a project based on environmental engineering principles. Practical applications will assist this goal through techniques and methods studied in this course.

EN3110 - Environmental Engineering
This course is designed to acquaint the learner with the major areas of pollution control and mitigation. Learners will gain an appreciation of the issues concerning sustainable development, gain familiarity with environmental legislation and risk management systems, as well as various environmental hazards in the workplace. Environmental concerns due to air pollution and noise pollution will be discussed, as well as solid waste management and wastewater treatment.

EN3200 - Environmental Impact Assessment
This course, oriented to the needs of the environment industry, teaches the student the basics of the environmental assessment procedure. The course covers 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): CH1350

EO1001 - Beginner Listening
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable aural comprehension for a variety of tasks.

EO1002 - Beginner Speaking
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on Speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking for a variety of tasks.

EO1003 - Beginner Reading
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable the comprehension of uncomplicated texts on a variety of topics.

EO1004 - Beginner Writing
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 4. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.

EO2001 - Intermediate Listening I
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable proficiency in a variety of tasks.
Prerequisite(s): EO1001

EO2002 - Intermediate Speaking I
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking for a variety of tasks.

EO2003 - Intermediate Reading I
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 6. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading for a variety of tasks.
Prerequisite(s): EO1001

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.

EO3003 - Intermediate Reading II
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 7. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading for a variety of tasks.
Prerequisite(s): EO2003

EO3004 - Intermediate Writing II
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 7. While special emphasis will be placed on writing, all language skills will be integrated. Objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.
Prerequisite(s): EO2004

EO4001 - Advanced Listening I
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable aural comprehension in a variety of tasks. Objectives in this course may be supported or attained through enrolment in a college credit course.
Prerequisite(s): EO3001

EO4002 - Advanced Speaking I
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 8. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable
speaking proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrolment in a college credit course.

**Prerequisite(s):** E03002

**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):** E03003

**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):** E03004

**EO5001 - Advanced Listening II**
This learner-centered ESL course focuses on developing listening skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on listening, all language skills will be integrated. Listening objectives are presented in a culturally meaningful and thematic context to enable aural comprehension in a variety of tasks. Objectives in this course may be supported or attained through enrolment in college credit courses

**Prerequisite(s):** E04001

**EO5002 - Advanced Speaking II**
This learner-centered ESL course focuses on developing speaking skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking proficiency for a variety of tasks. Objectives in this course may be supported or attained through enrolment in college credit courses

**Prerequisite(s):** E04002

**EO5003 - Advanced Reading II**
This learner-centered ESL course focuses on developing reading skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on reading, all language skills will be integrated. Reading objectives are presented in a culturally meaningful and thematic context to enable reading proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrolment in college credit courses

**Prerequisite(s):** E04003

**EO5004 - Advanced Writing II**
This learner-centered ESL course focuses on developing writing skills similar to Canadian Language Benchmark 9. While special emphasis will be placed on writing, all language skills will be integrated. Writing objectives are presented in a culturally meaningful and thematic context to enable writing proficiency in a variety of tasks. Objectives in this course may be supported or attained through enrolment in college credit courses

**Prerequisite(s):** E04004

**EP1100 - Entrepreneurial Studies**
Students will acquire the necessary skills and techniques to develop a sound business plan. This course is designed to develop an appreciation of small business, particularly as it relates to understanding the entrepreneurial process. 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 will introduce students to business systems, forms of business ownership, production, marketing, finance, personnel and labour relations, international business and small business ownership. Students will describe and compare aspects of business, economics, and finance, including the functional areas of a business.

**EP1130 - Business for Information Systems**
This course will provide students with an overview of business principles and practices relevant to the IT industry. Students will be introduced to the functional areas of business and the processes within each function. Emphasis will be placed upon awareness and literacy of each functional area as they apply to the local and national markets.

**EP1140 - Business Operations in Information Technology**
This course will introduce students to the ways that organizations improve their business practices through the use of computer technology. The course emphasizes systems technologies, enterprise integration, business applications, and critical analysis of organizational change through information systems.

**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 local and national 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.
study is made of the storage of pulpwood, wood handling, cleaning and debarking procedures, chip quality, chipping, and bard/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 thermomechanical pulping. Additional processes covered are pulp cleaning and washing, screening, bleaching, and pulp testing 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 tank and tank farms. Supporting processes include flare and relief system, 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

**ES3310 - Petroleum Refining Support Systems**
The purpose of this course is to introduce the learner to specialized equipment, supporting refinery processes, and utilities found in a typical petroleum refining plant. All processes and equipment explored will include operating principles, type, and application. Simulation software will be implemented to further investigate the refinery support systems and understand the effects of varying process variables.

**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 use of electrical measuring instruments as well as reinforcing theoretical concepts.

**Prerequisite(s):** ET1100

**ET2100 - Electrotechnology**
This course covers advanced topics in AC and DC circuit analysis as well as an introduction to DC machines and transformers. It will provide the necessary background for students to enter second year Electrical and Electronics programs.

**Prerequisite(s):** ET1100, MA1101

**ET2150 - Advanced Circuit Analysis**
In this course, learners will review techniques of differential equations, first order and second order: integral combinations; growth and decay problems; the analysis and solution of source free RL and RC circuits; driven RL and RC circuits using differential integral calculus; sinusoidal analysis; the concept of phasors, and steady state response. The learner will learn mathematical techniques and apply these to the concepts to analyze and solve differential equations. Topics include waveform analysis and synthesis, time domain analysis, solution of differential equations using Laplace transforms, application of Laplace transforms to solve electric circuits, and derivation of transfer functions. In addition, the following topics will be covered in this course: Fourier expansion of periodic function, even and odd, Fourier analysis of wave forms and their application to electrical signals, and impulse response.

**Prerequisite(s):** MA2100; ET1151 or MP2140

**FY1200 - 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

**FY2110 - 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.

**FY2210 - 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.

**FY2121 - 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):** FY2210, FY1310

**FY2510 - 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. Canadas Guidelines for Health Eating, Recommended Nutrient Intakes, and Canadas Food Guide are presented. This course reviews the digestive system, the absorption and transport of nutrients, and common digestive problems. A study of the macronutrients (carbohydrates, proteins, fats) and micronutrients (vitamins and minerals) as well as their sources, functions, requirements and deficiencies, digestion and absorption is also included.

**Prerequisite(s):** FH1120

**FH1121 - Nutrition II**
This course is a continuation of Nutrition I. Topics include water and major minerals, alcohol and nutrition, energy balance and weight management. Nutrition through the entire lifecycle is studied.

**Prerequisite(s):** FH1120

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FH1140 - Childhood Nutrition
This introductory course addresses the fundamental concepts of nutrition. An overview of the functions and requirements of the recommended nutrient intake is presented, followed by an introduction into the general principles of menu planning for children.

FH1200 - Principles of Physical Fitness
This course provides an introduction to principles of physical activity. Students will study the human anatomy with particular reference to skeletal and muscular systems of the human body, principles of training, exercise and weight control, fitness theory and active living and use of pedometers in physical activity. The course is designed for potential fitness leaders and active living programmers.

FH1230 - Physical Activity Programming for Older Adults
This course provides students with an introduction to physical activity programming for the older adults. It is designed to enable students to plan and evaluate a variety of programs for older adults based on current knowledge and trends.

FH1340 - Health & Safety
This course will address the attitudes and knowledge early childhood educators must have in order to support the health and safety needs of children and themselves. Students will develop a working knowledge of policies and practices that adhere to provincial legislation and standards with regards to the health and well-being of children, and the establishment of positive habits and attitudes toward health and safety. Students will recognize symptoms of ill health and determine appropriate care for a sick child in a group setting. Students will recognize safety hazards and plan to minimize risk. Students will explore the issue of child maltreatment and recognize their responsibilities as early childhood educators with regards to recognition and reporting.

FH1350 - Physical Fitness & Lifestyle Management
This course 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.

FH1360 - Childhood Nutrition
This introductory course addresses the fundamental concepts of nutrition. Students will study the basic nutrients and learn about the recommended daily intake for children. Students will develop a working knowledge of Canada's Food Guide and utilize this knowledge in the planning and preparation of healthy snacks and meals for children.

FH1500 - Personal Wellness
Optimal wellness is critical to a students success in the workplace and in life. Students will be introduced to the eight dimensions of wellness: physical, mental, social, spiritual, intellectual, environmental, occupational and financial. Students will determine their own wellness level and be encouraged to make healthy lifestyle choices. The goal is for the student to achieve a sense of balance in life which is attained through high levels of understanding and being active in each dimension of wellness.

FH2120 - Clinical 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

FM2201 - Mechanics (Dynamics)
This course in mechanics introduces the fundamental concepts of dynamics and builds on the basic principles of statics presented in previous courses. This course provides students with the basic requirements for the analysis of engineering problems and for understanding the design principles of various machines and mechanisms. The topics studied include kinematics and kinetics of particles, impulse and momentum, kinematics of rigid bodies, forces and acceleration, balancing, work and energy, and mechanical vibrations. Prerequisite(s): CF2540, FM2200

FM2320 - Fluid Mechanics
The learner will learn the theory and solve problems pertaining to pressure measurement, fluid flow, head loss, and conservation of energy. The learner will apply this knowledge during the analysis of series and parallel piping systems, and in the selection of pipe fittings and pumps. Prerequisite(s): MA1101, PH1101

FM3100 - Fluid Power (Hydraulics/Pneumatics)
This is an intermediate level course designed primarily for students in the Electrical and Mechanical Engineering Technology Programs. Prerequisite(s): PH1101; EG1520 or DR2320

FM3200 - Machine Design
This course is an introduction to the primary considerations in the design of machines as they relate to each other, to their operators and to the environment. Machines will be seen as converters of energy and as the extension of human power. The composition and characteristics of machines will be presented. The underlying principles of mechanics of machines and strength of materials demonstrated enabling the student to participate in the design of machinery. The student will gain practical manufacturing exposure and experience. Prerequisite(s): CF2540

FM3220 - Machine Design
This course extends generic machine design concepts presented in FM3200 by introducing students to typical industrial application components used for machine design. Emphasis is placed on students being able to follow industry practice in the design, specification and selection of standard machine design components. Prerequisite(s): FM3200

FN1100 - Personal Finance
This course is an introduction to the basic principles and concepts of personal finance. The course is organized into three parts: financial planning, financial security, and credit. In Part 1, financial planning, the student learns how to make financial plans for saving and spending; the functions of wills; and the basics of the taxation system. In Part 2, financial security, the student examines economic risks and ways to minimize them. In Part 3, credit, the student explores the complexities of consumer credit.

FN2110 - Business Finance
This course is an intermediate course in the complexities of business financial management. The student will explore financial analysis and planning, working capital management, capital budgeting, and long-term financing. The course will integrate both short-term and long-term financial considerations, as well as concepts from accounting, statistics, and economics. Prerequisite(s): AC2260

FN2111 - Business Finance II
The purpose of this course is to extend knowledge and understanding of finance principles by focusing on various problems and decisions confronting the financial manager. Specific topics include sensitivity analysis, corporate planning models, financial statement analysis and forecasting; short and long-term financing; commercial banking; capital budgeting; dividends and dividend policy; options, swaps, futures, forwards, firm valuation; and mergers and acquisitions. The student will conduct an in-depth study of issues and tools that financial managers use in financial planning and strategic management. The course will use real-world cases to teach the material. Prerequisite(s): FN2110

FN2160 - Investments-An Overview
Students are expected to be familiar with the different investment avenues available to investors who are interested in optimizing their return on their investments. This course will address the concept of risk management and its application to the average investor and will provide an overview of the different investment strategies and their potential risks and returns. Prerequisite(s): MA2400

FR1230 - Forest Fire Management
This course is an introductory course and will provide the student with basic information on activities concerned with the protection of forests from fire. Prerequisite(s): FI1400

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

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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

**Co-requisite(s):** SU1550

**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 assess forest characteristics using GIS and GPS. The application of statistical analysis to timber cruises, forest inventories, growth prediction and site classification is the central focus. The measurement of forest products is addressed, as is the assessment of non-timber values of the forest ecosystem.

**Prerequisite(s):** FR1330, MA1670, FT1400

**Co-requisite(s):** FR1560

**FR1400 - Wood Products**
This course deals with the importance of the wood products industry in our society. The identification characteristics and uses of Canadian woods are studied. As well, the fundamental wood properties and the technical requirements for various wood products are studied.

**FR1550 - Environmental Impacts of Forest Practices**
Analyze principles and practices of a forest industry in terms of sustainable development.

**FR1560 - Timber Harvesting I - Roads**
This second year course uses skills learned in Forest Surveying for the collection of field notes for various labs - especially road location. Students are introduced to forest road construction terms, environmental guidelines, and planning and operating practices. Students plan, do reconnaissance, and lay out a forest road.

**Prerequisite(s):** SU1710, FT1400

**Co-requisite(s):** FR1331, FT1401

**FR1561 - Timber Harvesting II**
This course is a follow-up to Timber Harvesting I that covers road construction in the woods. This course deals mostly with harvesting and trucking forest products. Emphasis is on environmental management of woodlands operations as well as logging system productivities and costs.

**Prerequisite(s):** FR1560

**FR2340 - Hydrology**
This course has been designed to provide students with principles and application methods related to water resources. The content extends from a review of hydrological processes and principles in general, through 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 to 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**
This course involves the study of the major forest enemies of North America (excluding fire). Emphasis will be placed on insects which damage or benefit the forest and on biotic and abiotic causes of forest disease. Prevention and protection measures of above are covered. Field collection and diagnosis are emphasized, stressing the importance of signs leading to early detection.

**Prerequisite(s):** EY2210, FR1330

**FR2360 - Silviculture**
This course involves a study of a wide range of silviculture practices as applied to the establishment and tending of forest stands. This includes the design, conduct and monitoring of operational programs in planting, seedling, site preparation, tree seed procurement and improvement, and nursery production as well as stand manipulation including pre-commercial thinning, commercial thinning, pruning, and other vegetation control methods.

**Prerequisite(s):** FR1330

**Co-requisite(s):** EY2211, FT1401

**FR2430 - Wildlife Management**
An introduction to the basic Wildlife Management principles, concepts and techniques as they relate to big game, fur bearers, small game, waterfowl, inland fishing, non-game and endangered species. Lectures concentrate on principles and concepts while labs are designed to apply principles 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):** FR1330

**FS1101 - Family Services II**
Family Services II is the second course in the three course series. Family Services II will focus on family needs by looking at the challenges families face in today's society. Some of these challenges include balancing paid and unpaid work, poverty, stress, violence, abuse, divorce, blended families, and dealing with empty nests and aging parents. Often these challenges create many needs for families that require outside intervention or assistance. The purpose of this course is to provide students with the knowledge and practical skills to understand the needs of families and to be able to identify when families are not coping effectively. Students will learn appropriate strategies for dealing with dysfunctional families while gaining an understanding of the diversity of challenges and the diversity of solutions.

**Prerequisite(s):** FS1100

**FS2100 - Family Services III**
Family Services III is the third and final course in the family services series. Family Services III will focus on family supports by introducing students to social welfare policies and programs. The course will provide an historical overview of social welfare policies and programs in both public and private sectors. Students will learn how these policies and programs outline the services that are available to meet the needs of families. The purpose of this course is to provide students with the knowledge and practical skills to assist families in being functional by providing emotional support, listening, understanding and demonstrating empathy for the situations that many families are dealing with. Students will learn the roles associated with providing support to families.

**Prerequisite(s):** SU1320, SU1500

**Co-requisite(s):** SU1321

**FT1240 - Surveying Field Camp**
This is a one week field course 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 and successful completion of the group projects is emphasized.

**Prerequisite(s):** SU1320, SU1500

**Co-requisite(s):** SU1321

**FT1250 - Hydrographic Field Camp**
This camp is a hands-on session where the data gathering skills learned in Hydrographic Surveying are reinforced by practical field work. A Hydrographic survey is undertaken for a project area. The project is designed, the data gathered and the final project compiled to Canadian Hydrographic Service standards.

**Prerequisite(s):** SU2320

**Co-requisite(s):** SU1541; SU3300; SU3500

**FT1260 - Multidisciplinary Field Camp**
This camp is a hands-on session where the data gathering skills learned throughout the Geomatics/ Surveying Engineering Technology (Co-op) program are reinforced by practical field work. The camp will involve different projects with each project involving a different aspect of the program. The projects will be designed to gather and process data and compiled the data into maps and a report. Maps and reports will be submitted to instructor(s) and are produced based on industry standards.

**Prerequisite(s):** SU2320; SU1540

**Co-requisite(s):** SU1541; SU3300; SU3500

**FT1340 - Civil Engineering Technology Camp**
This course introduces the learner to the practical elements of various construction processes. In addition, this course provides the learner with an insight into on-site supervision and construction.

**FT1400 - Forestry Field Camp**
A two week field camp is conducted at the end of the intersession semester. This camp is designed to enable students to take part in major practical exercises using standard practices of measurement and data collection in an operational setting. Throughout the two week period, the proper care of equipment, safety practices, and basic skills such as map interpretation, compassing, vegetation identification, ecosystem analysis, etc. are emphasized. Major topics reinforce prior learning from the second semester and intersession.

**Prerequisite(s):** FR1330, SU1550, SU1710

**Co-requisite(s):** FR1230

**FT1401 - Forestry Tour/Camp**
This five day field tour is designed to insure that the students have an opportunity to visit and investigate a number of special forestry facilities and operations across the province. Visits include such unique operations as the Provincial Nursery at Wooddale,
Newfoundland’s largest sawmill in Glenwood, and the Fire Center and Thomas Howe Demonstration Forest in Gander.

Co-requisite(s): FY2211, FR2360, FR1560

FT1410 - Fish and Wildlife Field Camp
A two-week field camp conducted at the end of the intersession semester. This camp is designed to enable students to take part in major practical exercises using standard practices of measurement and data collection in an operational setting. Throughout the two-week period they work with equipment, safety practices, and basic skills such as map interpretation, compassing, vegetation identification, trapping, and other wildlife techniques are emphasized. Major topics reinforce prior learning from the second semester and intersession.

Prerequisite(s): FR1330, SU1550

Co-requisite(s): RM1400, RM1500

FT1430 - Fish & Wildlife Camp II
A one-week camp conducted during the third semester. This camp is designed to enable students to participate in research/projects being undertaken by a major external agency (National parks, Canadian Forest Service, Provincial Wildlife and DFO). Students are involved in the accumulation of field data for these projects.

Co-requisite(s): RM2200

FT1620 - Petroleum Field Camp and Safety
This course is designed to provide students with practical knowledge in the area of drill rig operation. This training is provided on a land-based drill rig. Training is also provided in sour gas handling (H2S), Workplace Hazardous Materials Information System (WHMIS), First Aid and Transportation of Dangerous Goods (TDG).

Prerequisite(s): SP2410, PM2110

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 a©eegaps£.

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 student 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): FV1200

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

FV1290 - Journalism Field Work
Journalism students work for four weeks at a professional news organization, applying and building upon the training they received in their first two semesters. Students pursue learning objectives related to their individual career goals while receiving on-the-job training. In conjunction with a field supervisor (who is an employee in the placement agency), the instructor supervises and evaluates the students progress.

Prerequisite(s): JL1821, JL1511, JL1430

FW1390 - Journalism Field Work (Post Diploma)
Post diploma journalism students work for four weeks at a professional news organization, applying and building upon the training they received in their first two semesters. Students pursue learning objectives related to their individual career goals while receiving field work training. In conjunction with a field supervisor (an employee in the placement agency), the instructor supervises and evaluates the students 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 students progress. Students are responsible for completing and submitting field placement documentation for evaluation and grading.

Prerequisite(s): CM1100, CM2100, CS1120, CS2420, HRT120, HRT1210, 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 students progress. Students are responsible for completing and submitting field placement documentation for evaluation and grading.

Prerequisite(s): FW1450

FW1470 - Field Placement I
This course consists of a five-week placement in a hospitality setting in a voluntary capacity. The program instructor will assist each student in securing a placement in a hospitality setting which can meet the students personal interests, goals and skill level. In conjunction with the field supervisor, the program instructor supervises and evaluates the students progress.

Prerequisite(s): WHMIS, NFSTP, valid First Aid/CPR Certificate, Clear Certificate of Conduct, updated Immunization Record, updated Resume, successful completion of all Semester 1 and 2 courses and a signed completed field placement contract.

FW1600 - Field Placement I
During field placement, students begin to link theory to practice. Students will participate in seminars to learn basic knowledge and skills necessary for a successful placement experience, and spend a block of time at a field placement site. In this first supervised placement, the focus will be on students becoming familiar with the role of the early childhood educator and the program itself. Students will practice interacting and responding in positive ways to children, and engage in developmentally appropriate learning opportunities.

Co-requisite(s): FW1450

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play with individual and small groups of children. Please note that time will be spent in the Colleges demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.

**Prerequisite(s):** Valid First Aid Certificate
**Co-requisite(s):** EE1180, EE1340, EE1290, EE1420, FH1340

**FW1601 - Field Placement II**

During this second supervised field placement students will continue to link theory to practice, participating fully and assisting with all aspects of the program. It is expected that confidence and competence is increasing in interacting with and guiding children's behaviour, and working with staff, families and community members. Students will begin to add developmentally appropriate materials to the learning environment to support children's play, and will plan and implement a variety of developmentally appropriate activities for individual and groups of children. The importance of an inclusive, child-centred, active learning approach will be reinforced. Please note that time will be spent in the Colleges demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.

**Prerequisite(s):** EE1110, EE1340, EE1420, EE1340, EE1290, EE1600

**FW1710 - Supervised Field Placement Experience I**

Supervised field placement is an integral part of the total curriculum allowing students the opportunity to apply knowledge and training gained from the semester and constitutes a basic preparation for a wide range of professional practice for full-time registered students. The course instructor will assess students throughout the semester and place accordingly in a variety of approved settings to display leadership qualities and work independently using skills acquired from semester for four weeks (160 hours) following course training. Students will be placed in instructor approved agencies such as: long term care facilities, hospitals, municipal recreation departments, and community agencies. Throughout the semester, students will review field placement requirements and documentation, types of placements, and professional conduct. The instructor supervises and evaluates the student’s progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** Valid First Aid/CPR Certificate, Valid Certificate of Conduct, Updated Immunization Record
**Co-requisite(s):** FH1200, RS1230, RS1100, RS1280

**FW1711 - Supervised Field Placement Experience II**

This course is the second of four supervised field placement experience courses. It is an integral part of the total curriculum allowing students to building on experiences gained from FW1710 while providing students the opportunity to apply knowledge and training gained from winter semester. As well, students will be prepared for placements based on standards acceptable to the industry. Course instructor will assess students throughout the semester and place accordingly in a variety of approved settings to display leadership qualities and work independently using skills acquired from the semester which constitutes a basic preparation for a wide range of professional practices. Students will review previous placement experiences, types of placement and placement documentation issues and concerns. The instructor supervises and evaluates the student’s progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** FW1710, RS1280, RS1100, Valid First Aid/CPR Certificate, Valid Certificate of Conduct, Updated Immunization Record
**Co-requisite(s):** RS1250, RS1450

**FW2310 - Field Placement III**

During the third supervised placement in an early childhood program the focus is on students working in teams along with staff to implement the program. Students will continue to link theory to practice as they plan inclusive activities for children in small groups and based on the interests of the individual child. Students are expected to demonstrate initiative with regards to independently facilitating the play of individual children and small groups.

**Prerequisite(s):** EE1301, EE1720, FW1311

**FW2311 - Field Placement IV**

During the fourth supervised placement the focus is on students working in teams to take responsibility for all aspects of the day to day operation of the early childhood program. Students will continue to link theory to practice as they plan and implement the routines, schedule, program and interact with parents and community service providers. They will collaborate with staff to prepare and implement plans that meet the needs of all children. Students are expected to demonstrate competence with regards to independently facilitating the play of individual children and small groups. With the guidance and assistance of the program supervisor, students will modify and adapt materials to include all children in activities and routines. It is also expected that students will collaborate with the program staff to implement specific plans for individual children, including those with challenging behaviours.

**Prerequisite(s):** EE 1800, EE2160, EE2270, FH1140, FW2310

**FW2470 - Field Placement II**

This course consists of a five-week placement in an institutional setting in a voluntary capacity. The program instructor will assist each student in securing a placement in an institutional setting which can meet the students personal interests, goals and skill level. In conjunction with the field supervisor, the program instructor supervises and evaluates the students progress.

**Prerequisite(s):** FW1470, WHMIS, NFSTP, valid First Aid/CPR Certificate, Clear Certificate of Conduct, updated Immunization Record, updated Resume, successful completion of all Semester 3 and 4 courses and a signed completed field placement contract.

**FW2600 - Field Placement III**

During this third supervised field placement the focus is on students working in teams along with staff to implement the program. Students will plan cumulative play experiences and utilize webbing as a tool for planning and documentation of the curriculum. Students are expected to demonstrate initiative with regards to independently facilitating spontaneous and pre-planned play experiences for individual children, small groups, and whole groups. Students are expected to demonstrate an inclusive approach to curriculum and interactions with families. Please note that time will be spent in the Colleges demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.

**Prerequisite(s):** EE1181, EE1341, EE1421, FH1360, EE1360, EE1440, EE1480, EE2500, FW1601

**FW2601 - Field Placement IV**

During this fourth supervised field placement, students are expected to demonstrate increased competence in planning and implementing the routines and schedule, preparing and implementing a cumulative curriculum to meet the needs of all the children, and interacting with parents and community service providers. With guidance, students will implement specific supports for children with challenging behaviours. Students will promote the philosophy of inclusion in all aspects of their interactions with children, families, and the community. Please note that time will be spent in the Colleges demonstration child care centre as part of the series of block placements. Opportunities to work with a variety of age groups across the series of field placement courses will be provided where possible.

**Prerequisite(s):** EE2180, EE2255, FW2600

**FW2710 - Supervised Field Placement Experience III**

The purpose of this supervised field placement experience is to provide experience in administration practices and procedures through placement in 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 students progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** FW1701, Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record, Current Resume.

**FW2711 - Supervised Field Placement Experience IV**

The purpose of this supervised field placement experience is to provide experience in administration practices and procedures through placement in a community based agency/organization. Students review previous placement experiences, types of placement, and placement documentation issues and concerns. The instructor supervises and evaluates the students progress in conjunction with a field supervisor (who is normally an employee in the placement agency).

**Prerequisite(s):** FW1710, Valid First Aid/CPR Certificate, Certificate of Conduct, Updated Immunization Record, Current Resume

**FW2800 - Field Placement**

Students will work in the graphics industry under the direct supervision of an employer; with their progress being monitored and evaluated by faculty in the Graphics programs. The supervised field placement is an integral part of the total curriculum in the Graphic Design and Graphic Communications programs, and provides students with direct experience in the industry that can lead to a wide range of professional practices.
Prerequisite(s): Successful completion of all program courses in Semesters 1 to 5, SD1180

**FW2801 - Field Placement Reflection**
Students will reflect upon and evaluate their field placement experience. Based upon this reflection and evaluation, students will have an opportunity to revisit skill-sets and areas for development.
Prerequisite(s): FW2800

**FW2810 - Field Placement**
Students will work in the graphics industry under the direct supervision of an employer; with their progress being monitored and evaluated by faculty in the Graphics programs. The supervised field placement is an integral part of the total curriculum in the Graphic Design and Graphic Communications programs, and provides students with direct experience in the industry that can lead to a wide range of professional practice.
Prerequisite(s): Successful completion of all program courses in Semesters 1 to 5, SD1180

**GA1220 - Color Management**
Students will learn to effectively manage and use color in a digital graphic arts environment. Students will learn effective color management principles on both Apple Macintosh and PC platforms, and cover color systems and translations between color gamuts in detail. Students will also gain a clear understanding of the elements and principles of color theory, and how color can be used to create more effective images for the graphics industry.
Prerequisite(s): GA1170

**GA1230 - Finishing & Bindery I**
Students will gain an understanding of the background and methods used for finishing and bindery and how they apply to graphic communications.
Prerequisite(s): GA1170, GA1230

**GA1231 - Finishing & Bindery II**
Students will gain an understanding of the advanced methods used for finishing and bindery as it applies to graphic communications.
Prerequisite(s): GA1170, GA1230

**GA1240 - Digital Page Layout I**
Students will receive hands-on skill development in printing to digital devices. Students are required to become proficient in the skill areas involved in providing short run, full-color documents and on-demand printing.

**GA1321 - Digital Printing II**
Students will gain an understanding of the principles of digital practices. The focus will be on advanced machine operation and quality control.
Prerequisite(s): GA1320, GA1421

**GA1350 - Motion I**
Students will be introduced to the principles and elements of motion design through studio practices at beginning and advanced levels. Students will be exposed to the first phase, â€œtype in motionâ€ , which emphasizes the relationship between typography principles and animation fundamentals. Students will then gain knowledge during the second phase when an advanced applied approach to the language and principles of motion is explored. Students will also develop skills in digital creativity throughout this course.
Prerequisite(s): GA1320, GA1421

**GA1351 - Motion II**
Students will expand upon the principles and elements of motion design studied in Motion I. Students will continue with studio lessons and practices at an advanced level and implement a practical demonstrable skill set in motion graphics.
Prerequisite(s): GA1350

**GA1420 - Digital Page Layout I**
Students will learn the basic technique of assembling visual elements.

**GA1421 - Digital Page Layout II**
Students will learn electronic page assembly using the techniques of page layout software on the computer. Students will learn about the flexibility of the page layout software as it applies to production for graphic communications.
Prerequisite(s): GA1420
Co-requisite(s): GA2570

**GA1430 - Page Composition I**
Students will gain an understanding of basic page composition as it applies to the graphics industry. Students will explore topics which emphasize developing digital layout skills using industry-standard software tools, while exploring different types of graphic design projects for traditional and digital printing processes.
Prerequisite(s): GA1140, GA1420

**GA1440 - Illustration I**
Students will be introduced to the basics of illustration as it is used in the graphics industry, and will develop traditional and digital illustration skills. Observation and experimentation with current traditional and digital graphic communications drawing tools, and an emphasis on both print- and screen- based graphic design projects are the focus of this course.

**GA1450 - Digital Printing II**
Students will gain foundational skills required to use equipment and software to record, store, and manipulate digital images. Students will also gain an understanding of the hardware and skills required for the graphics industry.
Prerequisite(s): GA1170, GA1520

**GA1620 - Offset Printing I**
Students will learn the basic operation of small offset duplicators.
Prerequisite(s): GA1170

**GA1640 - Illustration I**
Students will further develop their illustration skills using vector-based drawing software current in the graphics industry. An emphasis will be placed on complex projects that incorporate vector and bitmap illustration, as well as typographic and layout skills.
Prerequisite(s): GA1140, GA1120

**GA1740 - Textiles Graphics & Imaging I**
Students will gain an understanding of the techniques and methods of transferring digital images to a variety of textile products. The emphasis will be on creation, output, and production of graphic images.
Prerequisite(s): GA1140, GA1420

**GA1741 - Textiles Graphics & Imaging II**
Students will gain advanced computer and production skills in the program area. Students will focus on the
different types of software for page layout. Students using advanced electronic page assembly software on GA2420 - Digital Page Layout III

**Prerequisite(s):** GA1140, GA1421

GA1751 - Display Graphics & Assembly II
Students will gain advanced skills in display graphics and assembly. Student focus will be on equipment maintenance, team building, and productivity.

**Prerequisite(s):** GA1750

GA1880 - Business Practices
Students will develop an understanding of common business practices in the graphics industry. Students will be introduced to the business requirements of freelance graphic design work, including pricing, estimating, specification-writing, subcontracting, contract and copyright law, time management, taxation and self-promotion.

**Prerequisite(s):** GA1750

GA1890 - Business Practices
Students will develop their understanding of common business practices in graphic communications. Students will focus specifically on the business requirements of graphic communication work, including pricing, estimating, specification-writing, subcontracting, contract and copyright law, time management, taxation and promotion.

**Prerequisite(s):** GA1321

GA2230 - Digital Printing III
Students will gain the skills required to ensure the equipment is functioning to equipment manufacturers specifications. Students will focus on efficient machine operation and maintenance.

**Prerequisite(s):** GA1321

GA2350 - Motion III
Students will be introduced to the principles and elements of motion design through studio practices at beginning and advanced levels. Students will be exposed to the first phase, type in motion, which emphasizes the relationship between typography principles and animation fundamentals. Students will then gain knowledge during the second phase when an advanced applied approach to the language and principles of motion is explored. Students will also develop skills in digital creativity throughout this course.

**Prerequisite(s):** GA1351

GA2400 - Production for Designers
Students will receive a basic overview of production methods and equipment used in the graphics industry. After completion of this course, students will have an understanding of the equipment with supervised operation.

**Prerequisite(s):** GA1170, GA1431, GA1641

GA2420 - Digital Page Layout III
Students will learn the techniques of page layout using advanced electronic page assembly software on the computer. Students will be working with advanced features of the software plus the exploration of different types of software for page layout. Students will also explore and develop electronic documents that will be published to mobile devices.

**Prerequisite(s):** GA1241, GA2570

GA2430 - Page Composition III
Students will gain an understanding of advanced layout as it applies to the graphics industry by working on electronic document design and production. Students will explore topics which emphasize enhancing digital layout skills while using industry-standard software tools, and while exploring different types of graphic design projects for screen-based documents.

**Prerequisite(s):** GA1431

GA2570 - Production Workflow
Students will gain the skills required to develop workflow methods while maintaining quality control. Students will develop estimate sheets, quotation sheets, job dockets, and a tracking system while using computer software and workflow devices developed by the student.

**Prerequisite(s):** GA1431

GA2620 - Offset Printing III
Students will learn to apply the principles and practices of the offset press.

**Prerequisite(s):** GA1621

GA2640 - Illustration III
Students will further develop their illustration skills using vector-based and bitmap-based drawing software current in the graphics industry. Students will be working on advanced projects that incorporate vector-based and bitmap-based illustration, typographic and layout skills for both print and screen-based (static and motion-based) graphic design projects.

**Prerequisite(s):** GA1641

GA2720 - Design Management Identity
Students will gain advanced understanding of and experience with managing and developing complex identity systems for the private, governmental and non-profit sectors.

**Prerequisite(s):** MR1340, VA1231

GA2740 - Advanced Graphics Imaging
Students are encouraged to research new technologies in graphics imaging. Students may develop research or merge with current imaging methods. Students will receive a combination of lectures and self-study followed by a presentation of the research compiled.

**Prerequisite(s):** GA1740, GA1750, GA2420, GA1321, GA1520

GD1110 - Level Design I
Good level design strives to bring out the best game play in a game, provide an immersive experience, and sometimes to advance the storyline. Level Design I will introduce students to the tools and concepts used to create levels for games. The course will incorporate level design and architecture theory, critical path analysis, game balance and storytelling as they relate to games.

**Prerequisite(s):** GD1200, GD1300

GD1111 - Level Design II
Virtual environments are a big part of any game. They require combining architecture with interactions to create dramatic, engaging, aesthetic and functional environments. By combining principles of design with existing level design knowledge, students will create immersive interactive 3D environments. The process of 3D level design planning, object creation, lighting and texturing are among the topics focused on in this course.

**Prerequisite(s):** GD1110, MM2670

GD1200 - Digital Visual Design
This course provides the foundation for visualizing and applying the principles and concepts of design, color, and visual expression to interactive digital work. It introduces the theory and hands-on practice of creating artwork in digital media using Photoshop and pixel art through a project driven curriculum.

GD1250 - Interactive Narrative
Interactive Narrative studies the 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 todays 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.

GD1501 - Game Design Project I
This course focuses on producing video games using 3D software and game engines. Students work in a team environment and follow production practices employed in the video game industry to develop a multi-level game. Students will rotate the project management duties through the project development.
Prerequisite(s): GD1500, GD2300

GD1510 - Cinematography for Games
This course studies cinematography basics and how these techniques are applied to game design. How to tell a compelling story using camera placement based on character and environment is the main focus. Camera techniques such as panning and zooming are explored as well as how to use those techniques in games through examples. The importance of good lighting and how to handle transitions to new lighting arrangements are also examined. The essential areas of sound effects, interactive music, movement, and dialogue are also covered.

GD1520 - 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): GD1300
Co-requisite(s): GD1111

GD1600 - Business Of Game Development
The course will cover the basics of game business management. Topics to be covered include market analysis and marketing/sales, managing development, managing a budget, subcontracting work, negotiation, contracts, and intellectual property.
Prerequisite(s): GD1300

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 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): GD2200

GE1120 - Basic Geology
This is an introductory course designed to give the student a solid foundation on which to pursue the fundamentals of the science of geology. Topics covered include mineralogy, mineral identification, rock classification, and the economics of mineral resources. Class lectures are supplemented by extensive lab work where students study and examine minerals, and igneous, metamorphic, and sedimentary rocks.

GE1230 - Geology for Geomatics/Surveying ET
This is an introductory course in physical geology and exploration geophysics designed for learners in the Geomatics/Surveying Engineering Technology program. The course will begin with an introduction to physical geology and continue with an overview of tectonics and structure and will include weathering and erosion. The second component will be an overview of geophysical exploration tools. Laboratory work will relate directly to in class lectures.

GE1300 - Soil Fundamentals
This course is designed to expose students to the basic concepts of soil science, soil sampling and analysis, and soil classification.

GE1420 - Physical Environments
This is an introductory course designed to provide students with basic knowledge in both terrestrial and aquatic environments.

GE1500 - Petroleum Geology I
This is an introductory course in physical geology designed for students in the Petroleum program. It covers origin, distribution and deformation of igneous, metamorphic, and sedimentary rocks. Laboratory work includes the study of minerals and rocks with emphasis on identification and classification.

GE1501 - Petroleum Geology II
This course is a continuation of Petroleum Geology I. It covers geologic processes occurring in and on the earth and structural geology. Laboratory work includes the study of topographic maps and profiles, introduction to construction of sub-surface geology maps and sections and field trips to places of geologic interest on the Avalon Peninsula.
Prerequisite(s): GE1500

GE2400 - Physical Geology
This course emphasizes the external and internal processes of the earth. The external processes of geomorphology involve erosion and landscape development. The internal processes involve: earthquakes, the earths 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): PM2110

GI1100 - Historical Geography | Pre-history •
This course begins with an overview of the geographic location and climatic conditions of the island of Newfoundland and Labrador, since the last glaciation. A study of the indigenous peoples of our province will be completed. The lifestyle, the environmental factors affecting settlements patterns and location of settlement, the food sources, and the religious beliefs of each culture will be discussed.

GM1105 - Aircraft Plumbing (S)
This S course will enable the learner to identify and manufacture the different types of pressure and vacuum lines and hoses used on the various aircraft systems.
Prerequisite(s): GM1120

GM1120 - General Maintenance Procedures (M, E, S)
This M, E, and S course is to inform the learner of the responsibilities and safety requirements when working in an aircraft environment. This course will also enable the learner to select materials and instructions so they can successfully complete a maintenance task.

GM1130 - Aircraft Servicing (M,E)
This M and E course will enable the learner to work safely and efficiently in an aviation maintenance environment. This is to enable learners to position aircraft, select materials and instructions that will provide for the safe completion of a maintenance task.

GM1140 - Standard Work Shop Practices (M,E,S)
This M, E, and S course is designed for learners entering into the Aviation Programs. This course enables the learner to obtain the knowledge and skills required to select and use hand and power tools, precision measuring instruments, shop equipment and the knowledge to be able to identify different types of aircraft hardware.

GM1320 - Aircraft Weight and Balance (M, E)
This M and E course is designed to provide a learner with an in depth knowledge of Aircraft Weight and Balance. Learners will be required to differentiate between fixed wing and rotary wing weight and balance, as well as longitudinal and lateral centre of gravity. Learners will interpret manufacturers specifications and procedures for weighing aircraft and compute a weight and balance report.
Prerequisite(s): GM1120, GM1130

Available through Distributed Learning
Available through correspondence
This course presents principles of database processing and 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.

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. A series of laboratory exercises provide students with hands-on experience using current software applications.

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 tedious 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.

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.

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and within the context of a variety of application areas. In addition, this course will apply methods for determining appropriate use of GIS within organizations. Conceptual material presented in lectures will be placed in an applied context through laboratory exercises designed to strengthen practical understanding and awareness of GIS methodology.

**Prerequisite(s):** GS1310

**GS2510 - Spatial Statistics**

Following a review of basic statistics, this course introduces the student to the fundamentals of statistical methods relevant to geographic data and spatial analysis. The course begins with a review of descriptive and inferential statistics and their application to geographic data and processes. Other course topics include: Distribution of Points, Trend Analysis, Measures of Spatial Dependence and Error Estimation of Geographic Data.

**Prerequisite(s):** GS1710

**GS2910 - Advanced Remote Sensing**

Airborne/space-borne digital mapping systems will be reviewed. In doing so, students will be able to use current imaging and GIS software to compile a 3-D map. Increasing utility of the data from space-borne sensors will be reviewed, and in parallel, students will perform advanced fully-automated (as well as semi-automated) data extraction.

**Prerequisite(s):** GS1510

**GS3110 - Advanced Topics in Geomatics**

Advanced topics in Geomatics is designed to ensure that students are exposed to emerging issues and trends in the field as well as the most current technologies. Course topics will be selected through the input of advisory committee members, departmental faculty and students as well as through assessment of the professional literature and publications. Activities will include guest lectures, demonstrations of new technologies, applications and software, workshops, student presentations, field trips and, where possible, attendance at an external conference or workshop. The course is an important team project focusing 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.

**HM2160 - Cost Controls**

This is an introductory course in the concepts of cost controls. The course deals specifically with food and beverage control skills and techniques, labour cost controls and staff scheduling as practiced in food service in a computerized environment (Excel and Simply Accounting). Both the Operating and Capital budgets are discussed.

**Prerequisite(s):** MA1400

**HM2170 - 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.

**HM2180 - 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 todays managers.

**HM2280 - Supervision in the Hospitality Industry**

This course explores practical and effective management skills for the hospitality workplace. Emphasis is placed on the technical and human relations skills considered essential for todays 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 management the budget; scheduling, coordinating food and beverages, selecting decor, themes and entertainment; media, and staffing.

Available through Distributed Learning  
Available through correspondence
HN1100 - Industrial Relations •
This is an introductory course in the theory and practice of industrial relations in Canada. The student will explore: industrial relations models; the structure of the Canadian Labour movement; the process involved in organizing a union and establishing union recognition; the collective bargaining process and the administration of a collective agreement; the various dispute resolution methods and industrial dispute tactics; and the union impact on compensation, productivity, and management and strategic choice. Theoretical learning will be reinforced with case studies and research of current industrial relations topics.

HN1200 - Human Resource Management •
Human resource management is concerned with the effective use of employees to achieve organizational goals.

HN1230 - Human Resource Management I •
This is an introductory course in the fundamental principles and practices of strategic human resource management today. The student will explore the law and human resource management, human resource planning, job analysis and job design, recruitment, selection, socialization and orientation, training, development and career planning. Theoretical learning will be reinforced with case studies and current article reviews.

HN1240 - Human Resource Management II •
This is an introductory course in the fundamental principles and practices of strategic human resource management. The student will explore performance management, direct compensation, indirect compensation (employee benefits and services), communication and employee relations, workplace safety and occupational health, industrial relations framework, workforce diversity and international human resource management, and human resource metrics. Theoretical learning will be reinforced with case studies and current article reviews.

Prerequisite(s): HN1230

HN1400 - Occupational Health & Safety •
This is an introductory course in the fundamental principles and practices of occupational health and safety (OH&S). A solid understanding of OH&S issues, legislation and programs is essential to create an effective OH&S program. The student will explore development of OH&S; costs of accidents, injuries and workplace illnesses; legislation and regulation; hazards and agents; hazard recognition and assessment; workplace compensation; accident investigation; and OH&S program management. Students will have the opportunity to apply various OH&S practices and techniques using case studies and simulations and obtain WHMIS certification.

HN2100 - Collective Agreement Administration •
This course will examine in depth the issues involved in the interpretation, application and administration of a collective agreement. The student will explore public service collective bargaining, regulating the collective agreement, collective agreement administration, collective agreement clauses and the legal issues in interpreting and administering collective agreements. Students will have the opportunity to apply and interpret various collective agreement administration techniques, practices, and clauses using case studies and application assignments.

Prerequisite(s): HN1100

HN2110 - Dispute Resolution •
This course will explore the various types of third-party assistance available to both management and union in resolving disputes. The student will explore union management cooperation; industrial conflict/disputes; conciliation/mediation; picketing/buyouts; 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, UW1210

HN2130 - Recruitment and Selection •
This course will examine in some depth the current process, issues and practices involved in the recruitment and selection function. The student will explore: the staffing function; legal compliance; information sources for staffing; reliability and validity of performance predictors; recruitment; selection; 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): HN1240

HN2140 - Attendance and Disability Management •
This course will examine in some depth the current processes, issues and practices involved in attendance and disability management. The student will explore the various laws and regulations affecting the practice of attendance and disability management; attendance management systems/procedures; disability management programs; best practices in disability management; legal and ethical issues in disability management; disability management in a unionized environment; and attendance management and disability management policy/plan development. Students will have the opportunity to research various attendance management and disability management practices and procedures.

Prerequisite(s): HN1240 and HN1400

HN2150 - Training and Development •
This course will examine in some depth the current processes, issues and practices involved in the training and development function. The 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): HN1240

HN2200 - Strategic Compensation and Benefits •
This course will explain in some depth the key issues, processes and techniques involved in planning, designing, and administering a compensation and benefits strategy. The student will explore internal alignment; external competitiveness; performance management; administration/budgeting; role of government and pay discrimination; and employee benefits. Students will have the opportunity to apply various compensation practices and techniques with case studies and application assignments.

Prerequisite(s): HN1240
to explore personal suitability for human services.

HR1300 - Communications and Human Relations
Students will develop communication skills associated with effective human relations. Knowledge and skills will be developed in effective listening, and oral and written communications.

HR2120 - Public Relations for Hospitality Industry
This course concentrates on the skills necessary to develop public relations for business purposes. A combination of theories/concepts and practical illustrations are used to explain the application of public relations.

HR2130 - Industrial Relations
This course is designed to provide the learner with an introduction to the complexities of human interaction with respect to the work place. The course material will contribute to a better understanding of subject matter studied in other courses. This basic course in industrial relations emphasises on the role of the individual within an organization. Topics include, but are not limited to: self analysis, including attitudes, self-concept, communication style, motivations and organizational values; improving human relations, constructive self-disclosure, emotional control, positive reinforcement and first impressions; leadership and supervision, considering conflict resolution and management, prejudice, discrimination, and sexism. Learners will be required to attend and participate in weekly workshops, submit a structured, reflective journal.

HR2140 - Human Relations
This course is designed to provide the learner with an introduction to the complexities of human interaction with respect to the work place. The course material will contribute to a better understanding of subject matter studied in other courses. This basic course in human relations emphasises the role of the individual within an organization. Topics include, but are not limited to: self analysis, including attitudes, self-concept, communication style, motivations and organizational values; improving human relations, constructive self-disclosure, emotional control, positive reinforcement and first impressions; leadership and supervision, considering conflict resolution and management, prejudice, discrimination, and sexism.

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.

HR2230 - Human Relations
This course is designed to provide the learner with an introduction to the complexities of human interaction with respect to the work place. The course material will contribute to a better understanding of subject matter studied in other courses. This basic course in human relations emphasises the role of the individual within an organization. Topics include, but are not limited to: self analysis, including attitudes, self-concept, communication style, motivations and organizational values; improving human relations, constructive self-disclosure, emotional control, positive reinforcement and first impressions; leadership and supervision, considering conflict resolution and management, prejudice, discrimination, and sexism.

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 colleges 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 NFSTP (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, starchy, 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 practise the skills learned. Responsible service of alcohol and guest contact techniques are stressed.

HS1540 - Emerging Trends in Hospitality Tourism Industry
The aim of this course is to complement or supplement previous training, or to augment training in response to current trends or an unseen deficiency in student knowledge of specific topics. Topics are selected each time this course is offered. Campuses that are instructing the same program should try to coordinate the topic(s) offered in this course. The course may be delivered through 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 supervisor role in order to practice the skills of planning, organizing, directing, controlling and evaluating the production and service. Prerequisite(s): HS1151

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.

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

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.

**HY1350 - Newfoundland and Labrador History**
This course 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.

**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 newsworthy story ideas and develop them. The role of journalists and the journalist in society is examined through lectures, group discussions and written assignments.

**Prerequisite(s):** JL1110

**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.

**JL1420 - Journalism Ethics and the Law**
This course serves as an introduction for Journalism students to the Canadian legal system. Emphasis is placed on areas of the law encountered in journalism.

**JL1430 - Workplace Professionalism for Journalists**
This course is designed to provide students with the skills and knowledge necessary to prepare for the professional journalism workplace and to effectively work in a team environment. Students will prepare for their Internship 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):** JL1510

**JL1580 - Online Journalism**
This course enables students to combine print, radio and video journalism techniques into one product. Once they have successfully completed this course, students will be able to write articles specifically for the Internet; use various online and mobile reporting tools; prepare video and audio clips for streaming; prepare graphics and pictures for the Internet, use social and mobile media for journalistic purposes and produce their own journalism website with the aid of user-friendly software.

**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 publication, 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 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 publication, 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 news publication, a weekly youth news website, a weekly radio show and various video projects.

**Prerequisite(s):** JL1830

**JL1831 - Newsroom II (Post Diploma)**
This course is an accelerated version of the JL2820 (Newsroom III) and JL2821 (Newsroom IV) courses in the journalism diploma program. The purpose of the course is to give students an opportunity to apply the journalistic principles and practices they are learning elsewhere in the journalism program. The students work as part of a team in producing a provincial youth news publication, a weekly youth news website, a weekly radio show and various video projects.

**JL1832 - Newsroom III (Post Diploma)**
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 publication, a weekly radio show and various video projects.

**Prerequisite(s):** JL1821

**JL2820 - Newsroom IV**
Students will apply print, broadcast, photojournalism and online journalism techniques. They will produce a provincial youth news publication, a weekly online youth news website, a weekly radio show and various video projects as part of a team. Students will become more accustomed to daily deadlines.

**Prerequisite(s):** JL2820

**KB1150 - Keyboarding I**
This course develops keyboarding speed and accuracy. Keyboarding speed on straight copy material is

**Available through Distributed Learning**
developed to 30 net words per minute for five (5) minutes. Note: Students must achieve a typing speed of 30 net words per minute in order to pass KB1150. Students must achieve a typing speed of 40 net words per minute in order to pass KB1151.

**KB1151 - Keyboarding II**
This course continues to develop keyboarding speed and accuracy. Keyboarding speed is developed to a minimum of 40 net words per minute for five (5) minutes. Note: Students must achieve a typing speed of 40 net words per minute in order to pass KP1151.

**LW1100 - Business Law**
This course is an introduction to the Canadian legal system including the federal and provincial judicial systems, civil law, tort law, and contract law including types of contracts, offer and acceptance, breach of contract, discharge of contract, and capacity to contract.

**LW1130 - Tourism/Hospitality Law**
This course explores the legal responsibilities, obligations, and liabilities which may be encountered in the tourism industry. Students will gain valuable and practical insights into the nature of the relationships between innkeeper and guest, restauranteur 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.

**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.

**LW1520 - Law Enforcement Ethics**
This course will address and introduce principles of professional and ethical conduct in the law enforcement community. Emphasis is placed on dress, deportment, and conduct requirements, to aid participants in coming to terms with the possible conflicts between training, the law, and personal feelings and to provide support for officers in answering to the public on issues of ethics and behaviour.

**LW1600 - Construction Law**
This is an introductory course dealing with the application of tort and contract law as applied to the construction environment. Topics covered include but are not limited to a study of various federal and provincial acts that affect the construction phase of project development; the law of contract, insurance and bonding, the law of torts, construction claims, construction contract documents and ethics.

**LW1610 - Management and Construction Law**
This is a course dealing with management principles, professional relationships, 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 comprehension 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 patrolling, covert operations, use of decoys, powers of arrest, search and seizure, and interviewing techniques, as well as preparation for court proceedings and sentencing.

**LW2300 - Offender 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.

**LW2320 - Offender Safety**
This module will introduce the history of officer safety training, the care and control of an arrested person, techniques for searching vehicles safely, how to defend against most attacks and the use of intermediate weapons. Candidates will perform pressure point control techniques, take downs, minimal and maximum force applications and explore use implications.

**LW2500 - Criminal Law**
This course 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.

**LW2560 - Interviews and Interrogations**
This module is designed to develop the basic skills
and knowledge necessary to take statements and conduct effective interviews within the confines of the law. Candidates will examine the framework with which interviewing takes place, develop practical interviewing, interrogation and statement taking skills in a variety of situations while performing enforcement duties, through the extensive use of role-playing, case studies and report writing.

**MA1010 - Mathematics I**

This course in basic mathematics requires knowledge of general mathematical concepts and processes to prepare learners for success in the trades. The course also provides knowledge of mathematics related to on-the-job skills and practices. It utilizes shop problems to help learners relate mathematics to job situations. Upon successful completion of this course, learners will be able to apply mathematical concepts to trade practices and view mathematics as a critical component of workplace success. Topics include whole numbers, problem solving, fractions, decimals, ratio, proportion, percent, and measurement. Since the emphasis is on learning basic mathematical concepts, it is recommended that Mathematics I be completed without the use of a calculator.

**MA1031 - Mathematics II**

This course presents knowledge of general mathematical concepts to prepare learners for success in the trades. It uses shop problems to help learners relate mathematics to job situations. Upon successful completion of this course, learners will be able to apply mathematical concepts to trade practices and view mathematics as a critical component of workplace success. Topics include geometry, pre-algebra, and basic algebra. Since the emphasis is on learning basic mathematical concepts, it is recommended that Mathematics II be completed without the use of a calculator (with the exception of 6.0 Numerical Trigonometry).

**MA1040 - Math Fundamentals I**

Math Fundamentals I is a Comprehensive Arts and Science (CAS) Transition course. It is the first of two math courses designed to prepare students for entry into a number of technical programs at the college level as well as CAS Transfer: College-University. A calculator is not to be used in units 1 and 2. Word problems will be done throughout the course at the end of each unit.

**MA1041 - Math Fundamentals II**

Math Fundamentals II is a Comprehensive Arts and Science (CAS) Transition course. It is the second of two mathematics courses designed to prepare students for entry into a number of technical programs at the College level as well as CAS Transfer: College-University. This is a course in pre-calculus mathematics designed to help alleviate specific weaknesses and to lay the foundation for success in other College courses.

**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.

**MA1080 - Mathematics for NDT**

This course provides training to prepare the NDTs in a basic math directly tied to the core discipline of 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 introduce and give them a facility with the concepts of differentiation necessary for a better understanding of a variety of technology courses.

**MA1120 - Finite Mathematics I**

Transferable to MUN Mathematics 1050. 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.

**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 programs. This course is also suitable for students headed into a non-science area of study.

**MA1140 - 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.

**MA1141 - Mathematics for Aircraft Maintenance**

This course is 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.

**MA1160 - 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.

**MA1170 - 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.

**MA1172 - 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.

**MA1180 - Mathematics for NDT**

This course provides training to prepare the NDTs in a basic math directly tied to the core discipline of 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.

**MA1190 - 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.
MA1130 - Calculus I
Transferable to MUN Mathematics 1000. This is an introduction to differential calculus including logarithmic, exponential, and trigonometric functions with applications.
Prerequisite(s): High School Level III Academic Mathematics or Advanced Mathematics and acceptable score on Mathematics Placement Test.

MA1131 - Calculus II
This course is an introduction to integral calculus with applications. Transferable to MUN Mathematics 1001.
Prerequisite(s): MA1130 or MUN Math 1000

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

MA1220 - 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.

MA1240 - Mathematics
This is a course in fundamental mathematics and data management designed to improve a learner's basic and essential mathematical skills, and to introduce statistical-type calculations required for further study in Surface Mining and Mineral Processing courses.
Prerequisite(s): AM1180

MA1400 - Mathematics of Finance I
This is an introductory course designed to provide a basic understanding of business mathematics. Its primary objective is to increase a student's knowledge and skills in the solution of practical financial and mathematical problems encountered in the business community. It also provides a support base for material in more advanced courses in the business field. The topics covered in this course include mathematics fundamentals, linear systems, simple interest and mathematics of 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.

MA1530 - Statistics
This course is designed to introduce the learner to the basic principles of statistics with the use of Microsoft Excel.

MA1670 - Statistics
This course introduces students to the basic principles of probability and statistics, and the decisions that can be made using statistics. In this course the student will explore descriptive statistics, elementary probability, discrete and continuous probability distributions, sampling distributions, hypothesis testing, chi-square distribution, analysis of variance, linear regression and correlation, and multiple linear regression. The student will have the opportunity to apply and interpret the results of a variety of statistical techniques from both descriptive and inferential statistics; to apply the fundamental concepts in statistics including sampling, experimentation, variability, distribution, association, causation, estimation, confidence, hypothesis testing, and significance; to critically review and analyze statistical arguments found in the popular press and in scholarly journals; and to appreciate the relevance and importance of statistics.

MA1700 - Mathematics
This is a course in pre-calculus mathematics designed to help alleviate specific weaknesses in students' mathematical skills and thereby increase their chances for success in other technical courses.

MA1900 - Problem Solving for Information Technology
The course is intended to illustrate how to develop logic for computer programs. To aid in the development of the student's use of problem solving techniques necessary for Information Technology, a practical 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)

MA2180 - Applied Geomatics Mathematics
This course consists of an introduction to probability and statistics with emphasis on descriptive statistics, probability theory and two variable data sets. It also investigates error propagation and error analysis as it pertains to the surveying industry.
Prerequisite(s): MA2100

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

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): MA2180

MA3700 - Production and Operations Management
This course is designed to provide the student with an understanding of the process involved in production management and operations management. Operations management involves design, planning, control and improvement of the activities or processes that transform a firm's inputs into final products. In this course the student will study the building blocks of operations management. The student will study the importance of interaction and coordination of business areas to meet organizational goals. Various mathematical and computerized models are introduced and their application to the decision-making process is emphasized.
Prerequisite(s): MA2400, MA1670 and MC1241

MC1050 - Introduction to Computers
This course is designed to give the student an introduction to computer systems. Particular emphasis is given to word processing, spreadsheet, e-mail and the Internet and security issues. Upon successful completion of this course, students will have a basic understanding of computer systems and their operation; popular software packages and their applications; security issues of computers.

MC1060 - Computer Essentials
This course is designed to give the learner an introduction to computer systems. Particular emphasis is given to word processing, spreadsheet, email, internet and D2L, the software used to complete the making process is emphasized.

MC1080 - Introduction to Computers
This course is designed to give the student an introduction to computer systems. Particular emphasis is given to word processing, spreadsheets, e-mail, the
MC1130 - Computer Studies
This course is an introduction to microcomputers, their operations, hardware, and popular software applications including the laboratory information system (Meditech). The student will develop the basic skills to use an operating system, a word processor, and a spreadsheet.

MC1150 - Productivity Tools •
This course is designed to give the student a working knowledge of a software suite. Particular emphasis is given to the word processing, spreadsheet, database or presentation components of the suite, e-mail and internet.

MC1170 - Introduction to Computers and Applications
This course will introduce students to the basic operation of the Apple/Macintosh operating system. Students will learn basic document development and internet skills. The course will provide students with the knowledge to work independently on basic creative tasks using digital tools.

MC1220 - Productivity Tools I •
This course is designed to teach students the fundamental concepts of the Windows operating environment, keyboarding by the touch method, basic word processing procedures, the use of e-mail and the internet. Students will apply concepts through practical application.

MC1240 - Computer Applications I
This course will introduce the students to the use of e-mail and the Internet, manipulating files in the Windows operating environment, basic word processing techniques, and basic presentation creation techniques. Students will apply concepts through practical application.

MC1241 - Computer Applications II
The course is designed to expose the student to software packages that can be used to create spreadsheets and web sites
Prerequisite(s): MC1240

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.

MC1850 - Spreadsheet Applications
This course is designed to give the learner a working knowledge of a Windows operating system and the use of electronic spreadsheets. This course teaches the learner how to work with different types of spreadsheet documents using a variety of core and intermediate features to create and edit professional-looking spreadsheets for a variety of purposes and situations.

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.

MH1130 - Hvac Fundamentals
This course is designed to assist learners in becoming fully familiar with the principles of design, operation and maintenance of HVAC systems which includes the basics of heating, ventilation, air conditioning systems and processes.

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.

MH1330 - Industrial Boiler Systems
In this course, the learners are introduced to boiler systems typically found in industrial settings. In addition to an overview of boiler construction and operation an introduction to boiler ancillary equipment, including boiler feedwater, piping systems and typical air pollution abatement equipment is covered.

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 operations.
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 P01100

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): ML2000

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, BL1260

ML1040 - Practical Hematology
This course provides the theoretical and applied knowledge required to collect, store and prepare samples by routine hematology procedures; prepare and stain peripheral smears; and load calibrated and automated equipment under the supervision of a registered medical laboratory technologist.

Prerequisite(s): ML1000, ML1010, ML1020, BL1260

ML1050 - Practical Microbiology
Students will process specimens including planting, streaking and incubating; prepare stool concentrates and read and record laboratory results, and to monitor quality control and quality assurance testing in the laboratory.

Prerequisite(s): ML1000, ML1010, ML1020, BL1260

ML1060 - Practical Histotechnology/Cytology
Students will perform routine cytology and histotechnology techniques including paraffin processing, smear preparation of body fluids, and simple stains and cover slipping of slides under the supervision of a medical laboratory technologist.

Prerequisite(s): ML1000, ML1010, ML1020, BL1260

ML1070 - Specimen Collection
Students will collect, store, and prepare blood samples for analysis and learn collection and handling methods for other types of body fluids and tissue samples.

Prerequisite(s): ML1000, ML1010, ML1020, BL1260, ML1070

ML1080 - Clinical Practicum
This course allows the student to gain practical experience in a clinical laboratory collection centre including the application of office skills, client communication and specimen collection. It also permits the student to gain practical experience in the clinical laboratory under the supervision of a registered medical laboratory technologist. Pre-analytical procedures performed include basic hematological techniques, macroscopic urinalysis, simple solution preparation, data entry and loading of automated analyzers, preparation and processing of tissue and body fluids, and preparation, inoculation, streaking and culturing of microbiological media.

Prerequisite(s): Successful completion of all semester 1 and 2 courses

ML1120 - Immunology
This is an introductory course in immunology covering the following topics: immunity, the immune system, antigen and antibody 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 artifacts. Microscopic identification of tissue sections is practiced to aid in the evaluation of staining results.

Prerequisite(s): ML1300

ML1510 - Introduction to Transfusion Science
The course will provide 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, hemolytic disease of the fetus and newborn as well as autoimmune hemolytic 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.

MM1400 - 2D Digital Graphics
Students will become familiar with “Photoshop” image editing tools and will be introduced to basic colour theory and digital painting techniques.

MM1500 - Introduction to 3D Animation
Students will learn the fundamentals of 3D Animation. Students will gain a general knowledge of the history and potential applications of the medium, exploring the basics of workflow, organizational structure and specific tool use.

MM1600 - Narrative & Production Design
In Narrative and Production Design students will be introduced to the processes required to realize and present a story in a visual format.

MM1810 - Story Telling and Animatic Design
Story Telling and Animatic Design is an introduction to the process of developing a project scenario and the skills required to realize and present a story in a visual format.

Co-requisite(s): VA1100

MM1950 - Workplace Professionalism
Students will gain the skills and knowledge necessary to effectively work in a team environment.

MM2300 - Digital Audio Techniques
This course will provide students with an in-depth look at digital audio techniques. Topics to be covered include MIDI audio files, digital audio files, audio file formats, Red Book standards and audio recording.

MM2310 - Digital Video Techniques
Students will gain an in-depth knowledge of digital video techniques. Topics to be covered include how video works, broadcast video standards, integrating computer and television, shooting and editing video, recording formats, video tips, and video compression.

Co-requisite(s): MM2320

MM2320 - Digital Audio Techniques
Students will gain a working knowledge of sound capture, audio editing basics and output. Students will also explore audio manipulation and editing techniques for dialog, music and sound effects.

Co-requisite(s): MM2310

MM2330 - Digital Audio Soundtrack Design
This course is designed to provide students with the understanding and skills set related to the world of digital audio applications and its relationship to musical instruments and special effects. The goal of this course is to provide students with an understanding of the process of video game soundtrack design.

Co-requisite(s): GD11110

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.

MM2560 - 3D Texture and Digital Paint
Using standard image processing programs, students will be introduced to the artistic approach and technical aspects of custom texture generation, digital painting and application techniques for 3D.

Prerequisite(s): MM1400

Co-requisite(s): MM2670

MM2600 - Computer Animation I (2D)
Computer Animation I introduces students to the concepts and methodologies of two-dimensional computer animation. Concepts such as sprite animation, frame animation, and incorporating 2D animation into a multimedia presentation will be discussed.

Co-requisite(s): MM2500

MM2620 - 2D Computer Animation
Students will continue with the projection of content covered in previous animation drawing courses into the digital production environment. Emphasis will be on learning 2D animation software tools. Through hands-on activities and assignments students will produce a series of short animation projects using drawn animation skills and digital animation techniques.

Prerequisite(s): VA1161; MM1400

MM2670 - 3D Character Modeling
Students will expand upon the fundamentals of digital modeling presented in Introduction to 3D Animation and will learn the concepts and practical applications of model optimization, animation rigging and weighting.

Prerequisite(s): MM1500

Co-requisite(s): None

MM2680 - 3D Character Animation
Students will learn to expand upon the fundamentals of digital character animation previously covered in Introduction to 3D Animation. Practical exercises in a variety of animation scenarios, and essential editing and control features will be explored.

Prerequisite(s): MM2560

MM2710 - Multimedia Lab I
Students will work on multimedia applications with formal lab assistance and supervision. In this course students will apply principles and practices covered in the program to practical applications.

MM2710 - Multimedia Lab II
Students will work on multimedia applications with formal lab assistance and supervision. In this course, students will apply principles and practices covered in the program to practical applications.

MM2750 - Special Topics
The Digital Animation field is characterized by frequent changes in software and hardware applications. The pace of progress is accelerating and new applications offer exciting potential for students in this field. This course was designed to enable students to select a contemporary leading edge software application and to refine their animation skills within the context of that application.

Co-requisite(s): MM2601; MM2501

MM2760 - Animation Design Project
Students will be exposed to a simulation of a professional 3D production and design environment. Through research and collaborative production assignments the students will be expected to produce a fully developed animation project.

Prerequisite(s): MM1600; MM1500; MM2670; MM2560

MM2830 - 3D Post-Production & VFX
Students will explore the concepts and techniques used to digitally create realistic simulations of various environmental conditions and natural phenomenon. This will be achieved by using an industry standard animation package 3D Post-Production and Visual FX.

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.

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MN1410 - 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.

MN1520 - Supervisory Leadership
This course will prepare the student with skills to work in leadership and supervisory positions in a variety of workplace settings. Emphasis is placed on the unique challenges facing the supervisor as the first level of management in most organizations. Concepts and theories will be explored through case studies, projects and in-class exercises designed to simulate the daily challenges facing supervisors and leaders.

MN1800 - 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 owners objectives while employing a sound, practical, forest technical approach to resource management. Students are expected to apply knowledge from all forestry courses throughout the program to construct a strategic sustainable forest ecosystem management plan for an assigned forest.
Prerequisite(s): FR1331, LW2210

MN1810 - 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.
Prerequisite(s): Successful completion of all Second Year Business Administration 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: business ethics fundamentals; stakeholders and corporate social responsibility/governance; ethical issues in the workplace; business ethics and the law; ethical decision making; ethics program and audits; and globalization and emerging trends. Students will have the opportunity to research, analyze, and critique various organizational practices and policies, particularly codes of conduct and codes of ethics.
Prerequisite(s): AC2260, HN1240, MR2100, and PS2340

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 and PS2340

MP1700 - Control Engineering
Use Laplace Transforms in the design and optimization of industrial control systems. The practical lab component will support the students understanding and application of the theory.
Prerequisite(s): MA2100

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 learners 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

MP2170 - AC Circuits and Machines
This course is designed for instrumentation and Controls learners. It is designed to strengthen the learners’ ability to analyze single- and three-phase AC circuits as well as the learners’ understanding of AC machines. The course also introduces the learner to motor control diagrams.
Prerequisite(s): ET2100, MA1101

MP2230 - Power System Harmonics
This is an introductory course in power system harmonics covering sources, problems, Fourier analysis and solutions. The laboratory component will further develop and strengthen the understanding and skills related to harmonic and Fourier analysis.
Prerequisite(s): MA2100

MP2300 - AC Circuits
This course is designed to be a continuation of the electrotechnology courses. It is designed to strengthen the students ability to analyze single and three phase AC circuits as well as reinforce the students understanding of magnetic circuits. The laboratory work is included as an application of the theoretical concepts and is intended to enhance skills in the use of AC measuring instruments.
Prerequisite(s): ET2100, MA1101

MP2350 - Transformers
This course is designed to be a continuation of the electrotechnology courses. It is designed to expand the student’s knowledge of transformers and the associated applications, standards and loading guides. Additionally it will enhance the student’s ability to analyze single- and three-phase AC circuits as well as provide an application for advanced mathematical analysis techniques.
Prerequisite(s): MA2100, MP2300

MP2400 - Network Analysis
This is applied mathematics course designed to provide the student with a knowledge of the advanced mathematical methods used in electrical/electronic circuit analysis and design.
Prerequisite(s): MA2101, AE2301

MP2700 - Electrical Power Sources
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): ET1101

MP2710 - Welding Power Sources
This course provides a theoretical approach to welding power sources and equipment. Classroom instruction deals with the assessing the operational characteristics of various welding power sources, their installation, maintenance, and fundamental troubleshooting analysis pertaining to weld process control.
Prerequisite(s): ET1101

MP2910 - DC Machines
This course is an introductory course in electrical machine theory. It covers the basics of DC machine theory and provides the necessary background for subsequent courses in electrical machines. It will give the student an appreciation of rotating machinery and through labs, an idea of the type and operating characteristics of the various DC machines.
Prerequisite(s): ET2100

MP2920 - AC Machines
This course follows DC Machines MP2910 and covers topics in AC Machines MP2300. AC generators are studied as well as three-phase and single-phase motors. The theory learned in this course will be applied in future courses in Power Systems and Motor Controls.
Prerequisite(s): MP2910, MP2300

MP3110 - Motor Control Systems
This is an advanced level course designed for Electrical Engineering Technology students. It provides the student with a solid background in designing, installing, and troubleshooting various motor control
systems. Upon successful completion, the student should be able to interpret typical control drawings, design automated control solutions for typical industrial applications, install and troubleshoot various control strategies, as well as select and configure protection methods for motor circuits.

**Prerequisite(s):** MP2920, MP2350, DP2540

**MP3130 - Industrial Electronics & Power Systems**
This course is a study of motor controls starting from relay logic to electronic variable speed motor drives. Power electronic device theory is covered as background for drive electronics. A.C. and D.C. drives, with applications in the instrumentation field.

**Prerequisite(s):** EE2100, 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 functions; 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

**MP3170 - Industrial Motor Controls**
This course is a study of power systems including single line power schematics, motor controls, relay logic, PLC control and electronic variable speed motor drives. AC and DC drives, with applications in the instrumentation field.

**Prerequisite(s):** MP2170, EE2100

**Co-requisite(s):** CE2810

**MP3215 - Power Systems: Analysis**
This is an introductory course which exposes the student to fundamental design aspects of utility bulk power transmission systems. The student is first introduced to the overall layout and function of each component of typical utility systems. Types and characteristics of overhead line conductors and related hardware are also covered. Sub-transmission and distribution system calculations are introduced, followed by exact and approximate system models used in analysis of medium and long transmission lines. The student is also introduced to basic structural design aspects of high voltage transmission lines. 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

**MP3225 - 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):** MP3275

**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):** MP2100

**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.

**Prerequisite(s):** MR1200

**MR1340 - Marketing for Graphic Design**
Students will gain an understanding of the relationship between marketing and graphic design. Students will be introduced to the process of applying marketing principles when translating clients needs to specific target audiences.

**Prerequisite(s):** VA1230

**MR1500 - Consumer Behaviour**
This course introduces the student to the concepts, theories and techniques of consumer behaviour. The student will explore the fundamentals of consumer behavior in order to gain an understanding of the motivation behind purchase decisions. By understanding the consumer’s behavior, students are able to make more market focused strategic decisions. Students will have the opportunity to apply their knowledge through the use of case analysis and assignments.

**Prerequisite(s):** MR2100

**MR1600 - Professional Selling**
This is an introductory course in the fundamental principles and practices of professional selling. The course is designed to teach the student about competencies in prospecting, identifying client needs, and dealing with objectives while building client relationships. The student will take part in 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):** MR2100

**MR2100 - Marketing II**
This is an introductory course in the fundamental principles and practices of marketing. The student will explore product development and lifestyle, price distribution and supply chain management, retailing and wholesaling, promotion, advertising, and personal selling. Students will have the opportunity to apply various marketing techniques and practices using case studies and application assignments.

**Prerequisite(s):** MR1100

**MR2110 - Marketing Methods & Promotional Media**
This course introduces the concepts and techniques of marketing. Students will learn the principles of modern marketing management and the resources required to successfully promote and market a product. A major aspect of the course is the development of a marketing plan related to the students 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

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practices using case studies and application assignments, and will develop communication skills through class discussions and group activities.

**MR2300 - Business Research**
This course introduces students to the field of business research through the examination of the various techniques, principles, skills and activities required to create and present an effective survey project. It will familiarize students with the ways that marketing information can be obtained and/or produced and how it can be used to provide insight into markets, customers, products, and business strategies for business decision making purposes. Students will have the opportunity to apply various research techniques and practices using case studies and application assignments culminating in the preparation and presentation of a research report.

**Prerequisite(s):** MR2100
**Co-requisite(s):** MA1670

**MR2350 - E-Business**
This course is designed to introduce the student to the managerial and technical aspects of electronic business and commerce. Students will gain knowledge of the competitive electronic business field and will be equipped to help businesses assess possible opportunities through this rapidly evolving technology. They will be exposed to the concepts of customer relationship management, marketing communications, supply chain management, web analytics, and taxation and ethical issues related to E-Business. Students will also have the opportunity to apply various E-Business techniques and practices using case studies and application based assignments.

**Prerequisite(s):** MR2100 and MC1241

**MR2400 - Marketing Communications**
This course will examine in some depth the current processes, issues, and practices involved in marketing communications. The student will explore communications as 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 and CM1241

**MR2450 - Services Marketing**
This course is designed to enable students to apply the concepts and strategies of marketing relevant to the services sector. The student will explore in some depth various aspects of serving marketing, including service productivity, service marketing distribution, service pricing concepts, positioning in service marketing, and service personnel management. Students will have the opportunity to apply their knowledge of these marketing concepts and strategies using a case project, application assignments and presentations.

**Prerequisite(s):** MR2100

**MR2600 - Advanced Professional Selling**
This course will examine the impact of the key elements of the sales call and explore the practical realities of the professional sales career. The student will have a greater appreciation of the demands of a sales career and understand the concept of sales in the global market environment.

**Prerequisite(s):** MR1600

**MR2620 - Sales Management**
This advanced course will provide the student with the opportunity to explore the practical components of the professional sales manager. The students will deepen their knowledge in the areas of sales management, planning, forecasting, and account relationships, as well as sales force organization, operations, staffing and training. Students will have the opportunity to demonstrate the application of concepts through field work assignments, case analysis, research, and presentations.

**Prerequisite(s):** MR1600

**MR2700 - International Marketing**
This course is designed to enable students to apply the concepts of marketing in an international context. The student will research and evaluate foreign markets and apply marketing concepts relevant to strategy development in foreign markets identified by exporting and trans-national organizations. The student will have the opportunity to acquire knowledge of international environmental influences, preparation for international markets, and the international marketing mix and apply various international marketing techniques and practices using case studies and application assignments.

**Prerequisite(s):** MR2100

**MR2800 - Business-to-Business Marketing**
This course will enable students to apply the concepts of marketing in a business customer context, to research and evaluate business markets, and to apply marketing concepts relevant to strategy development in manufacturing, trade, institutional, and not-for-profit organizations. The student will use analyses of business buyer behavior, segmentation and targeting, business marketing strategy, marketing communications, and personal selling techniques to analyze case studies and complete application assignments.

**Prerequisite(s):** MR2100

**MR3100 - Current Topics in Marketing**
This student-led seminar-based course will examine issues, topics and trends in the area of marketing that are of recent and current concern to marketing professionals today. Students will research, develop and present a seminar/paper on selected issues/topics/trends from among the following areas explored in this course: the field/practice of consumer behavior; professional selling, sales management; retailing; E-Business, marketing communications, services marketing; business to business marketing; and international marketing. In addition students will have the opportunity to research and critique a current journal article.

**Prerequisite(s):** MR1500, MR2300, MR2200, MR2350, MR2400, MR2450, MR2800
**Co-requisite(s):** MR2620, MR2700

**MT1110 - Introduction To Mining**
This course serves to introduce the learner to mining techniques in Canada relating to mineral deposits, various types of ore, mining machinery, units of operations in mining, and mine engineering analysis techniques used in these operations, from discovery, through development to extraction underground and on surface. This course will also delve into the required safety equipment, mobile equipment and required certification to work in an industrial environment.

**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.

**MT1250 - Equipment Reliability Concepts**
This course provides the learner with an in-depth research of the importance of stationary and non-stationary equipment reliability to the efficiency of mining operations. This course serves to identify the critical role of Operators, maintenance and service provider/s play can make to the wellness of equipment and production process. The importance of 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, is also illustrated in this course.

**Prerequisite(s):** M2W2150

**MT1270 - Engine Fundamentals**
This course provides the learner with the information pertaining to engines in gasoline and diesel systems. Learners will explore two and four stroke principles along with part identification and descriptions of operation. Learners will explore the basic science behind engine operations and describe common terms used for engines.

**MT1420 - Heavy Equipment Simulator I**
This course will provide the learner with training on the Komatsu Haul Truck 830-E simulator, in preparation for operation of heavy haul truck in a mining environment. Learners will perform simulator orientation, drive in various weather conditions, perform specific loading and unload requirements, and be presented with various challenges throughout the simulation that will enhance their operation skills.

**MT1430 - Heavy Equipment Simulator II**
This course builds on the Heavy Equipment Simulator I training to provide the learner with an advanced simulation training experience. Learners will review several components of operation of Heavy Equipment Simulator I and with a focus on the key elements of an experienced operator. Experienced / Upskill Training is required to ensure that safe, proficient and productive Komatsu 830E competencies are retained by experienced operators.

**Prerequisite(s):** MT1420
MT2100 - Surface Mining
The course is designed to train the learner to function efficiently in surface mining operations. The subject matter consists of: Evaluation of Surface Mine Prospects, Ore Reserve Calculations, Economic Evaluation, De-watering and Flood Control, Open Pit Planning and Layout, Selection of Mining-Stripping, Equipment and Methods, Fragmentation and Drilling Principles.

MT2140 - Surface Mining
This course is designed to identify to the learner how various surface mining operations function. Surface mining processes will be discussed in detail. Learners will discover formulas and procedures for various extraction methods, planning and complete financial estimations to determine viable extractions and processing.

Prerequisite(s): MA1240

MT2150 - Ethical Mining
This course will explore sustainable development along with Canada's Green Plan. The relationship of sustainable development and mining will be examined and topics such as mining's role in sustainable development. The Mining Industry of Canada benchmarks through TSM (toward sustainable mining) will be examined and evaluated.

MT2400 - Mineral Processing I
This course is designed to train the learner to function efficiently in an ore concentration facility. The subject matter consists of sampling methods and procedures, flow-sheeting, screens and screen analysis, pulp density, calculations, grinding-crushing equipment and size reduction calculations, classification, concentration and tailings disposal.

Prerequisite(s): MA1100

MT2410 - Mineral Processing II
This course is a continuation of MT2400. It introduces students to theory in areas of flow sheeting, methods of analyzing and recovering ore while controlling environmental impacts.

Prerequisite(s): MT2400

MT2420 - Mineral Processing I
This course is designed to train the learner to function efficiently in an ore concentration facility. The subject matter consists of sampling methods and procedures, flow-sheeting, screens and screen analysis, pulp density, calculations, grinding-crushing equipment and size reduction calculations, classification, concentration and tailings disposal.

MT2421 - Mineral Processing II
This course is a continuation of MT2420. It introduces learners to theory in areas of flow sheeting, methods of analyzing and recovering ore while controlling environmental impacts.

Prerequisite(s): MT2420

MT2440 - Mineral Processing I
This course is designed to identify the processes that are used to operate in an ore concentration facility. The course is designed to introduce subject matter relating to but not limited to the mineral sampling methods and procedures, flow-sheeting, screens and screen analysis, pulp density, calculations, grinding-crushing equipment, size reduction calculations, classification, concentration and tailings disposal.

Prerequisite(s): AM1180
Co-requisite(s): MA1240

MT2441 - Mineral Processing II
This course introduces the learner to theory in methods of analyzing and recovering product while identifying processes that can be utilized for the control of minimal negative environmental impacts. Mathematics calculations will be utilized in assisting the analysis of quality control processing procedures.

Prerequisite(s): MT2440

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

MT2660 - Chemical Processing Of Ores
This course will focus on the flow, feed preparation, and operation of many of the chemical processing operations conducted on metallic ores. Emphasis will be placed on the preparation and handling of the metal ore concentrate for the extraction of the desired minerals using hydrometallurgical processes. The processes covered are in use in Newfoundland and Labrador and include those modifications to those processes as are typically encountered in the mineral processing industry.

Prerequisite(s): CH1121, MT2420

MT3400 - Mineral Processing III
This course provides information and skills in flotation plant operation and pelletizing.

Prerequisite(s): MT2410

MT3440 - Mineral Processing III
This course serves to identify the processes that occur within a mineral processing plant. Learners will identify the standard and alternative process for pelletizing, from the receiving of product, transportation, primary and secondary process, including the quality controls. Learners will identify the required equipment and procedures for flotation plant and pelletizing operation.

Prerequisite(s): MT2440

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): MU1110

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.

Prerequisite(s): CH1121, MT2400

MU1200 - Songwriting
This course provides an overview of effective songwriting principles. Students will review these principles and will listen critically to a wide range of selections from a variety of genres. By the end of the course, students will be composing their own pieces.

MU1410 - Performance I
Spread across four semesters, with a final performance jury at the end of semester four, this course is designed to examine all areas of musical performance, in both public and controlled environments, while the student builds a strong portfolio and enhances his or her performance skills. Students will be graded through peer evaluation of classroom performances, instructor evaluation of both college and public performances, and portfolio evaluation, which will take place as part of the final jury. At the end 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 end of this course will be current performance trends in the music industry, professionalism, and performance career planning.

MU2100 - Surface Mining
This introductory course introduces the techniques 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.

MU2140 - 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.

MX1510 - Clinical Radiography
All clinical courses are designed to provide extensive clinical experience to students. Applied knowledge of anatomy and physiology, radiographic technique, pathology, radiation protection and patient care and safety will be reinforced. Emphasis will be placed on intensive demonstrations and application of clinical skills in professional practice. Throughout the entire clinical component of the Medical Radiography program (48 weeks total), students will maintain documentation which demonstrates both the quality and quantity of clinical experience acquired, thus ensuring on-going maintenance of competencies acquired.
Prerequisite(s): Successful completion of semester 5

MX2102 - 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, respiratory systems and their radiological significance will be discussed.
Prerequisite(s): Successful completion of semester 3

MX2103 - Radiographic Anatomy & Pathology
This course is a continuation of MX2102, where the student will continue to learn a complete and thorough knowledge of human anatomy. Anatomical structures will be located by relating to surface landmarks. Identification of anatomical structures on the radiographic image as well as the ability to differentiate between normal and abnormal anatomical appearance is required. The student will become knowledgeable of the structure, function, location and radiographic appearance of structures in the skull, as well as the following anatomical systems: Digestive, Respiratory, Urinary, Reproductive, Nervous and Endocrine Systems. Associated pathologies, in particular those which may be demonstrated radiographically, are studied, as well as cross-sectional anatomy of the skull, chest, abdomen and spine as related to CT imaging.
Prerequisite(s): MX2102

MX2110 - Radiographic Technique
This course is designed to introduce the student to the fundamental practices involved in the performance of radiographic imaging. Instructional areas include: terminology, IR identification, patient/technologist relationship, examination protocol, radiation protection and technologist responsibility. Emphasis will be placed on basic, alternate, and specialized imaging of the appendicular and axial skeleton, respiratory system.
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.I. 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 departments 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 designed 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 international, national and provincial standards. They will learn how to maintain these standards by the correct use of equipment, accessories and other relevant factors. They will learn how to provide maximum protection from ionizing radiation to the patient, general public, co-workers and themselves.
Prerequisite(s): BL2100, PH2200, MX2102, MX2310
Co-requisite(s): MX2103

MX3250 - Clinical Radiography
All clinical courses are designed to provide extensive clinical experience to students. Applied knowledge of anatomy and physiology, radiographic technique, pathology, radiation protection and patient care and safety will be reinforced. Emphasis will be placed on intensive demonstrations and application of clinical skills in professional practice. Throughout the entire clinical component of the Medical Radiography program (48 weeks total), students will maintain documentation which demonstrates both the quality and quantity of clinical experience acquired, thus ensuring on-going maintenance of competencies acquired. This course will also provide the student with the opportunity to become familiar with related disciplines in order to review patient data such as images and reports from other studies through research and observation of other imaging and therapeutic modalities.
Prerequisite(s): Successful completion of Semester 5

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**MX3260 - Clinical Radiography**
This course is designed to provide extensive clinical experience 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

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**ND1110 - Liquid Penetrant Inspection**
This course prepares students to recognize surface flaws in components that appear as a result of capillary action. Flaws become apparent when a colored or florescent dye bleeds out of the component to reveal a crack in its surface. This course provides learners 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

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**ND1130 - Materials and Process**
This course provides students information on metals, metal forming, casting, welding, service conditions, and flaws. It also introduces the physical, electrical, mechanical, and magnetic properties of metals. This course provides learners training for Materials and Process in preparation for nation Non-Destructive Technician Certification through Natural Resources Canada. This training will include both in class and practical training.

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**ND1210 - Magnetic Particle Inspection**
This course is designed to train learners to use small magnetic particles (i.e. iron filings) to detect flaws in components. For this method to be used, the component must be made of ferromagnetic material such as iron, nickel, cobalt, or some of their alloys. This course provides learners training for a Magnetic Particle Inspection in preparation for national Non-Destructive Technician Certification through Natural Resources Canada. This training will include both in class and practical training.

Prerequisite(s): TS1520
Co-requisite(s): ND1130

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**ND1310 - Industrial Ultrasonics I**
This course trains learners to use high frequency sound energy to conduct examinations and make measurements in materials to determine flaws in the structure.

Prerequisite(s): ND1310

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**ND1410 - Industrial Radiography I**
This course provides training for Level I Industrial Radiography NDT Technician Certification. It also trains learners to send radioactive energy through a material enabling a negative (Photo) to be produced of that material illustrating internal flaws or cracks. This will include both in class and practical training.

Prerequisite(s): TS1520, MA1080, ND1500, ND1130

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**ND1411 - Industrial Radiography II**
This course provides training for Level II Industrial Radiography NDT Technician Certification. It also trains learners to send radioactive energy through a material enabling a negative (Photo) to be produced of that material illustrating internal flaws or cracks. This will include both in class and practical training.

Prerequisite(s): ND1410

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**OF1100 - Office Management I •**
This course will acquaint the student with the significant role of the office employee in business, the importance of effective communication and various communications methods, the use of reference resources, and the need to enhance desirable personality traits and attitudes.

Prerequisite(s): OF1101
Co-requisite(s): DM2210

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**OF2100 - Office Management III •**
This course is designed to further prepare the student for the workplace. The focus is on topics such as personal development, planning meetings and conferences and job search skills to refine the skills needed to become a successful and professional employee. Students will plan meetings and events using standards of the International Association of Administrative Professionals (IAAP).

Prerequisite(s): OF1100, DM1210 and CM2110

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**OF2101 - Office Management IV •**
In this course students will complete an office simulation that will require them to perform research, make decisions, and apply time management skills. Students will apply knowledge they have gained in all previous Office Administration courses.

Prerequisite(s): OF2500
Co-requisite(s): DM3250
0F2700 - Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.
Prerequisite(s): OF2100

0F2710 - Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.

0F2720 - Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assist students as they prepare to make the transition to the workplace as an Administrative Assistant.
Prerequisite(s): OF2500

0F2730 - Capstone Project
This course is designed to provide students with the opportunity to apply the principles and skills necessary to successfully enter the workplace as an administrative professional. The course will reinforce office management concepts, including professionalism and human relations, and will assistant students as they prepare to make the transition to the workplace as an Administrative Assistant.
Prerequisite(s): OF2400

0J1020 - 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.

0J1100 - Work Exposure (Certificate)
The work exposure is a required portion of the program and provides a unique learning experience in a real workplace setting. Students will complete two weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in previous courses in the Business Administration Certificate program. They will become more employable as they enhance technical, team-building, problem-solving, and customer-service skills, increase accountability; and strengthen positive attitudes and work ethic.
Prerequisite(s): Successful completion of all courses in the Business Administration Certificate program with a minimum Grade Point Average of 2.00

0J1130 - 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 two weeks in duration. 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 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

0J1180 - On the Job Training, Northern Natural Resources
This three week unpaid workplace exposure program is designed to insure that a graduating student has an opportunity of functioning with a real work 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

0J1300 - On-The-Job Training
This three-week unpaid workplace exposure program is designed to insure that a graduating student has an opportunity of functioning with a real world employment setting. Students are placed with the forest industry of a forestry related agency.
Prerequisite(s): Successful completion of all courses within the Forestry program (must be eligible to graduate).

0J1301 - On-The-Job-Training
This three-week unpaid workplace exposure program is designed to insure that a graduating student has an opportunity of functioning with a real world employment setting. Students are placed with a Fish and Wildlife related agency.
Prerequisite(s): Successful completion of all courses within the Fish and Wildlife program (must be eligible to graduate).

0J1400 - Work Exposure
Learners will gain an appreciation of the real work environment through a three-week work placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Electrical Engineering Technology (Industrial Controls) program. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.
Prerequisite(s): Clear academic standing for graduation

0J1420 - Work Exposure
Learners will gain an appreciation of the real work environment through a three week work placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Electrical Engineering Technology (Industrial Controls) program. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.
Prerequisite(s): Clear academic standing for graduation

0J1480 - 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 completed the scheduled intersession. Program instructors will assist students in securing a placement within the tourism industry. The instructors will supervise and evaluate the students progress in conjunction with the field supervisor. Arrangements and expenses for transportation, lodging, and meals are the sole responsibility of the student.
Prerequisite(s): Successful completion of all courses in semesters one and two.

0J1550 - Work Experience 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 behaviour 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

0J1560 - Work Experience - Marketing
This student will gain an appreciation of the real work environment in a business or industry directly related to the area of training. This six-week period will be required in addition to academic content covered. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behavior and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in all previous courses in the Marketing Diploma programs. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.
Prerequisite(s): Successful completion of all courses in semesters 1 to 5 of the Marketing Diploma program with a minimum GPA of 2.0

0J1580 - Work Exposure - Accounting
The student will gain an appreciation of the real work...
environment in a business or industry directly related to the area of training. This six-week period will be required in addition to academic content covered. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work experience, students will apply the skills and knowledge learned in all previous courses in the Accounting Diploma programs. They will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in semester 1 to 5 of the Accounting Diploma program with a minimum GPA of 2.0

**OJ1900 - Work Exposure - Office Administration (Executive)**

The work exposure is a required portion of the program and provides an 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 (Executive) Diploma program. They will further enhance their personal growth by developing employability skills such as team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in semesters 1-5 of the Office Administration (Executive) Diploma program with a minimum Grade Point Average of 2.0

**OJ1910 - Work Exposure â€“ Office Administration (Legal)**

The work exposure is a required portion of the program and provides a unique learning experience in a real workplace setting. Work exposure placements must be program relevant, and six weeks in duration. Students will complete six weeks in industry where they are expected to learn, develop, and demonstrate the high standards of behaviour and performance expected in the work environment. Throughout the work exposure experience, students will apply the skills and knowledge learned in previous courses in the Office Administration (Legal) Diploma program. 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 semesters 1-5 of the Office Administration (Legal) Diploma program with a minimum Grade Point Average of 2.0

**OJ1800 - On the Job Training**

This six-week, unpaid workplace exposure program is designed to ensure that a graduating student has the opportunity to function in a real world employment setting. Students are placed with the program-related agency.

**Prerequisite(s):** Successful completion of all courses within the academic program (must be eligible to graduate = 2.0 GPA)

**OJ1860 - Job Placement I**

Learners will gain an appreciation of the real work environment through a six-week job placement experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Renovation Technician program. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, accountability, and further enhancing their personal growth. This job placement will require learners to practice basic skills learned in the first year of study.

**Prerequisite(s):** Completion of Semester 1 and 2

**OJ1861 - Job Placement II**

Learners will gain an appreciation of the real work environment through a six (6) week workplace experience directly related to the area of training. This experience will be required in addition to all academic requirements of the Renovation Technician programs. Learners will also further develop employability skills such as working independently, team-building, customer service, work ethic, attitude, and accountability, further enhancing their personal growth. This job placement will require learners to practice skills learned in years one and two of the program.

**Prerequisite(s):** Completion of Semester 3 and 4 and OJ1860

**PA1110 - Anatomy and Physiology**

This course is designed to enable the student to acquire a comprehensive knowledge of gross anatomy and physiology of the major systems of the human body. The didactic content of the course will include instruction in the key medical terms and related structures of the following body systems: integumentary, skeletal, muscular, nervous, the senses, endocrine, cardiovascular, respiratory, digestive and genitourinary (including reproductive...
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, Newfoundland and Labrador. This course will provide the student with the information needed to maintain physical and emotional health in this demanding and stressful occupation. The student will learn relevant medicolegal concepts pertaining to prehospital care, 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 qualify 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 effective communication 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, PA1260, PA1270, PA1310, PA1600

PA1270 - Management of Disease/Injury

The student will develop competency in systematic methods of patient assessment including history taking, techniques of physical examination, vital signs assessment, chest auscultation and percussion, 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 practices scheduled later in the training program. The student will learn the components of clinical decision making. The student will develop competency in skills to provide appropriate interventions to minimize or reduce further injury or worsening of various patient conditions in the simulated setting. These skills will be interwoven with the relevant theory throughout the program. Skills included are: Simulated and clinical patient assessment, vital signs assessment, pulse oximetry, blood glucose monitoring, non-invasive airway management, chest auscultation and percussion, prehospital oxygen therapy, splinting and spinal immobilization, simple wound care, patient positioning, lifting and transferring, use of wheeled ambulance stretchers, Cardiopulmonary Resuscitation (CPR), and Automated External Defibrillation (AED). The student will be instructed in assessment and management strategies for the trauma patient. Laboratory sessions will provide hands-on teaching and practice of wound care, splinting and immobilization, utilization of rigid spinal immobilization and extraction devices, and management of patients in shock. The didactic content of the course will include instruction in the key concepts of trauma injury to various body organs, and body systems including musculoskeletal, head, neck, spine and nervous system, and soft tissue injuries.

Co-requisite(s): PA1110, PA1130, PA1260, 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. This course includes: Medical Control, Delegated Medical Acts, ethical behavior, protocols, scope of practice, and accountability related to administration of medications.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, 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 practice during the second semester.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

PA1360 - Interagency Relations

This course focuses on interagency relations in field operations. In this regard, the student will develop an understanding of the responsibility of the paramedic in interacting with police, fire, air transport teams, rescue specialists, and experts in managing dangerous goods incidents. The student will learn the special considerations to be given when paramedics are involved with patients being transferred to or from air medical transport, including the practical skills of packaging a patient in preparation for transfer to air transport. The student will participate in a practical workshop to learn about the safety issues related to providing patient care while extraction tools are being used. The students will learn the responsibilities of the paramedic at crime scenes and accident scenes, and their role in collaborating with law enforcement agents.

Co-requisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

PA1450 - Advanced Therapeutics

This course is designed to enable the student to acquire the knowledge of theory, application of psychomotor skills, utilization of critical thinking and decision-making skills when presented with various patient types. The student will learn advanced assessments and interventions for medical and
trauma patients across all age groups. Treatments emphasized in this course include fluid resuscitation through peripheral intravenous access and intravenous therapy, pharmacology, specific pharmacological interventions and various methods of medication administration. The student will demonstrate, through a variety of assessment tools, their readiness for safely and appropriately applying the knowledge and skills in the clinical and field settings. In this course, the student will be provided the opportunity, in simulated scenario settings, to assess and care for the patient utilizing skills at both the BLS and advanced level utilizing procedures common to pre-hospital providers including but not limited to: stethoscope, Sphygmomanometer, Cardiac Monitor, Blood Glucose Monitor, Pulse Oximetry, AED, CPR, Intravenous fluid resuscitation, Symptom Relief Drug Administration, pharmacology, mobilization, 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, PA1260, PA1270, PA1310, PA1350, PA1450, PA1410

PA1500 - Mental Health Interventions

The student will learn to: provide care to a patient experiencing a psychiatric crisis; identify potential causes for behavioral and psychiatric illnesses; describe effective techniques for interviewing a patient during a behavioral emergency; distinguish between key symptoms and management techniques for selected behavioral or psychiatric disorders; and in role playing situations, will demonstrate measures that may be used to safely diffuse a potentially violent patient situation. The student will be introduced to the concept of normalcy related to the psychological aspect of patient assessment in the general population. The student will develop an understanding of various 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 study special considerations that are required for assessment and treatment of: patients of specific age groups; patients with physical and/or emotional disabilities; patients with chronic diseases; patients with genetic anomalies; oncology patients; and patients with terminal illness or in palliative care. In this course, the student will gain an understanding of special circumstances, or existing patient conditions which may influence how the paramedic is required to alter patient care. The student will learn the pathophysiology of these conditions, age groups, mental illnesses, hereditary conditions, or chronic diseases and disabilities to better understand the limitations of these patients, and how the paramedic may be required to adjust his or her expectations of the patient’s ability to communicate, or perform activities. The student will also learn signs and symptoms indicative of abuse and neglect of the person who depends on others for care. The student will also complete selected chapters of the Canadian version of the Neonatal Resuscitation Program (NRP) which will be taught by certified NRP instructors.

Prerequisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600

Co-requisite(s): PA1350, PA1450, PA1330, PA1500, PA1410

PA1600 - Clinical Field Practicum I

The Clinical and Field practicum for the Primary Care Paramedic program is integrated into the first semester of the program. This includes rotations on ambulance and in hospital that are scheduled over the last four weeks of the first semester. The first semester practicum is followed by a six-week practicum and the third semester follows with a seven week practicum. The second and third practicum also includes communication skills while interacting with the clinical areas. The learning objectives for field (ambulance) and clinical (hospital) practicums are based on the National Occupational Competencies Profile for paramedic, which was developed by the Paramedic Association of Canada, and is used by the Canadian Medical Association Subcommittee on Accreditation of programs. Additional competencies are met by the end of the Symptom Relief field practicum.

PA1710 - Clinical Field Practicum II

The Clinical and Field practicum for the Primary Care Paramedic program is integrated into the second semester. The second semester involves rotations on ambulance in hospital that are scheduled over the last 6 weeks of the second semester. The second semester practicum involves rotations on ambulance and in hospital, scheduled over the last 6 weeks of the semester. The learning objectives for field (ambulance) and clinical (hospital) practicums are based on the National Occupational Competencies Profile for paramedic, 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 practicums is to provide the student the opportunity to apply all skills learned in the first and second semesters within the milieu of the hospital and on ambulance. The student will develop communication skills while interacting with patients and staff, take vital signs, assist with patient assessment, and provide basic care to patients at the PCP level. This will also include IV Therapy, ECG monitoring and administering Symptom Relief medications. In the second semester, students will be placed with preceptors in a pediatric setting such as E.R. or pediatric unit, for a minimum 36 hours, adult ER for a minimum of 84 hours and on ambulance for a minimum of 336 hours. The clinical and field practicums times will be carried over into the third (final) semester. In all three semesters, the preceptors will assist the student to apply theory and didactic content to the real world. Competencies for the field (ambulance) and clinical (hospital) practicum are recorded on Comp Tracker. The student will be trained/oriented in the use of the electronic tracking system during the training program. It is the responsibility of the student to ensure all competencies are met by the end of the Symptom Relief and clinical field practicum. The clinical coordinator/faculty will review competency checklists via Comp Tracker on a frequent basis to ensure the student is progressing and meeting required competencies. Students may not enter second semester placements until all prerequisite courses (noted below) are successfully completed. Competencies not completed in the first semester placements must be carried over/completed in the second and/or third semester placement.

Prerequisite(s): PA1110, PA1130, PA1260, PA1270, PA1310, PA1600, PA1350, PA1330, PA1500, PA1410, PA1450

PA1620 - Clinical Field Practicum III

The Clinical and Field practicums for the Primary Care Paramedic program are integrated into three semesters. The first semester involves rotations on ambulance and in hospital that are scheduled over the last 4 weeks of the semester. The second semester involves rotations on ambulance and in hospital, scheduled over the last 6 weeks of the 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 are 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 apply all skills learned in the first and second semesters within the milieu of the hospital and on ambulance. The student will develop communication skills while interacting with patients and staff, take vital signs, assist with patient assessment, and provide basic care to patients at the PCP level. This will also include IV Therapy, ECG monitoring and administering Symptom Relief medications. In the third semester, students will continue to be placed with preceptors in the pediatric setting such as E.R. or pediatric unit, for a minimum 36 hours, adult ER for a minimum of 84 hours, and on ambulance for a minimum of 336 hours. The clinical and field practicum times are carried over from PA1610, and shall be 7 weeks in length. In all three semesters, the preceptors will assist the student to apply theory and didactic content to the real world. Competencies for the field (ambulance) and clinical (hospital) practicum are recorded on Comp Tracker.
The student will be trained/oriented in the use of the electronic tracking system during the training period. It is the responsibility of the student to ensure all competencies are met by the end of the Clinical and Field Practicums. The Clinical Coordinator/Faculty will review competency checkpoints via Comp Tracker 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 by the Clinical Coordinator/Faculty. The mid rotation evaluation will identify student strengths and weaknesses, as well as clarifying any outstanding competencies that are required to be met by the end of the PCP program.

Prerequisite(s): PA1130, PA1130, PA1260, PA1270, PA1310, PA1600, PA1350, PA1510, PA1450, PA1610, PA1330, PA1500, PA1410

PC1100 - Political Science • Introduction to Canadian Politics and Government is an introductory course in political science. Students are introduced to the discipline of political science and to the structure and role of federal, provincial, and municipal government institutions in Canada. They also study some of the major contemporary political issues in the country.

PD2100 - Portfolio Development
In this course students will create a portfolio of their work. Topics include studio photography, portfolio types, and portfolio development and maintenance.
Prerequisite(s): MC1170

PD2110 - Special Project I
In this course students will identify the elements and components necessary to launch an event such as an exhibition and/or fashion show. Students will learn to develop and implement a project plan complete with checkpoints and documentation.
Prerequisite(s): Successful completion of semesters one through four.

PD2120 - Special Project II
In this course students will implement an event plan and corresponding timeline while conducting regular checklists. Students will also learn how to critically evaluate the event, make recommendations, and develop corresponding documentation.
Prerequisite(s): PD2110

PE1100 - Basic Electronics (M, E)
This M and E introductory course in electrical theory covers the basic concepts of electricity, circuit analysis, and magnetism. The laboratory work is designed to develop skills in the construction of electrical circuits, use of electrical measuring instruments, and reinforce theoretical concepts.

PE1140 - Basic AC Electronics (M, E)
This M and E course covers basics of A.C. theory and application. Analyzing A.C. circuits using impedance, admittance, and phase to obtain any required circuit quantities as current, voltage, power, and frequency. This course examines resonance frequency and phase relation to sinusoidal waveform on capacitors, inductors, and resistors. Electrical measuring equipment such as oscilloscope, frequency generators, frequency counters, VOM, and other electronic measuring devices will be used to enforce theoretical concepts.
Prerequisite(s): PE1100

PE1200 - Basic Aircraft Electrical Systems (M, E)
The purpose of this M and E course is to give the student an overview of aircraft electrical systems. Batteries, generators, alternators and ground power sources will be explained. Basic wiring practices as well as an introduction to wiring schematics and ignition systems will be completed. The practical portion of this course will include all aspects of wire routing, securing, tying, splicing and attaching.

PE1300 - Battery Maintenance (M, E)
This M and E course is designed to have the student deep cycle an Aircraft Ni-CAD battery and charge an aircraft Lead acid battery.
Prerequisite(s): PE1200

Co-requisite(s): PE1350

PE1350 - Electrical Power Systems (M)
This M 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

Co-requisite(s): PE1300

PE1510 - Electrical Rotating Machines
This course introduces the learner to electrical rotating machines. It covers theory, typical configurations and operating parameters. The learners gain an appreciation of the machine types, circuit arrangements, and operating characteristics through lab exercises.
Prerequisite(s): ET2100

PE1511 - Electrical Stationary Machines
This course introduces the learner to stationary electrical machines, transformers and critical service power supplies. It covers theory, typical configurations and operating parameters as well as harmonic distortion and mitigation techniques. The learners gain an appreciation of machine types, system configurations, and operating characteristics through lab exercises.
Prerequisite(s): PE1510

Co-requisite(s): MA2101

PE2100 - Analog Electronics (M, E)
This M and E course is an introduction to analog application. The student will cover all basic theory in power supply, amplifiers, radio receivers and transmitters. In labs the student will identify symptoms in malfunctioning equipment and perform preliminary checks and eliminate obvious problems. This course will direct the student through a balanced approach of theory and practical experience in constructing circuits from diagrams, component identification and the use of electronic test equipment.
Prerequisite(s): PE1140

PE2130 - Electrical Practices
This course introduces the learner to the plant electrical distribution system. It provides a foundation in the principles applied to the distribution, protection and control of plant power. It also provides an understanding of arc flash hazard analysis and labeling.
Prerequisite(s): PE1511

PE2140 - Digital Electronics (M, E)
This M and E course provides an effective way to teach student the basics of digital methods and techniques. The microprocessor architecture covers the operation, memories, how personal computers work. All labs experiments and troubleshooting techniques will enhance the student concepts of digital electronics in this course.

PE2240 - Hazardous Areas
This course gives the learner an understanding of hazardous area classifications. It includes system design to confine an explosion inside an enclosure, isolate the ignition source and limit the energy flow into the hazardous area. The learner receives hands on training to install and maintain hazardous area equipment.
Prerequisite(s): XD1810 or MP2170

PE2430 - Plant Electrical Systems
This course introduces the learner 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, safety in a motor control center, and digital controllers used for energy management (demand controller) and motor control.
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

PE2730 - Industrial Instrumentation Practices
This course is designed to provide the Instrumentation and Controls Engineering Technologist with the knowledge and skills necessary to implement safe systems in an industrial environment. Emphasis will be on OHS, WHMIS, safe working practices, instrument wiring and grounding considerations, fasteners and adhesives, conduit and tube and fitting installations.
Prerequisite(s): CI1310

PE2800 - Industrial Mechanical Systems
The purpose of this course is to introduce the learners to industrial mechanical systems. The learners are expected to use this knowledge to assist with improving the efficiency of common mechanical processes, in an effort to improve product quality. Outcomes 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 matter 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.

**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 the students’ knowledge and understanding of basic physics principles, concepts and applications related to mechanics. The course also extends abilities in data handling, problem solving and experimentation.

**PH1101 - Physics**

This is a second semester course designed to extend the students knowledge and understanding of basic Physics principles, concepts and applications related to mechanics. The course also extends abilities in data handling, problem solving and experimentation.

**PH1120 - Introductory Physics I**

Transferable to MUN Physics 1020. This is an introductory course designed to extend students knowledge and understanding of the basic concepts, principles and applications of mechanics. Physics I is a college credit course which may be used as a transfer credit course in Physics in a Memorial University academic degree program. Topics covered include kinematics in one and two dimensions, vectors, dynamics, equilibrium, work and energy, and linear momentum.

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

**Co-requisite:** First semester pre-calculus Mathematics.

**PH1121 - Introductory Physics II**

Transferable to MUN Physics 1021. Physics II is an introductory level physics course which may be used as a transfer credit course in physics in a Memorial University academic degree program. Topics covered include 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 MA1130 or (MUN Mathematics 1000). MA1130 (MUN Mathematics 1000) may be taken concurrently.

**Co-requisite:** Second semester calculus stream 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 Newtons Laws, Work and Energy, Momentum, and Static Equilibrium.

**Prerequisite(s):** Completion of Physics 2204 and Physics 1204 in high school and enrolment in Mathematics 1130 (MUN Mathematics 1000) concurrently.

**Co-requisite:** Mathematics 1130 (MUN Mathematics 1000), which may be taken concurrently.

**PH1131 - 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. Physcis 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:** 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, and heat and electricity.

**Prerequisite(s):** PH1100 or PH1120

**PH1201 - Physics**

This is an intermediate course designed to extend students knowledge and understanding of physics principles, concepts and applications relating to electricity and magnetism.

**Prerequisite(s):** PH1120

**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

**PH2100 - Geophysics**

Geophysics involves the study of the earth through the application of physics. Geophysics is a broad discipline with applications in mineral exploration, oil and gas exploration, industry and academic research. This course is a basic introduction to geophysical exploration in the oil and gas industry. Topics will center around the major exploration tools — Seismic, magnetics and gravity.

**Prerequisite(s):** GE2500

**PM2120 - Drilling Technology I**

This is the first of three courses in drilling technology. This course covers all aspects of rig construction and operation and fundamental operations associated with drilling a well for petroleum exploration and production in both onshore and offshore environments.

**Prerequisite(s):** CF2540, FM2100, GE1501

**PM2121 - Drilling Technology II**

This is the second of three courses in drilling technology. Students apply and build on the skills and knowledge developed in “Introduction to Drilling Technology” to carry out drilling engineering analysis and optimization and well planning.

**Prerequisite(s):** PM2120

**PM2220 - Petroleum Production I**

An introductory course in Petroleum Production operations introducing the major processes and equipment involved in initiating and maintaining production from a wellbore. The course stresses an interdisciplinary approach to well completion and work over planning by introducing concepts of total quality management. Topics include well completion design for both conventional and horizontal wells, tubular selection including interactions with packers, subsurface control equipment, formation damage, depletion and work over fluids, perforating oil and gas wells, scale deposition, prevention and removal treatments, surfactants, acidizing, hydraulic fracturing and work over and completion systems.

**Prerequisite(s):** PM2500, PM2120

**PM2221 - Petroleum Production II**

A second course in Petroleum Production focusing on the engineering aspects of well production design and operation. This course stresses an interdisciplinary approach to solving production problems by introducing concepts of total quality management.
Prerequisite(s): MA1670, PM2220

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 theorems to enable prediction of the amount of water influx into a reservoir.
Prerequisite(s): MA1670, PM2310

PM2320 - Reservoir I
A first of two courses designed to provide an introduction to the principles of petroleum reservoir engineering. The first course serves as an introduction allowing the student to master the concepts of basic reservoir engineering theory and application, providing him/her with the knowledge and skills to effectively study more complex problem solving techniques covered in the second course.
Prerequisite(s): MA2110, TD2110

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): CH2230, 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 to separate the produced gas and water from the oil at or near the wellsite.
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 LFX and indirect fired heaters, condensate stabilization, acid gas treating, gas dehydration, gas processing, compressors, mechanical design of pressure vessels, pressure relief, safety systems and electrical systems overview.
Prerequisite(s): PM2500, TD2100

PM3310 - Drilling Technology III
This is an advanced course in drilling technology which uses simulation software to perform well control operations and identify drilling problems and solutions. Learners build on and apply the skills and knowledge developed in two previous drilling technology courses. As a complement to the course, learners will attend presentations by local industry experts on the latest advances in drilling technologies.
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): PM2221

PO1200 - Introduction to Industrial Processes
This course introduces students to the role of chemical processing in industry. The student will obtain an overview of the chemical processes that take place in a variety of industries. They will also examine some of the processes present in the college campus. They will learn to use block, process flow diagrams (PFD) and pipe and instrument diagrams (PID) for college processes.
Prerequisite(s): EG1430

PO2300 - Introduction To Separation Processes
Learners will be introduced to the variety of separation processes used in industrial processes. Learners 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): CH11500
Co-requisite(s): CH2450, MH2820

PO3100 - Oil and Gas Processing I
This course introduces students to the various processes and plants present in an oil refinery. It focuses in depth on distillation as a separation process. Simulations and training units are used to teach principles associated with distillation operations.
Prerequisite(s): PO2300, MH2820
Co-requisite(s): CH3450

PO3101 - Oil and Gas Processing II
This course continues the study of processes that are used in the oil and gas industry. The various methods to convert unusable products into commercial products are studied. These include thermal cracking, catalytic cracking, hydrocracking. The processes to remove water and sour gases are studied. Simulation and laboratory work will be used to teach students the fundamentals of safe and correct start-up, shut-down and control and troubleshooting of processes.
Prerequisite(s): PO3100

PR1100 - Website Project I
The Website Project I course provides students with an opportunity to utilize and demonstrate the tools, knowledge, and skills developed during the first year of the program. Students will design and create a multimedia-rich Web site based on a given set of criteria. Emphasis is placed on creativity of design and effective use of technology.
Prerequisite(s): CM1401, CP1120, CP3160, CR1510

PR1101 - Website Project II
The Website Project II course provides students with an opportunity to utilize and demonstrate the tools, knowledge, and skills developed during the second year of the Web Development program. Students will analyze the requirements of a substantial Web development project, and design and create a dynamic Web site which incorporates security, database 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 of the Web Development program

PR2170 - Project Management
The purpose of this course is to learn various techniques used to ensure that a project is completed on time, within budget, and with high quality. The student will explore various aspects of project management, such as scope, time, cost, quality and communications and will use project management software to manage a project.

PR2200 - Technological Thesis
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. This will be STAGE 1 of the technical project which will include: Problem Solving and the Engineering Design Process; Project Identification; Project Analysis; Project Research; Report Preparation; Report Presentation.
Prerequisite(s): All 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.

PR2250 - Capstone Project I (Seminar)
The capstone project enables the learner completing
PR2251 - Capstone Project II

The capstone project enables the learner completing a Diploma in the Civil Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on an independent 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. The project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): All courses in previous academic semesters and minimum cumulative GPA of 2.0

PR2560 - Technical Thesis

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 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. The project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will be delivered to the students by a technical instructor and a communications instructor.

Prerequisite(s): All courses in previous academic semesters and a minimum cumulative GPA of 2.0

PR2600 - 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 or in teams of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. Students should commence planning for the course at the beginning of the final year of studies. The project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will be delivered to the students by a technical instructor and a communications instructor.

Prerequisite(s): Successful completion of semester 6 & GPA = 2.0
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):** Successful completion of semester 6 with GPA = 2.00

**PR2611 - Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological applications, and fully document and present their findings.

**Prerequisite(s):** Successful completion of semester 6 & GPA = 2.00

**PR2620 - Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological applications, and fully document and present their findings.

**Prerequisite(s):** Successful completion of semester 5 & GPA = 2.00

**PR2631 - Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological applications, and fully document and present their findings.

**Prerequisite(s):** PR2630

**PR2632 - Technical Thesis**
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the entire program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological applications, and fully document and present their findings.

**Prerequisite(s):** PR2660 & all courses in previous academic semesters

**PR2640 - Technological Thesis I**
The technological thesis enables the student completing a Diploma Program in Engineering Technology to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in teams of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. At the end of this course, the student will have completed a proposal of their technical thesis that will be completed in the following academic semester of their program. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will be 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

**PR2641 - Technological Thesis II**
The technological thesis enables the student completing a Diploma Program in Engineering Technology to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The student can work independently or in terms of two to carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. Students should commence planning for the course at the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that students are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that students attend these meetings. This course will be delivered to the students by a technical instructor and a communications instructor.

**Prerequisite(s):** PR2640 and all courses in previous academic semesters

**PR2650 - Technological Thesis**
The technological thesis enables the student completing a Diploma in the Electrical Engineering Technology (General) program to demonstrate the application of skills and knowledge developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0

**PR2651 - Technological Thesis**
The technological thesis enables the student completing a Diploma in the Electrical Engineering Technology (General) program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent student, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a
PR2691 - Capstone Project II

The capstone project enables the learner completing a Diploma in the Telecommunications Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): PR2690 and all courses in previous academic semesters

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. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): All courses in the previous academic semesters and a minimum cumulative GPA of 2.0

PR2741 - Capstone Project II

The capstone project enables the learner completing a Diploma in the Instrumentation Controls Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): PR2740 and all courses in previous academic semesters

PR2750 - Capstone Project I (Seminar)

The capstone project enables the learner completing a Diploma in the Architectural Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): All courses in previous academic semesters and a minimum cumulative GPA of 2.0

PR2751 - Capstone Project II

The capstone project enables the learner completing a Diploma in the Architectural Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): PR2750 and all courses in previous academic semesters

PR2760 - Capstone Project I (Seminar)

The capstone project enables the learner completing a Diploma in the Computing Systems Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

Prerequisite(s): All courses in previous academic semesters and a minimum cumulative GPA of 2.0

Available through Distributed Learning
Available through correspondence
beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings. This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0.

**PR2761 - Capstone Project II**
The capstone project enables the learner completing a Diploma in the Computing Systems Engineering Technology (Co-op) program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings.

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

**Prerequisite(s):** PR2760 and all courses in previous academic semesters.

**PR2780 - Capstone Project I (Seminar)**
The capstone project enables the learner completing a Diploma in the Process Operations Engineering Technology program to demonstrate the application of skills and knowledge developed throughout the program. Learners taking this course will work with minimal supervision on a project, under the guidance of a faculty member. The learner can work independently or in teams of two to carry out an in-depth study of a problem, design or technical application, and fully document and present their findings. At the end of this course, the learner will have completed a proposal of their capstone project that will be completed in the following academic semester of their program.

Learners can commence planning for the course prior to the beginning of the final year of studies. Since the project and report are to be prepared through independent study, the assigned hours represent only part of the time that learners are expected to allocate to the course. Regular meetings with a faculty supervisor will be scheduled within the assigned hours and it is mandatory that learners attend these meetings.

This course will be delivered to the learners by a technical instructor in collaboration with a communications instructor.

**Prerequisite(s):** All courses in previous academic semesters and a minimum cumulative GPA of 2.0.

**PR3630 - Technical Thesis (Seminar)**
The technical thesis enables the student completing a diploma in the Industrial Engineering Technology (Co-op) program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and then orally present their findings. Projects must address the social, economic, environmental, legal and ethical considerations where relevant.

**Prerequisite(s):** Semester 7 complete and GPA of 2.0

**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, 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: psychology as a science, learning, perception, sensation, personality, and 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: (i) stress and adjustment, (ii) language and thought, (iii) intelligence and psychological testing, (iv) motivation and emotion, (v) social psychology, (vi) and psychopathology.

**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. This 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 neuroscience, human develop-
ment, learning and memory, sensation and percep-
tion, and states of consciousness. This course is
transferable to MUN Psychology 1000.

PS1151 - Introduction To Psychology II
This course provides 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. This course is transferable
to MUN Psychology 1000.

PS1200 - Drugs & Behaviour
This course examines the relationship between drugs,
especially psychoactive substances, and their influ-
ence 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 exam-
ines the nature of dependency on a physical, psycho-
logical, 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 per-
sons, 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 behav-
ior 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 organi-
zational 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 relation-
ships and roles of health professions within the hos-
pital organizational structure.

PS1420 - Health Care Organization and Structure
This course is an introduction to the study of organi-
zational 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 relation-
ships and roles of health professions within the hos-
pital 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 dif-
ferent periods of the lifespan, including both physical
and psychological growth. It will provide a perspec-
tive on the many changes that occur during a persons
life, and examine reasons for developmental change
or disturbance.

PS2340 - Organizational Behaviour •
This is an introductory course in the study and practi-
cal application of organizational behavior. Through
the use of workplace examples and the analysis of
the interrelated levels of individual behavior, group
functioning, and organizational structure, students
will examine how employees within organizations
achieve both personal and organizational goals.
Topics such as motivation, leadership, group dynam-
ics, and organizational communication are studied.

PT1110 - Reciprocating Engine Fundamentals (M)
This M course will provide learners with the basic
knowledge of the operation of aircraft reciprocating
engines and engine components. Learners will per-
form engine ground-runs and basic aircraft servicing.
Prerequisite(s): GM1120, GM1130
Co-requisite(s): PT1115

PT1115 - Reciprocating Engine Fundamentals (M, E)
This M and E course will provide learners with the
basic knowledge of the design, construction and the-
ory of both personal and organizational goals.
This course also provides a practical exercise that
enables the learner to employ the learned concepts
within the power engineering field. This course covers
principles in mechanics, physics, math, and problem solv-
ing to ensure the learner can see relevance in the
applied principles of Power Engineering. This course is
a critical building block for enabling learners to
interpret findings and evaluate specific conditions in
the power engineering field.
Prerequisite(s): PT1110

PW1100 - Power Engineering Mathematics
This course will provide the learner with information
enabling them to describe the overall industrial back-
ground and certification system for Power
Engineering. The course will introduce basic math,
general mathematical concepts, and the process to
enable trades persons to function in the institutional
setting by developing numeracy skills required for
technical courses. The course also provides founda-
tion for experimental learning through knowledge of
math relating to on-the-job skills and practices.

PW1110 - Power Engineering Science
This course will provide the learner with an introduc-
tion to basic science and is sequentially designed to
provide a strong base from which to build upon in
the power engineer field. This course covers princi-
bles in mechanics, physics, math, and problem solving
to ensure the learner can see relevance in the
applied principles of Power Engineering. This course is
a critical building block for enabling learners to
interpret findings and evaluate specific conditions in
the power engineering field.
Prerequisite(s): PW1100

PW1120 - Introduction to Industrial Drawings
This course will introduce the learner the concept
of sketching centre lines and dimensioning standard
object views, sketching techniques and sectioning.
This course also provides a practical exercise that
enables the learner to employ the learned concepts
by completing applied drawings.

PW1121 - Industrial Drawings And Legislation
This course will introduce to the learner the concept
of sketching centre lines and dimensioning standard
object views, sketching techniques and sectioning.
This course also provides a practical exercise that
enables the learner to employ the learned concepts
by completing applied drawings. Learners will also
explore the legislation requirement for Power
Engineering.

PW1130 - Introduction to Communication Skills
This course will give the learners an opportunity to
improve sentence structure for clarity, concrete lan-
guage, conciseness, correctness, punctuation, para-
graph structure, unity, coherence and development. It
will also introduce memo writing, content, format
and planning. This course will enable learner to
increase their skills in effective communication and
apply those skills to different power engineering leg-
rations.

PW1140 - Work Safety and the Environment
This course will introduce power engineering learners
to the aspects of health and safety factors that are
required for students to work in the industrial environments as a Power Engineer. This course will expose learners to WHIMS (Workplace Hazardous Material Information System), PPE (Personal Protective Equipment), Confined space entry, First Aid, Basic fire extinguishing, proper handling/handling of dangerous gases and fluids. This course will also allow the learner to become aware of environmental protection techniques.

PW1150 - Work Safety And Environment I
This course will enable the learner to discover the classification, label, and MSDS regarding hazardous materials. Learners will be introduced to the correct personal protective requirements for an industrial setting, and be identifying the correct procedures for confined space entry, and the cautions surrounding hazardous gases.

PW1160 - Work Safety And Environment II
This course will introduce power engineering learners to the various aspects of health and safety factors that are required to identify applicable information regarding Emergency First Aid, basic fire extinguishing, proper handling/storage of dangerous gases and fluids to the industrial environment. This course will also allow the learner to become aware of correct environmental protection techniques. 
Prerequisite(s): PW1150

PW1200 - Power Engineering Maintenance I
This course is designed to provide learners with the understanding of the concepts and requirements for identification for various mechanical, ferrous, and non-ferrous engineering materials. It also provides learners an introduction to basic welding methodology, terms and flaws. This course will also expose learners to standard piping, fittings, and valves relating steam plant operations.

PW1210 - Power Engineering Operations I
This course is intended to introduce the concepts relating to high pressure and low pressure boiler systems relating to their design, operations, and safety using the ASME (American Society of Mechanical Engineers) requirements. Learners will identify various types of boiler construction, associated equipment, and multiple combustion processes.

PW1240 - Power Engineering Operations II
This course is intended to discover the detailed components and operational procedures of a boiler plant. This course will also describe the processes in boiler startup and shut down. This course also provides the learner with diagnostic information pertaining to closed and open loop water contamination, repairs, with external and internal feedwater systems. 
Prerequisite(s): PW1230

PW1300 - Electrical Principles
This course introduces the concepts of electricity and magnetism. Learners will engage in practical exercises using metering devices that apply these basic electrical concepts as it relates to power plant operations. This course will also serve to introduce motors, generators, transformers, and circuits along with their descriptions and operation.

PW1310 - Power Engineering Controls and Instrumentation
This course provides learners with an understanding of the control loops along with the details and reasoning why the components are in that loop. It introduces the concepts relating to boiler protection devices, programming, troubleshooting, and computer controlled boiler systems.

PW1311 - Boiler Controls and Instrumentation
This course serves to provide learners with an understanding of the basic control loops along with the details and reasoning why the components are in that loop. It introduces the concepts relating to boiler protection devices, programming, troubleshooting, and computer controlled boiler systems.

PW1320 - Power Engineering Heating Boilers and Systems
This course is designed to introduce learners to the identification of various boiler systems, their construction, application, and diagnostics. This course also discusses reasoning for specific boiler fitting design, steam heating, hot water, warm air, infrared, and steam boiler operations. It introduces the learner to various designs in boiler feed water, pneumatic, electrical, and electronic controls. It also introduces the reasoning for ventilation and various air filtration systems.

PW1330 - Heating Boilers and Systems I
This course is designed to introduce learners to the identification of various boiler systems, their construction, application, and diagnostics. This course also discusses reasoning for specific boiler fitting design, steam heating, hot water, warm air, infrared, and steam boiler operations. 
Prerequisite(s): PW1121

PW1340 - Heating Boilers and Systems II
This course is designed to expand upon various hot water boiler systems, their construction, application, and diagnostics. This course also discusses reasoning for specific boiler fitting design, hot water, warm air, infrared, and steam boiler operations. It also serves to introduce the student to various designs in boiler feed water, pneumatic, electrical, and electronic controls. It also introduces the reasoning for ventilation and various air filtration systems. 
Prerequisite(s): PW1121

PW1400 - Auxiliary Systems
This course is intended to enable learners to become aware of auxiliary systems that may be affected by any closed or open boiler system. It discusses the design, methods, and requirements that may have an effect on the interrelationship of the lighting, water supply and sanitary drainage systems.

PW1410 - Power Engineering & Refrigeration Systems
This course is intended to provide learners with information regarding various types of refrigeration systems as it pertains to thermodynamics, types of refrigerant, compressors systems, compressors and heat exchangers. It also provides clear definition of meter systems, controls, and accessories. It discusses the start up procedures, and operations of compressors systems. It also discusses absorption systems and operation as it relates to refrigeration.

PW1420 - Power Engineering & Air Conditioning Systems
This course is intended to provide learners with detailed descriptions of the application of air conditioning systems, control, and recovery related to power plant operation. It provides a comprehensive description of air, its distribution, and ducts systems. It also introduces the learner to coil types and operation, along with heat gain and loss.

PW1421 - Air Conditioning Systems
This course is intended to provide learners with detailed descriptions of the application of air conditioning systems, control, and recovery related to power plant operation. It provides a comprehensive description of air, its distribution, and ducts systems. It also serves to introduce learners to coil types and operation, along with heat gain and loss. 

PW1430 - Power Engineering Maintenance II
This course introduces learners to the purpose of lubrication, along with its classes and properties. This course is intended to enable learners to become aware of the procedures for plant maintenance as it pertains to bearing lubrication, general shop procedures, tools and equipment. This course also describes the general boiler maintenance and cleaning procedures.

PW1440 - Power Engineering and Industrial Applications
This course is designed to give learners the description, layout and operation of hot oil systems and the role it plays in industrial steam plant operation. It also provides learners with the exposure to the processes that occur in pulp mills, gas plants, food pro-
cessing, and sawmills. These processes are discovered through a combination of in class theory and planned site visits.

**PW1441 - Power Engineering Industrial Applications**
This course is designed to give learners the description, layout and operation of hot oil systems and the role it plays in industrial steam plant operation. It also provides learners with the exposure to the processes that occur in pulp mills, gas plants, food processing, and sawmills. These processes are discovered through a combination of in class theory and planned site visits.

**PY1100 - Introduction to Photography I**
This course introduces students to basic photographic techniques, teaching the use of the 35 mm camera as a tool for expression. It also teaches the fundamentals of black and white film processing and print-making. 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

**PY1150 - Photography**
This course will teach students how to operate a Digital Single Lens Reflex camera and the rules of composition through practical and theoretical instruction. Students must have access to a Digital Single Lens Reflex camera. This course is not available to students in the following programs: Journalism, Film and Video Production, Visual Arts, Graphic Communications and Graphic Design.

**PY1200 - Photography I**
Students will be introduced to the basic principles and mechanics of digital photography as applied to the graphics industry.

**PY1201 - Photography II**
Students will be introduced to various photographic techniques as applied to the graphics industry.

**Prerequisite(s):** PY1200

**PY1320 - Photojournalism I**
In this course, students will learn basic photographic principles and techniques. They will learn how to use digital cameras and how to perform basic image editing functions using industry-standard digital image editing software.

**PY1321 - Photojournalism II**
Building upon the technical foundation acquired in Photojournalism I, students will learn the principles of news and feature photography.

**Prerequisite(s):** PY1320

**PY2200 - Photography III**
Students will learn the importance of the well crafted photographic image as it is used in the graphics industry. Consideration of the photographic image as a key element of an overall design, and specifically as a design anchor point, will be especially emphasized.

**Prerequisite(s):** PY1201

**Prerequisite(s):** PY2200

**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, GE1120

**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 the determination of age, sex, size and maturity of fish and wildlife, and collecting biological samples. It includes information on animal care, anatomy, physiology, aging techniques, sexing techniques, size scales/indices, preservatives, collecting methods, species identification and safety precautions.

**Prerequisite(s):** BL1II20 Co-requisite(s): BL1I400

**RM1301 - Fish and Wildlife Management Methods II**
This course requires the use of traps, firearms, immobilizing and laboratory equipment, and a suitable environment. It involves determining age, sex, size and maturity of fish and wildlife, the collection and preservation of biological samples. 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):** RM1II20 Co-requisite(s): RM1I201

**RM2420 - Habitat Management**
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):** BL1I400

**RM2420 - Wildlife Techniques I**
This course provides theoretical and practical training of mammal and bird capture techniques, handling and tagging, chemical immobilization and radio/biotelemetry techniques.

**Prerequisite(s):** BL1I400

**RM2420 - Wildlife Techniques II**
This course investigates methods to determine sex, age, size and maturity of mammals and birds. Current techniques used are inventory and monitor mammal and bird populations will be studied.

**Prerequisite(s):** BL1I400

**RM2420 - Wildlife Techniques III**
This course involves management including habitat enhancement, reclamation, and protection techniques.

**Prerequisite(s):** RM2I200
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 students' ability to manage all types of documents. Students will also be introduced to records control, quality control and improvement.

RP1200 - Archives Principles
- This course introduces students to the study of archival storage. Archives will be examined from their evolution to their current role/function. Students will examine archival principles, procedures and career opportunities in the discipline.

RP1300 - Active, Semi-active and Inactive Records
- This course involves a detailed examination of active, semi-active and inactive records. Students examine each group of records in terms of storage, maintenance, and retrieval procedures; supplies and equipment are examined in terms of suitability and cost. Records destruction policies and procedures are examined.

RP1400 - Information Security and Procedures
- This course is designed to teach students the fundamentals of information security and procedures. The topics covered will make 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 using a simulation approach. The topics covered will make students aware of the different types of classification systems and show them how to select one that is appropriate for a particular group of records; they will be given an opportunity to work on projects involving these various systems.

RS1100 - Introduction to Community Recreation Leadership
- This course introduces students to the community recreation delivery system. The importance of dynamic leadership in the recreational delivery process will be emphasized. Students will analyze a variety of settings and populations for which recreation programming and services are offered.

RS1200 - 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 students role in recreation service programming and the importance of recreation as a regular component of active living. Students will participate, plan, lead and evaluate recreation activities such as walking, hiking, gardening and board/card games. Students will establish baseline step count for daily activity with the use of a pedometer. The opportunity for students to attain certification in the 3M National Coaching Certification Program will be provided.

RS1250 - Recreation Activities I
- This course is designed to provide exposure as well as develop leadership skills in a variety of recreation activities. Students will review various topics including the place of sport in society, the role of all levels of government in administering sport, safety in recreation activities, and the history of indoor/outdoor recreation activities. Students will be introduced to the methods of scheduling teams and individual sports competitions. A variety of outdoor recreational activities will be introduced including cross-country skiing, snowshoeing, and winter camping.

RS1280 - Program Planning
- This course is an introduction to the programming process required to produce quality recreation programs. Students will be provided with an overview of program planning and the human life stages to aid in understanding the resources required to provide programming. Students will learn about the six steps of the program planning process including needs assessment, and program objectives, solutions, design, implementation, and evaluation.

RS1320 - Recreation Administration
- This course is a study of the administrative and organizational procedures used in the management systems of community and volunteer recreation agencies. Students will study the history of recreation and recreation management; recreation organization and management; recreation delivery system; fund-raising; grants and proposal writing; and financial management.

RS1360 - Outdoor Winter Recreation
- A variety of outdoor recreational activities will be introduced including cross-country skiing and snowshoeing as well as an introduction to Canada's Physical Fitness Guide to Healthy Living. Safety and injury prevention will be discussed through developing an awareness of preventative techniques and preparation to avoid injuries. Students will acquire theoretical knowledge and personal skills in classic techniques, snowshoeing, and hill maneuvers. Equipment requirements and selection, sizing, care and waxing will also be discussed.

RS1370 - Recreation Activities II
- This course is a study of the principles of effective outdoor leadership and the application of those principles to selected outdoor experiences. The potential of tourism, adventure tourism, and ecotourism in Newfoundland and Labrador will be examined with a focus on leadership skills and group dynamics. Students will gain exposure to a variety of outdoor recreation activities and will be provided with the knowledge and skills to assist them in developing programs for children, youth, adults, and older adults.

RS1400 - Community Agencies
- This is a seminar based course in which students study 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.

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, II and Clinical Elective). This course is a mandatory requirement prior to entering the RT III clinical year.

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.

Available through Distributed Learning
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 anesthesia machines, 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

RT2452 - Neonatal/Pediatric Respiratory Care II
This course introduces the student the clinical management of the pediatric patient. Major areas of study are neonatal resuscitation (NRP), pediatric advanced life support (PALS), pediatric cardiopulmonary pathophysiology, pediatric mechanical ventilation, high frequency ventilation. Formal certification for NRP and PALS is not granted at the end of this course.
Prerequisite(s): Successful completion of semester 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 ECG 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 II. The course is designed to help students prepare for their clinical year of training. Clinical Practicum I and II. Specialized high fidelity manikins will be used in a simulated clinical setting to review didactic knowledge and practice skills previously taught. Students will be given various patient case-based scenarios and will be expected to provide satisfactory respiratory treatments in this simulated setting. Care of the neonatal, pediatric and adult patient will be emphasized. Following each case scenario, there will be a time for debriefing and discussion of student performance. This course will allow for the continued building of skills and knowledge before entering the hospital/clinical environment. There will also be an opportunity for students to rotate through various clinical areas to review and practice skills done in simulation.
Prerequisite(s): Successful completion of 5th semester

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, Cardio-pulmonary 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 specific 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

RV1100 - Decks and Fences
This course will focus on the special requirements for constructing fences, decks and other exterior unprotected wooden and synthetic structures. Learners will apply their knowledge through the construction of a fence and deck.
Prerequisite(s): AJ1111, AJ1160

RV1120 - Building Systems I
This course will introduce the learner to structural requirements of buildings and the principles of controlling air, moisture, thermal and sound movement and transmission in buildings. Practical exercises in the control of air, moisture, thermal, and sound will be utilized to enhance the learner’s ability to apply the concepts.
Prerequisite(s): AJ1111, AJ1160

RV1140 - Accommodated Construction
This course will enable the learner to become aware of the requirements and specifications surrounding the basic requirements of barrier-free access for residential and commercial renovations projects. Learners will apply the theory through a practical application of construction by planning, drawing and constructing a barrier free structure.
Prerequisite(s): AJ1111, AJ1160

RV1160 - Renovation I
This course provides the learner with the knowledge of construction of heritage and obsolete buildings and the issues surrounding renovating these structures. Learners will apply the knowledge they have gained through practical application of a renovation emphasizing the recycling of reusable materials. Prerequisite(s): AJ1111, AJ1160

RV1161 - Renovation II
This course will introduce the basic concepts of shoreline and wetting, and structural tie-ins. Practical work will concentrate on more complex structural integrations, particularly as applied to roof frames. Learners will be introduced to the concepts of challenges associated with unique building structure designs.
Prerequisite(s): RV1160

RV1170 - Basement Renovation
This course will focus on basement renovation techniques and unique situations and solutions when renovating basements. Learners will gain an understanding through practical application of the presented topics by performing a simulated or complete basement renovation.
Prerequisite(s): AJ1111, AJ1160

RV1200 - Green Renovating
This course will enable the learner to apply good practices of energy conversation, waste management, environmental impact, and indoor air quality management to projects. The learner will gain practical experience through performing a green building practical lab on residential or commercial structure.
Prerequisite(s): AJ1111, RV1160

RV1230 - Project Manager I
The learner will become familiar with the concepts of project organization, time management, materials takeoff and estimating for construction projects. Learners will perform practical projects that apply the concepts of management of a project.
Prerequisite(s): AJ1111, RV1160

RV1231 - Project Manager II
The learner will apply skills acquired in RV1230 - Project Manager I to produce a complete project plan, required specifications, match the working drawings, create the materials take-off and labor estimate for a project.
Prerequisite(s): RV1230
RV1250 - Renovator's Basic Plumbing
This course will introduce the learners to the basics of residential plumbing systems and how to organize them with the renovation project. Learners will perform practical exercise to complete associated renovation plumbing tasks.
Prerequisite(s): AJ1111, RV1160

RV1260 - Renovator's Basic Electrical
This course will introduce the learners to the basics of electrical AC and DC theory as it relates to residential wiring systems, how to enable to identify the materials and tools so they can identify how they can interact with the certified electrical professional is required during a renovation project.
Prerequisite(s): AJ1111

RV1270 - Renovator's Basic HVAC
The learner will be introduced to principles and concepts of equipment, design and operation of Heating, Ventilating and Air Conditioning (HVAC) systems and components as they relate to residential and light commercial building applications. Practical exercises in heat load calculations, HVAC controls, use of testing instruments, and air balancing will utilized to enhance the student’s ability to apply the concepts.
Prerequisite(s): AJ1111

RV1300 - Residential Estimating II
In this course, the learner will apply knowledge gained from completing AJ1170 - Residential Estimating to construction drawings and situations. All calculations and layouts are to be quality checked using the Canadian Building Code.
Prerequisite(s): AJ1170

RV1320 - Foundation Systems
The learners will develop an understanding of the numerous components and associated installation practices that combine to produce typical residential and light commercial concrete foundations and structures. Several residential forming systems, as well as ICF, will be studied in detail. Practical assignments and activities will support the delivery of this subject matter.
Prerequisite(s): AJ1111, AJ1160

RV1340 - Cabinet Layout and Design
This course will enable the learner to summarize requirements for cabinet design, site preparation, and installation techniques. Learners will be introduced to both new home and renovation cabinet installation procedures. Learners will receive in class instruction and also have the opportunity to practice and apply the lessons through practical activities.
Prerequisite(s): AJ1111, RV1160

RV1350 - Flooring
Learners will gain an understanding of different types of flooring installation and removal procedures. Topics to be covered include underlayment, resilient tile, wood floors, laminate floors, engineer plywood floors, ceramic, porcelain tile, stone, resilient, and cement floors installation and removal procedures. Additional topics include site preparation, demolition, moisture monitoring, and estimation. Learners will complete practicals in the installation and removal of floors and floor finishes.
Prerequisite(s): AJ1111, AJ1170

RV1360 - Special Trims
Learners will gain an understanding of numerous types of interior trims and finishes. Topics to be covered include interior plastering and wall finishes/drywall, moldings, and painting/wood finishing. Learners will complete practicals in the installation and removal of trims, plastering, priming, and painting.
Prerequisite(s): AJ1111, RV1160

RV1400 - Demolition and Waste Management
This course will provide the learner with a basic understanding of demolition and disposal practices. Recognizing hazardous materials will be emphasized in this course. Safe work practices will be emphasized to reduce the risk of accidents and injuries during demolition work. The need for proper waste diversion strategies will also be tabled during the course.
Prerequisite(s): AJ1111

RV3310 - Rotary Wing Aircraft (M)
This M course is to introduce the learner to the helicopter and the helicopter industry. Its aim is to provide learners with knowledge of helicopter fundamentals, theory of flight and the different main rotor systems. This is to enable learners to perform maintenance functions on a helicopter main rotor and associated systems.
Prerequisite(s): GM1120, GM1130

RV3341 - Rotary Wing Aircraft Systems (M)
This M course is to provide the learners with knowledge of the basic systems found on a helicopter. This will enable the learner to perform maintenance inspections and repairs on the complete aircraft.
Prerequisite(s): RW3340

SC1120 - Introduction to Sociology •
This is the first of two introductory courses in sociology. Students are introduced to the various methods and perspectives common in sociology. They then apply these methods and perspectives to the study of several issues related to contemporary Canadian society.

SC1121 - NL Society and Culture
This is the second of two introductory courses in sociology. Students use sociological methods and perspectives to examine aspects of Newfoundland and Labrador society and culture.

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

SC1160 - Sociology of Families •
Transferable to MUN Sociology 2270. This course includes the topics: defining the family, sociological perspectives on the family, family diversity, dynamics of intimate relationships, marriage, children and parenting, lone parent families, separation, divorce and remarriage, the family and work, the family and poverty, middle age and later, social problems in the family, and trends in Canadian family life.

SC1240 - Healthy Aging
This is an introductory course in the area of aging. Using a multidisciplinary approach, students will gain knowledge and understanding of the aging process and older adults which is the foundation of further study of the aging field.

SC1300 - Introduction to Women's Studies
This course provides a chronology of the women's movement by examining its historical development. Students will learn about the Canadian and Newfoundland women's movement through an investigation of the contributions and achievements made by women, while also analyzing many of the persistent barriers to full equality for women.

SC1350 - Contemporary Issues for Women
This course examines and analyzes issues and concerns facing women in contemporary society from a feminist framework. Topics are examination and analysis include feminism, women and the economy, women and violence, women and the media, women and addictions, and women's health issues.

SC1400 - Sociology - Labrador Society and Culture •
This course will provide students with an opportunity to take a critical look at Labrador society and culture. By developing a sociological perspective, students gain a better understanding of their own society and culture.

SC1430 - Labrador Society and Culture
This course examines Labrador Society and Culture from its pre-Contact origins through to the present day. Through coursework, guest speakers and documentaries attention will center on specific cultural groups/trait within Labrador, as well as their interrelations, which constitute Labrador society.

SD1020 - Orientation to CAS Trades
This course will introduce learners to the Comprehensive Arts and Science (CAS) Trades program, the world of trades and the College/campus learning environment. It provides an opportunity to explore the trades shop, as well as classroom facilities and Learner Services. Learners will discuss goals, careers and learning styles. Learners will learn about safety practices, college values, and best practices.

SD1050 - Personal Skills Development I
This course is meant to examine and promote living skills necessary for aboriginal student success in post-secondary environments. This course will focus upon the creation of a healthy self-concept, sound financial sense, and an awareness of good nutrition and healthy eating habits. It shall also explore ways to manage emotions and the connection between emotional balance and general well-being.

SD1061 - Personal Skills Development II
The purpose of this course is to examine and promote the living skills necessary for aboriginal student success in post-secondary environments. This particular course will explore effective communication and decision making skills, healthy interpersonal relationships, and issues related to parenting and child development.
Prerequisite(s): SD1050

SD1070 - Ethics & Law
This course introduces learners to the legal and ethical rights, obligations and responsibilities of the engineering technician profession in the workplace. Learners will gain an understanding of the intent and application of professional codes of ethics, Tort, Contract Laws, and environmental protection regulations.

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. This available through Distributed Learning
Available through correspondence
course will prepare students for the workplace by illustrating how the skills and practices of successful students parallel the skills and practices of successful professionals.

**SD1171 - Technology Awareness II**
This course (with Technology Awareness I) is designed to raise career awareness levels for engineering technology learners by providing information regarding the engineering technology profession. This course will prepare learners for the workplace by illustrating how the skills and practices of successful students parallel the skills and practices of successful professionals.
**Prerequisite(s):** SD1170

**SD1180 - Field Placement Preparation I**
Students will prepare for their first field placement experience and will gain the necessary information to help them benefit from the field placement experience.
**Prerequisite(s):** Successful completion of all Semester 1 and 2 courses

**SD1181 - Field Placement Preparation II**
This course is designed to prepare students for their second field placement experience. The course provides students with the necessary information to help students benefit from their field placement experience.
**Prerequisite(s):** Successful completion of all Semester 4 and 5 courses

**SD1180 - Field Placement Preparation I**
This course will prepare students for their field placement by 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.

**SD1180 - Field Placement Preparation I**
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.

**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. The course is the first in a series of four courses and begins the development of a career portfolio that the student will continue to work with and maintain throughout their program of study.

**SD1340 - Student, Career and Portfolio Development I**
This course is a continuation of the concepts of student development, career and education plans, and the development of a student portfolio. The student will continue their self and career assessment and planning a career portfolio, and will also explore ethics in the workplace, and interpersonal skills such as trust, conflict management and resolution, stress management, and teamwork. This course is the second in a series of four courses designed to develop a career portfolio that the student will continue to work with throughout their program of study.
**Prerequisite(s):** SD1340

**SD1350 - Portfolios**
This course is designed to give learners the knowledge and skills necessary to complete a portfolio that documents their achievements, the scope and quality of their experience and training, skills and abilities, and their career plans. The learners will also explore a construction industry overview. The portfolio can be used for job applications and during job interviews in preparation for entry into the job market.

**SD1340 - Workplace Skills**
This course develops sound customer service skills in the student and assists the students in preparing for job search and the office environment. Practical exercises, cases and behavioural modelling are conducted to assist the students skill development and knowledge of customer service and expected work ethic, attitude and skills.

**SD1460 - 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. 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.

**SD1470 - College, Career and Portfolio Preparation - Non Co-op**
This course will allow the student to obtain basic college information, an information technology industry overview, a self and career assessment process, and an introduction to ethics and best practices in the Information Technology field. The main focus of this course is the development of a career portfolio that the student will continue to work with throughout their program of study.

**SD1530 - Change in the Workplace**
Students examine the concepts of change in the workplace. Historical aspects of the Canadian Health Care System and recent changes to the system are explored. The significance of these changes to the citizens of Canada and Newfoundland and Labrador, and to the roles of workers in the field will be considered. Areas to be addressed include: management and employee decision making; integration of roles; motivation and job satisfaction; accepting and coping with change; introduction to stress and becoming employed. Application of these concepts to related work settings provide an employees perspective to working in a rapidly changing field.

**SD1570 - Effective Learning**
This course is designed to help Comprehensive Arts and Science students develop the skills, strategies and tools needed to ensure their success in college. Students who successfully complete the course will have a better understanding of themselves as learners and of strategies for improving their learning potential. They will also have a greater appreciation of the need to define their educational and career goals clearly and to develop the habits and skills which will enable them to achieve those goals. The course will also provide an opportunity for students to become aware of the full range of campus resources available to support their learning and to learn how to use those resources effectively. Students will compile a portfolio during this course which should prove to be of value to them throughout their college life.

**SD1580 - Critical Thinking across the Curriculum**
This course is designed to help Comprehensive Arts and Science students develop analytical and critical thinking skills for practical application in their post-secondary programs as well as in their lives and careers. Students who successfully complete this course will have a better understanding of how to present sound and logical arguments and how to apply the skills of critical analysis in their studies as well as in their working and social lives. The course also provides an introduction to the principles and processes of informal debating.

**SD1610 - Clinical Skills I**
The Clinical Skills I course is designed to introduce the respiratory therapy student to the hospital setting. Under direct supervision of the clinical instructor, students will demonstrate respiratory therapy procedures introduced in the laboratory setting. This clinical course is designed to enhance the knowledge and skills concurrently being taught in the didactic and laboratory components of Semester 4. Students may be given the opportunity to observe and/or participate in higher order skills as available in the clinical setting.
**Prerequisite(s):** Successful completion of semester 3
**Co-requisite(s):** All 4th semester courses

**SD1611 - Clinical Skills II**
This course is a continuation of Clinical Skills I. 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 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 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
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.
Coerequisite(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 competencies 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

SD1680 - Ethics In Health Care
This is an introductory course in health care ethics and workplace issues. Through course content, lectures, selected readings and student discussion, ethical theories will be examined and applied to current issues that arise in health care.

SD1700 - Workplace Skills
This course involves participating in meetings, information on formal meetings, unions, workers compensation, employment insurance regulations, workers rights and human rights. Upon completion of this course, students will be able to participate in meetings, define and discuss basic concepts of unions, workers compensation, employment insurance, workers rights, human rights, workplace diversity and gender sensitivity.

SD1710 - Job Search Techniques
This course is designed to give students an introduction to the critical elements of effective job search techniques. Upon completion of this course, students will be able to demonstrate effective use of Job Search Techniques.

SD1720 - Entrepreneurial Awareness
This fifteen-hour seminar is designed to introduce the student to the field of entrepreneurship, including the characteristics of the entrepreneur, the pros and cons of self-employment, and some of the steps involved in starting your own business.

SD1740 - College and Career Preparation
This course will allow the student to obtain basic college information, an information technology industry overview, a self and career assessment process, and an introduction to ethics and best practices in the Information Technology field. The main focus of this course is the development of a career portfolio that the student will continue to 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.

SD1760 - Workplace Essentials
This course provides the learner with the essential skills required for the workplace. Upon completion of the course the learner should be able to demonstrate knowledge of meetings, unions, workers compensation, workers rights and human rights, customer service and effective job search techniques.

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 pertinent to students entering the workplace.

Prerequisite(s): OF1100, OF1101, OF2100

SD2100 - Service Learning
This course is an introduction to service learning. It explains the purpose and structure of the service learning approach to education. It also presents an overview of health and safety as it relates to building construction sites. Learners will learn about the key components needed in the delivery of formalized service learning, and proper health and safety practices while working on community projects.

SD2220 - Introduction to the Workplace
This course is designed to introduce the student to the workplace as a junior professional and provide them with an awareness of what is expected of them in this environment. Emphasis will be on developing the practical skills, which are necessary to effectively function in a technical environment, through hands-on exercises that simulate real workplace experiences.

Prerequisite(s): Eligibility for work term placement.

SD2340 - Student, Career and Portfolio Development III
This course further explores the concepts of student skills development, career and education plans, and the student portfolio that were introduced and developed in SD1340 and SD1341. The student will explore self awareness and skill development; job search skills; employment processes; office politics; and work term reports. The student will continue to develop and refine his/her student portfolio and career and education plans.

Prerequisite(s): SD1341

SD2350 - Student, Career and Portfolio Development IV
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

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

SD2361 - Student, Career and Portfolio Development IV
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

SD2370 - Student, Career and Portfolio Development III
This course further explores the concepts of student skills development, career and education plans, and the student portfolio that were introduced 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
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.

SE1050 - 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.

SE1320 - Industrial Safety
This course will introduce the learner to the interpretation and application of workplace occupational health and safety legislation, as related to an industrial setting. The learner will be provided with practical knowledge in the safe operation, storage, and handling of various materials and equipment used in a typical industrial plant.

SE1400 - Auditing OHS&E Management Systems
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 learners with a working knowledge of audits as a tool to ensure that organizations’ practices/procedures/policies are aligned with corporate standards and in compliance with legislative requirements. The course will focus on audit preparation, conducting and reporting on the audit, and post-audit activities.

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 Workers 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.

SE2120 - 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.

SE2140 - Safety and Maintenance of Field Equipment
This (hands-on) module 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 and 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 - Ohs Program Elements
This course will introduce the learner to the key elements of an occupational health and safety program. The role of a Behaviour-Based Safety Approach in the establishment of a strong safety culture will also be addressed.

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

SI1010 - Science I
This course in introductory conceptual science presents knowledge about the nature of science concepts to prepare learners for success in the field of trades. It provides knowledge of science related to on-the-job skills and practices, and uses shop problems to help learners relate science to employment situations. Upon completion of the course, learners will be able to apply science concepts to trade practices. Topics covered include scientific method, motion, forces and friction, simple machines, and electricity.

SI1011 - Science II
This course is the second of two introductory courses in conceptual science. It presents knowledge about the nature of science concepts to prepare learners for success in the field of trades. It provides knowledge of science related to on-the-job skills and practices, and uses shop problems to help learners relate science to employment situations. Upon completion of the course, learners will be able to apply science concepts to trade practices. Topics covered include scientific method, motion, forces and friction, simple machines, and electricity.

SN1100 - Introduction to Sound
This is an introductory course in 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 Co-requisite(s): SN2200

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 to 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.
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.

SP1320 - Radiation Safety
This course will have the learner explore the health and safety concerns related to working with industrial radiography radiography sources. The primary intent of the course is to introduce the learner to safe handling, standard operating principles and procedures and emergency operation principles and procedures for industrial radiography exposure devices. Through the principle of ALARA (As Low As Reasonable Achievable) and the concepts of Time Distance and Shielding this course will prepare the learner for calculating and verifying working radiation dose rates, accumulated dosages, safe distances, and shielding requirements. The relevant sections of the Canadian Nuclear Safety Act and Regulations will be explained in detail. Successful completion of this course will provide the learner the opportunity to further pursue the CEDO Certified Exposure Device Operators designation through the NDT (Non-Destructive Testing) Certifying Agency of CANMET Materials Technology Laboratory, Natural Resources Canada in accordance with the Canadian Nuclear Safety Commission Regulatory Guide G229.

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, predictive 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.

SP1450 - Quality Management Systems
This course introduces the learner to the concepts and systems of Quality Assurance. The context of the course will be centered around the elements of quality assurance as it impacts the welding industry. It emphasizes the elements and it demonstrates the practices and procedures that companies employ to meet the requirements of a Quality Management System.

SP1700 - Computer Numerical Control (CNC) Machining I
The course is designed to be an introductory course in Computer Numerical Control (CNC). Most of the course will be instructed through hands-on work with both a CNC Lathe and CNC Milling Machine. Lecture will accompany the labs for theory.

Prerequisite(s): SP1200

SP1730 - CNC Machining I
This is an introductory course in Computer Numerical Control (CNC). Programming concepts learned through the lecture time will be applied using both a CNC Lathe and CNC Milling Machine.

Prerequisite(s): SP1200

SP1731 - CNC Machining II
This is a course in Computer Numerical Control (CNC) using Computer Applied Manufacturing (CAM) software. It is delivered using computers to produce CAD/CAM programs that are applied through shop floor 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

SP2110 - Ndt-Mt & Rt
This course is intended to introduce the learner to the theory and practice of the Non-Destructive Testing (NDT) disciplines of Magnetic Particle Inspection (MT) and Radiographic Inspection (RT).

Prerequisite(s): PH1100; WD1440

SP2120 - Ndt-Pt & Ut
This course is intended to introduce the learner to the theory and practice of the Non-Destructive Testing (NDT) disciplines of Liquid Penetant Inspection (PT) and Ultrasonic Inspection (UT).

Prerequisite(s): CF1100

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 students 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 testing on weldments. An introductory course in Quality Control and Non-Destructive Testing methods. The topics include introduction to Quality Control, Metrology, CSA standards Z299.1-85, Visual, LPI and MPI testing.

Prerequisite(s): WD1100, PH1100

SP2311 - Quality Control and Inspection II
This course requires that the student develop an understanding of the theory and concepts behind both ultrasonics and liquid penetrant evaluation, it then provides practical applications of these and requires that the student use typical industrial codes and standards to evaluate results.

Prerequisite(s): CF1100, SP2310

SP2330 - Quality Assurance / Quality Control
This course is designed to give students an understanding of the concepts and requirements of QA/QC such as, interpreting standards, controlling the acceptability 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 related to the trade; develop an awareness of quality principles and processes; apply quality assurance/quality control procedures in a shop project.

SP2350 - Quality Assurance & Control
This course is designed to provide knowledge and skills prerequisite to the development, implementation, maintenance and evaluation of Quality Assurance and Quality Control Systems.

SP2360 - Quality Control and Reliability
This course builds on the theory and practice covered in the previous quality assurance, metrology and quality control courses. It focuses on application of geometrical dimensioning and tolerances, precision measurement using a co-ordinate measuring machine and reliability.

Prerequisite(s): SP1830; MA1670

SP2410 - Safety Engineering Technology
This course will provide the student with an overview of the fundamentals of occupational health and safety in the oil and gas drilling and production environment.

SP2450 - OHS Management Systems
This course will introduce the student to the interpretation and application of workplace occupational health and safety (OHS) legislation and provide the student with an understanding of due diligence. The course is designed to enable the student to utilize industry-recognized standards and methodologies to assess risk, determine its magnitude, and develop plans to minimize and control it. Case studies from manufacturing or other industrial settings may be used to demonstrate the necessity for proactive safety systems.

SP2510 - Plant and Facility Layout
The course examines the contribution that an appropriately 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): EG1430

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 the 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 I. 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 potters 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 students knowledge of printmaking materials and techniques. Specific print techniques include line and tonal etching processes, basic colour printing, etching 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 mixed 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 embroidery and 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

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): TX2600, 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, 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: measurement of angle, direction and distance with appropriate instruction in the corresponding
This course introduces a surveying software package.

Prerequisite(s): MA1101

SU1210 - Construction Surveying
This is the second course in surveying for learners in the Civil Technology program. Its purpose is to strengthen the surveying skills of learners, to teach them new skills in surveying that are directly related to the construction of buildings, roads and municipal services.

Prerequisite(s): SU1200

SU1320 - Plane Surveying I
This is an introductory course in surveying presented to Geomatics Engineering Technology (Co-op) program. The topics to be covered are: introduction to the theory of surveying on a plane, the acquisition of linear distances, horizontal angle, vertical angles, the calculation of coordinates and areas, the determination of elevations using spirit leveling, profiles and cross-sections, the graphical presentation of acquired data. The student will use tapes, total stations and spirit levels to acquire the required data.

Prerequisite(s): SU1320, SU1500

SU1360 - Graphics for Geomatics Engineering Technology
This course introduces a surveying software package. The course utilizes and expands on theory and practice from previous cartography, CAD, and plane surveying courses applying this knowledge to a surveying graphics package. Topics covered include applied drafting skills, traverse computations, software adjustments, earthwork volume determination, road design, area calculations, and subdivision design.

Prerequisite(s): SU1320, SU1500

Co-requisite(s): SU1321

SU1441 - Geographic Information Systems (GIS) II
This course in GIS focuses on the design and use of the raster data structure. Topics included are characteristics of raster data, data collection and processing systems, and GIS software operations on raster data. Spatial analysis will be taught with a focus on single and multiple layer operations, point pattern, network, and surface analyses. The topic of spatial statistics will be introduced. Raster GIS applications will be addressed.

Prerequisite(s): SU1440

SU1500 - Cartography
This course is an introductory course offered to Geomatics Engineering Technology students. The course is divided into two modules. Module one covers topics in cartography while module two expands on the CAD skills acquired by the student in Engineering Graphics EG1110.

Prerequisite(s): MA1101, PH1100, EG1110

SU1540 - Hydrography I
This course is an introductory course in hydrographic principles and procedures. It is designed to emphasize the theoretical and practical applications of hydrography and the marine survey environment.

Prerequisite(s): SU1321

SU1541 - Hydrography II
This course is an advanced course in hydrographic principles and procedures. It is a continuation of SU1540 (Hydrography I) with emphasis on advanced hydrographic systems and their use in marine engineering projects.

Prerequisite(s): SU1540, SU2570

SU1550 - Remote Sensing
This course is designed to introduce the basic principles and skills associated with remote sensing. Orthophotography interpretation and GPS technology are addressed through lectures and practical applications. Students are exposed to satellite imagery, processes and products.

Prerequisite(s): SU1150

SU1570 - Remote Sensing
This course introduces the student to the principles of remote sensing. The concept of acquiring data outside our visual range and the use of that data to identify and classify objects and phenomena is investigated. The basic data recording systems in common use are addressed.

Prerequisite(s): SU2500, SU2570, SU1441

SU1710 - Forest Surveying
This 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, photos, and GPS. Students will also be introduced to viewing and manipulating digital data through desktop mapping.

SU2220 - 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 collected data to the desired datum is introduced. The use of code and carrier based GPS receivers is also introduced.

Prerequisite(s): MA2100, SU1321, PH1101

SU2500 - Photogrammetry
This course is an introduction to photogrammetry for the Geomatics Engineering Technology (Co-op) program. The course introduces the student to the use of aerial photography for the production of maps. The principals of photogrammetry are addressed and the use of stereoplotters for map compilation is explored. The sources of aerial photography acquisition are identified. The aerotriangulation process for the photo to ground geometry is investigated. The use of aerial photography for the production of rudimentary maps is also addressed.

Prerequisite(s): SU1320, SU1500

SU2530 - Cadastral Surveying I
This is an intermediate level course designed to familiarize the student with legal principles and applicable legislation in the area of Cadastral Surveying. The student will also make practical application of this knowledge.

Prerequisite(s): SU1321

SU2531 - Cadastral Surveying II
This is Cadastral Surveying II with emphasis on the field and office practices of Land Surveyors. It includes the study of real property law and law related to matters of Land Surveying in Canadian jurisdictions.

Prerequisite(s): SU2530

SU2570 - GPS and Remote Referencing
This course introduces the student to the Global Positioning System (GPS) as a precise measuring tool. The satellite systems, operational control and user applications of the GPS system are investigated. The GPS signal structure, broadcast information and the parameters of the navigation message are examined. Referencing systems pertinent to space positioning are defined and coordinate computations performed. The procedural tasks associated with various GPS modes of operation are practiced through completion of specified survey projects. Quality assurance and data analysis is performed to investigate the accuracy of the various GPS methods such as Static, RTK and Post processed solutions. Determination of position by use of the classical astronomical means is also addressed. Alternate satellite systems, Glonass and Galileo are presented.

Prerequisite(s): SU2320

Co-requisite(s): MA1310

SU3210 - Geographic Information Systems (Gis)
This course is designed to provide students with an overview of Geographic Information Systems (GIS) technology and an in depth appreciation of the role of GIS technology in natural resources applications. Students will gain valuable skills and hands-on experience to support resource-based GIS projects typical in the workforce. Using vector-based GIS data models, students will create databases, manage spatial and attribute data, generate map-based and tabular outputs, and perform geographic analysis. The course culminates with a major GIS project designed to reinforce the skills covered in the course.

Prerequisite(s): MA3130

SU3300 - Geodesy & Map Projections
This third year course offered in Geomatics Engineering Technology (Co-op) expands on map projections and develops the higher order corrections to positioning problems. The course introduces geodesy and geodetic concepts to equip students for modeling...
Prerequisite(s): SU2570, MA3130

**SU3500 - Adjustments**
This course further explores the use of the least squares technique for the adjustment of survey observations. The parametric model is explored with an introduction to the combined model. The statistical analysis of derived parameters is used for quality assurance.  
Prerequisite(s): MA3130, SU2570, SU3540

**TA1140 - Orientation to Rehabilitation**
The purpose of this course is to introduce the student to the field of rehabilitation, the role of the Rehabilitation Assistant, professional organizations and areas of specialization. The course is followed by a one-week clinical placement.

**TA1230 - Human Movement And Kinesiology**
This course will enable students to describe the human body in motion and to demonstrate safe body mechanics. This will be based on theoretical and practical study of human movement and kinesiology and how it applies to persons with atypical movement patterns. The course will include a lab component and a practical skills exam. A two-week clinical placement will immediately follow successful completion of this course.  
Prerequisite(s): BL1350, TA1140, TA1610

**TA1510 - Introduction to Gerontology**
This course defines aging and the Canadian population according to current and forecast age distributions. Implications on the dependency, economic and social status of the elderly are analyzed. Health status and influencing factors are examined with a concurrent review of health care and housing systems available in urban and rural communities.

**TA1600 - Introduction To Clinical Skills**
This course will enable students to effectively handle and move patients using safe body mechanics. The course will include a lab component and a practical skills exam.

**TA1610 - Clinical Orientation Placement**
The purpose of this course is to introduce the student to the clinical setting and develop their observation and professionalism skills.  
Prerequisite(s): None  
Co-requisite(s): TA1140

**TA1611 - Advanced Clinical Skills**
This course is a continuation of TA1600 - Introduction To Clinical Skills. The student will learn the theory behind and practice in the lab setting, advanced handling and positioning skills and therapeutic interventions. Students will utilize appropriate equipment and techniques to enhance client participation in therapeutic procedures. The student will practice these skills in the lab and complete a practice skills exam.

**TA1700 - Clinical Placement I**
The student will demonstrate in the clinical setting advanced handling and positioning skills and therapeutic interventions. Students will utilize appropriate equipment and techniques to enhance client participation in therapeutic procedures. The clinical placement setting will be determined by the clinical instructor and will be supervised by an Occupational Therapist or Physiotherapist and/or Occupational Therapist Assistant or Physiotherapist Assistant.  
Prerequisite(s): TA1611, TA1600, TA1610, TA1230

**TA2130 - Disease, Injury and Intervention I**
Students will be introduced to a selection of diseases and injuries based on broad diagnostic categories, including developmental, physical and psychosocial conditions in pediatric, adult and geriatric populations. Emphasis will be placed on the impact that these conditions present to the individual and the rehabilitation management of these conditions.  
Prerequisite(s): BL1350

**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): BL1350

**TA2220 - Communication Disorders in Rehabilitation**
The purpose of this course is to review communication problems associated with neurological and sensori-motor 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): BL1350

**TA2520 - 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 - Heat Transfer**
This course deals with underlying theories and applications of heat transfer. These principles are then related to the unit processes in an industrial environment. The course covers heat transfer principles and applications including heat exchangers, combustion and energy conversions.  
Prerequisite(s): MA1101, TD2100
TG1110 - Orientation to Safety
This is an introductory course in basic safety practices that are common to carpentry, electrical, plumbing and welding. The course introduces learners to hand tools that are widely used in industry. The learner will be able to develop safety practices in the selection, use and care of hand tools.

TG1120 - Multi-Trade Hand Tools
This is an introductory course in hand tools that are common to carpentry, electrical, plumbing and welding. This course introduces learners to hand tools that are widely used in industry. The learner will be able to develop safety practices in the selection, use and care of hand tools.

TG1130 - Multi-Trade Power Tools
This is an introductory course in power tools that are common to carpentry, electrical, plumbing and welding. This course introduces learners to power tools that are widely used in industry. The learner will be able to select, operate and develop safe practices in the use of power tools.

TG1140 - Introduction to Rigging
This is an introductory course in rigging. Learners will be able to identify and use ropes, hoists, chains and overhead cranes to move equipment as per CSA regulations.

TG1150 - Scaffolds and Ladders
This course introduces the student to techniques to safely erect and use ladders and scaffolds as per all industrial safety regulations and codes. The student will be able to safely erect scaffolds and ladders.

TG1200 - Introduction to Carpentry
This introductory course illustrates to the learner fundamental carpentry practices used in a residential setting. Carpentry safety awareness will be stressed throughout this course as learners are exposed to basic carpentry techniques. The learner will be able to identify the materials and tools used in basic carpentry projects and learn how to interact with a certified carpentry professional.

Prerequisite(s): TG1110

TG1220 - Floor and Wall Framing Basics
This introductory course illustrates to the learner fundamental framing techniques used in floor and wall construction. The learner will be able to identify the materials and tools used in a basic floor and wall framing project and will participate in a basic project.

Prerequisite(s): TG1200

TG1250 - Residential Wiring Basics
This course will introduce learners to fundamental wiring practices used in a residence or apartment complex. Electrical safety awareness will be stressed throughout this course as learners are exposed to the fundamentals of wiring basic components used in residential systems. The learner will be able to identify the materials and tools used in basic electrical projects and learn how to interact with a certified electrical professional.

Prerequisite(s): TG1110

TG1270 - Copper and Plastic Piping
This introductory course illustrates to the learner safety information and installation techniques used to install copper and plastic piping in a residential setting. The learner will be able to identify the materials and tools used in a basic piping project and will demonstrate basic building techniques in this area of study.

Prerequisite(s): TG1110

TG1280 - Introduction to Welding
This introductory course illustrates to the learner fundamental welding practices. Welding safety awareness will be stressed throughout this course as learners are exposed to basic shielded metal arc welding techniques. The learner will be able to identify the materials and tools used in a basic welding project and learn how to interact with a certified welding professional.

Prerequisite(s): TG1110

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.

Prerequisite(s): PT1380

TM1110 - 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.

Prerequisite(s): PT1380

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 for anatomy, physiology and pathology of specified body systems in a manner that maximizes learning opportunities.

Prerequisite(s): TM1100

TM2100 - Medical Terminology II
This course is a continuation of TM1100 with emphasis on building and interpreting terminology related to the anatomy, physiology, and pathology of the human body.

Prerequisite(s): TM1100

TP1130 - Food Safety & Sanitation
This course will enable the learner to apply safe food handling procedures, personal hygiene and sanitation methods used in a Retail Meat Cutter work environment. The learner will be introduced to biological, chemical and physical hazards present in a plant or retail environment and discuss methods to eliminate all hazards that may be present.

Prerequisite(s): TM1100

TP1140 - Hand & Power Tools
Learners will identify, describe and use various hand and power tools required in a plant or retail work setting. Safe use of these tools is stressed throughout this course along with maintenance procedures and sanitation requirements to ensure a healthy and safe environment for working with meat, fish and poultry products.

TP1150 - Meat Science & Nomenclature
Learners will study the composition of meat and meat muscle with emphasis on what affects meat for market conditions and what effects processing can have on a final product. Nomenclature will be discussed and used throughout this course to enable the learner to identify and use proper names and terminology associated with the industry.

TP1160 - Meat Processing & Cutting
Learners will describe and practice how to receive products and properly store and rotate product in a refrigerated environment. Learners will then learn to identify, cut and process block ready beef and pork, poultry, lamb and veal. Emphasis will be on accuracy of cuts at the onset of practical training but will be graded on production as well as accuracy as the learner gains experience. The importance of yield and efficiency will be introduced to learners.

TP1170 - Seafood Fabrication
This course will introduce seafood products to the learner who must be able to identify, cut and process seafood such as cod, salmon, halibut, herring and mackerel. Trim and yield will be emphasised to the learner.

TP1180 - Value Added Products
This course will introduce the learner to value added products such as sausage and smoke enhanced meats to enhance a retail outlets product line. Learners will participate in the preparation and processing of selected value added products to enhance their practical skills.

TP1190 - Nutrition & Cooking
The learner will describe calorie makers, protein, carbohydrates and fats associated with products used in the retail meat cutting industry. The learner will also describe and use cooking methods to enhance retail product to be offered for retail sale. Product knowledge is greatly emphasised here to ensure learners have the knowledge necessary to deal with consumer inquiries.

Prerequisite(s): TP1180

TP1200 - Merchandising & Packaging
The learner will develop skills to understand market conditions for beef, pork, lamb, poultry and fish while maximizing yield from product. The learner will develop skills to enhance retail displays by incorporating value added products and specialty items to ensure sales are maximized. The course will also entail portion control, nutritional values of product, steps and cycles associated with marketing products and factors that affect pricing. The importance of attractive product packaged in the correct way will be explained. Salesmanship and customer relations will be emphasized throughout.

TR1600 - Newfoundland & Labrador Tourism Destinations
This course explores Newfoundland and Labrador destinations through the themes of culture/folklore, history, cultural sport events, physical attractions, festivals and special events. Students will discover that special charm that is Newfoundland and Labrador.

TR1610 - Introduction to Tourism & Hospitality
This course is an introductory course designed to give students an overall view of the tourism industry.
Students will explore the theories of travel motivation before moving into the five sectors of tourism, issues and challenges facing tourism will also be covered.

TR1660 - Newfoundland And Labrador Interpretation
This course delivers an introduction into the rich cultural, historical and archaeological history of the province of Newfoundland and Labrador. It also focuses on the geological highlights for which the province is world-renowned, the uniqueness and diversity of the flora and fauna, and the impact that whales, seabirds & icebergs have had on the province.

TR1720 - Local Tour Guiding
This course focuses on the role and responsibilities of the tour guide. A local tour guide is an individual in a front line position who leads, accompanies or transports passengers, individuals or groups on tours, ensures itineraries are met, provides commentary about points of interest and creates positive experiences for passengers. This course has been designed to include the merit National Occupational Standards for tour guides as established by the Canadian Tourism Human Resource Council.

TS1200 - Introduction to Sewing
This course will introduce students to basic sewing skills. Students will be introduced to semi-industrial and three/four overlook 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 overlook and chain switch sewing machines. Specific sewing techniques utilizing industrial sewing equipment will be covered. Students will develop speed and accuracy using industrial equipment and produce samples according to industry standards.

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.

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.

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.

TX1500 - Knit and Weave I
This course introduces students to basic knit and weave techniques. Topics in knit include shaping, texture, color 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.

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 embryo/fetal growth and development from fertilization to parturition. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal/abnormal sonostructural appearances.

UL4230 - Gynecology
This course is designed to enable students to acquire a comprehensive knowledge of female pelvic anatomy and physiology. The didactic phase of the program will include instruction in pelvic musculature, perineal compartments, reproductive organs and vascularism. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal/abnormal sonostructural appearances.

UL4310 - Basic Scanning I
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 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.

UL4430 - Clinical Training
This phase of the program is designed to enable students to acquire a comprehensive knowledge of pelvic ultrasound. The didactic phase of the program will include instruction in abdominopelvic organs and vascularism. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal/abnormal sonostructural appearances.

UL4443 - Abdomen Pathology
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 vascularism. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal/abnormal sonostructural appearances.

UL4444 - Abdomen Pathology
This course is designed to enable the student 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 sonostructural appearances.

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 sonostructural appearances.

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.
This is an introductory course in design principles. The use of various materials, compositions, and drawing techniques in consultation with the instructor.

VA1201 - Life Drawing

Students will develop drawing abilities and powers of observation using live models and the time honored practice of drawing from life.

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.

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.

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 an individual working method in design that allows the student to design in practical applications.

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.

VA2280 - Package Design

Students will be introduced to the theory and practice of package design. Students will also be exposed to a variety of packaging concepts and options, and will apply their knowledge to the development of several packaging projects that will incorporate their own ideas. Students will develop packaging solutions that meet clients needs using industry standard software.

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.

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 the development of the drawing. Particular individual attention is paid to drawing problem areas to ensure that the student develops strong drawing skills.

VA1130 - Drawing Fundamentals

Students will learn the rudiments of drawing as a means of communicating objective ideas. Students will study fundamental drawing techniques with a view of developing accurate visual illustration skills required in design, and other collaborative problem solving disciplines.

VA1150 - Animation Drawing I

This course builds upon the skills acquired in VA1100 by providing the student with a structured series of studio experiences which develop competencies in sketching the human form and objects. The focus is upon capturing the human form at rest and throughout a range of motion. Animation storyboarding will be introduced through a simple comic book project.

VA1160 - Animation Drawing II

Students will explore the fundamental principles of cel animation using hand drawn sequential images and timing charts.

VA1161 - Animation Drawing III

Students will build upon the skills acquired in VA1160 Animation Drawing I and VA1130 Drawing Fundamentals. Through a series of exercises and applying advance principles of animation, students will learn to apply hand drawn sequential images and timing.

VA1200 - Elements of Design

This is an introductory course in design elements. Students will be provided with an understanding of the 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.
VA3550 - Screening & Peer Critique
Students will engage in weekly peer review sessions during which all students will demonstrate the projects that they are working on. The intent is to enable each student to have projects critiqued by peers and the instructor for the program, while availing of the opportunity to learn from the creative applications of those same peers.

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/replaceing 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

WA1160 - Fluid Mechanics
This course is included in the Civil Engineering Technology program as an engineering science to provide the learner with a knowledge of the principles of fluid mechanics and knowledge to solve practical applied problems.
Prerequisite(s): MA1101, PH1101

WA1200 - Hydrology
This course is designed to serve as an introductory course, one that includes the major concepts and principles of hydrology.

WA1230 - Hydrology
This course is designed to introduce the learner to some of the major concepts of surface hydrology.

Co-requisite(s): MA1530

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 being a grade point average of at least 2.00 is mandatory for work term eligibility. This work term follows the successful completion of semester 2. For most students, it represents their first professional work experience in a business environment and, as such, represents their first opportunity to evaluate their choice of pursuing a career in information technology. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth. The students are learning from the new network of contacts and widening their perception of life and career choices.
Prerequisite(s): Successful completion of all courses in academic terms one and two with a minimum Grade Point Average of 2.00.

WC1200 - Work Term I
For most learners, this work term represents their first experience in an Electrical engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 6 in the Electrical Engineering Technology (Power and Controls) (Co-op) program. Learners are expected to learn, develop and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 10/11 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1201 - Work Term II
The second work term provides learners possessing significant knowledge from the Electrical Engineering Technology (Power and Controls) (Co-op) program with the opportunity to contribute to an employers operation. This work term follows the successful completion of Semester 8. Learners are expected to further develop and expand their knowledge and work-related skills, and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their personal interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work term report of at least 35 hours, remunerated (paid) and evaluated.
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/or development of a viable safety program. It follows the successful completion of academic semester one.

WC1300 - Work Term I
For most learners, this work term represents their first experience in a Geomatics/Surveying environment and, therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Geomatics/Surveying Engineering Technology (Co-op) Program. Learners are expected to learn, develop and demonstrate the high standards of behavior and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1301 - Work Term II
The second work term provides learners possessing significant knowledge from the Geomatics/Surveying Engineering Technology (Co-op) program with the opportunity to contribute to an employer's operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1400 - Work Term I
For most learners, this work term represents their first experience in an industrial engineering environment and, therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 4 in the Industrial Engineering Technology (Co-op) program. Learners are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1401 - Work Term II
The second work term provides learners possessing significant knowledge from the Industrial Engineering Technology (Co-op) program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 5. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. The work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1460 - Work Term
For most learners, this work term represents their first experience in a civil engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Civil Engineering Technology (Co-op) Program. Learners are expected to learn, develop and demonstrate the high standards of behavior and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report within four weeks of returning to class. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar

WC1520 - Co-operative Work Term I
This work term follows the successful completion of Semester 5 in the Environmental Technology program. For most students, it represents their first professional work experience in a service/production environment and, as such, represents their first
opportunity to evaluate their choice of pursuing a career in the Environmental Technology field. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. A substantive work report is also to be prepared by the student demonstrating competence in both technical content and communication skills.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC1521 - Co-operative Work Term II**
This work term follows the successful completion of Semester 7 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 the workplace. Students are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously access the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the student demonstrating 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 learners, this work term represents their first experience in computing systems engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Computing Systems Engineering Technology (Co-op) Program. Learners are expected to learn, develop, and demonstrate the high standards of behavior and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC1701 - Work Term II**
The second work term provides learners possessing significant knowledge from the Software Engineering Technology (Co-op) or Computing Systems Engineering Technology (Co-op) programs with the opportunity to contribute to an employers operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC1800 - Work Term I**
For most learners, this work term represents their first experience in a mechanical engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Mechanical Engineering Technology (Manufacturing) (Co-op) program. Learners are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC1801 - Work Term II**
The second work term provides learners possessing significant knowledge from the Mechanical Engineering Technology (Manufacturing) (Co-op) program with the opportunity to contribute to an employer’s operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand the knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate and ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC1900 - Work Term I**
For most learners, this work term represents their first experience in a mechanical engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of Semester 5 in the Chemical Process Engineering Technology (Co-op) program with the opportunity to contribute to an employers operation. This work term follows the successful completion of Semester 8. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC2000 - Work Term III**
This work term follows the successful completion of academic semester 8. Learners should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. Learners should have strong technical ability, good business judgment and superior people skills to improve safety, quality, and productivity in both the production and service sectors.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC3150 - Work Term II**
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 be better acquainted with his/her discipline of study, should observe and appreciate the attitudes, responsibilities, and ethics normally expected of information technology professionals and should exercise greater independence and responsibility in his/her assigned work 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 their employability and technical skills, further enhancing their personal growth.

**Prerequisite(s):** Successful completion of all courses in academic terms one and two and WC1050 Work Term I with a Grade Point Average of at least 2.00. In the event a student has not obtained a work term before semester four results are released, the student has to be in clear standing from semester four.

**WC2400 - Work Term III**
This work term follows the successful completion of academic semester 8. Learners should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. Learners should have strong technical ability, good business judgment and superior people skills to improve safety, quality, and productivity in both the production and service sectors.

**Prerequisite(s):** Eligibility according to Co-op regulations in current college calendar.

**WC3150 - Work Term III**
This is the final work term. Students should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. The student should be better acquainted with his/her discipline of study, should observe and appreciate the attitudes, responsibilities, and ethics normally expected of information technology professionals and should exercise greater independence and responsibility in his/her assigned work 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 their employability and technical skills, further enhancing their personal growth.

**Prerequisite(s):** Eligibility for this work term is based on successful completion of all courses in semesters 1, 2 and 4, and WC1150 Work Term I and WC1250 Work Term II with a Grade Point Average of at least 2.00. In the event a student has not obtained a work term before

**WD1100 - Welding Technology and Processes I**
This introductory course deals with welding technology and processes as applied to the metal fabricating industry. Safety practices are emphasized in all
aspects of welding applications in the shop. Applications include welding preparations, welding basic joints, and cutting processes, safety and health in the welding industry; basic welding technology; preventive maintenance of welding equipment.

WD1101 - Welding Technology & Processes II
This course is a continuation of Welding Technology and Processes I (WD1100). It covers fusion welding of steel structures under CSA STANDARD 47.1. In conjunction with this standard, using the SMAW process and its applications, the course deals with welding power supplies, electrodes, welding procedures, and testing. Prerequisite(s): WD1100

WD1120 - Shielded Metal Arc Welding Fundamentals
This SMAW course requires the use of safety equipment, SMAW equipment and accessories, and materials and supplies. It involves setting up equipment, preparing and welding metal, shutting down equipment and testing the weld. It includes information on basic electricity, types of electrodes, types of welding machines, joint design and weld faults. Prerequisite(s): PP1160

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.

WD1440 - Smaw Fundamentals
This introductory course deals with welding technology and processes as applied to the metal fabricating industry using Shielded Metal Arc Welding (SMAW) processes. 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.

WD1450 - Smaw Processes
This course is a continuation of Smaw Fundamentals (WD1440) and deals with the fundamentals of welding processes as they relate to Shielded Metal Arc Welding (SMAW) welding, gouging, and cutting. It also introduces the learner to the fundamentals of causes of welding faults, the repair procedures associated with these faults and mechanisms to improve the strength of welds after the welding process has taken place. Prerequisite(s): WD1440 - Smaw Fundamentals

WD2100 - Welding Gmaw/Fcaw
This course is a continuation of Welding Technology and Processes II (WD1101). The emphasis is to familiarize the student with common semi and fully automatic processes, their control, limitations, and applications. Processes include Gmaw, Fcaw, Saw, Egw and Esaw Welding. The student will be required to apply knowledge and experience to a variety of industrial problems. (i.e. actual and simulated). Shielded Metal Arc Processes; Welding procedures, and CSA Standard W47.1. Prerequisite(s): WD1101

WD2101 - Welding Technology And Processes IV
This course is designed to familiarize the student with the theory and practice of Gas Tungsten Arch Welding (GTAW). The GTAW course includes the selection and set-up of equipment and accessories and their application to aluminum, steel and stainless steel in all positions. Prerequisite(s): WD2100

WD2200 - Welding Codes
This course introduces the student to welding codes, standards and specifications related to the fabrication and inspection of pressure vessels, tanks, structures, and structural steels. Applicable codes such as ASME, Section V111-1, and Section IX and CSA Standards W47.1, W59, W178.1, and W178.2 are discussed in detail. Other similar codes, standards, and specifications such as ABS, Lloyds, AWS, and DNV will also be discussed and compared with ASME and CSA. Prerequisite(s): WD1100, EG1100, CF1100

WD2300 - Welding Failure Analysis
In properly performing a failure analysis, the learner will keep an open mind while examining and analyzing the evidence to foster a clear, unbiased perspective of the failure. Analyzing failures is a critical process in determining the physical root causes of problems. The process is complex, draws upon many different technical disciplines, and uses a variety of observation, inspection, and laboratory techniques. Prerequisite(s): CF1101, CF2560

WD2400 - Welding Metallurgy
Welding difficulties and defects, metallurgical problems encountered in welding low, medium, and high carbon steels and alloy steels; including stainless and high-chromium steels, austenitic manganese steel and tool and die steels. Prerequisite(s): CF1100, CF1101

WD2450 - Welding Metallurgy
This course explores some of the procedural and metallurgical concerns and microstructures that may affect the weldability and integrity of welded connections in carbon manganese steels, low alloy steels, stainless steels, cast iron and nonferrous metals. Prerequisite(s): CF1101

WD2620 - Wire Feed Arc Welding
This course introduces the learner to the more common industrial semi automatic arc welding processes, the process controls, limitations, and typical industrial applications. Welding processes include Gmaw, Fcaw, Saw, Egw and Esaw. The learner will be required to demonstrate knowledge of and proficiency with the most common of the welding processes noted.

WD2650 - Gtaw Processes
This course is designed to introduce the learner with the theory and practice of Gas Tungsten Arch Welding (GTAW). The GTAW course includes the selection and set-up of equipment and accessories and their application to aluminum, steel and stainless steel. Processes covered include manual and automated processes. Prerequisite(s): WD1450

WD2680 - Welding Standards & Codes
This course introduces the learner to welding standards and codes related to the fabrication and inspection of pressure vessels, tanks, structures, and structural steels. Applicable codes such as ASME, Section VIII-1, and Section IX and CSA Standards W47.1, W59, W178.1, and W178.2 are discussed in detail. Other similar codes and standards such as ABS, Lloyds, AWS, and DNV will also be discussed and compared with ASME and CSA. Prerequisite(s): WD1450, EG1310

WD3110 - Cost Analysis
This course is designed to provide the student with the knowledge to interpret structural, shop and pipe and pressure vessel drawings. The emphasis is to familiarize the student with the knowledge to calculate the cost of fabricating different structural components, by interpreting all elements of industrial drawings and submitting a bid as a major assignment. Arc Welding Processes, Weld Quality Control and Inspection, Welding Procedures and Welding Codes. Prerequisite(s): WD1100, WD1101, WD2100, WD2101, WD2200, SP2310, SP2311

WD3120 - Cost Analysis Project
The purpose of this course is to introduce the learner to the concepts involved in the design, costing and management of a welded assembly. Through completing the course, the learner will understand the principles of welding processes, their control, limitations, and typical industrial applications. Learners will be required to demonstrate knowledge of and proficiency with the most common of the welding processes noted.
WT1400 - Work Term
For most learners, this work term represents their first experience in a petroleum engineering environment and therefore presents them with their first opportunity to evaluate their career choice. The work term follows the successful completion of Semester 5 in the Petroleum Engineering Technology (Co-op). Learners are expected to learn, develop and demonstrate the high standards of behavior and performance normally expected in the work environment. Learners will be evaluated by their employer and submit a work term report to the Co-op Office. This work term must be program relevant, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op regulations in current College Calendar

WT1460 - Work Placement
A minimum seven-week placement is a required portion of the program. The Work Placement Study Program provides students with the opportunity to gain practical experience in the working environment of a power plant and with the life and work of a Power Engineer. Employers are provided the opportunity to train and assess students for possible future employment. The program builds on the range of tasks laid down in the Occupational Analysis of Power Engineers and familiarizes the student with all the machinery and systems that Power Engineers are required to maintain and operate. The course is mainly concerned with safety, operation and maintenance of plant and equipment. The plant in which the Engineer is serving acts as a real-life teaching aid, augments knowledge already acquired and assists students with studies leading to a Certificate of Competency, Third Class.

Prerequisite(s): Successful completion of all courses in the first five semesters and a minimum cumulative GPA of 2.00.

WT1490 - 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

WT1520 - Work Term
Successful completion of all courses in the preceding academic term. For most learners, it represents their first professional work experience in an industrial environment, and as such represents their first opportunity to evaluate their choice of pursuing a career in mining. Learners are expected to 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): Semesters 1 and 2

WT1700 - Biomedical Practicum
This course provides comprehensive on-the-job training for Electronics Engineering Technology (Biomedical) learners in a setting within the health care engineering field. The duration of this particular section is seven weeks and will be scheduled upon the successful completion of the eighth semester. Learners 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. Learners' abilities will be assessed by the Employer and the College staff.

Prerequisite(s): Successful completion of all courses in the first three semesters and a minimum cumulative GPA of 2.00.

WT1760 - Work Term I
The second work term provides learners possessing significant knowledge from the Telecommunications Engineering Technology (Co-op) program with the opportunity to contribute to an employers operation. This work term follows the successful completion of Semester 7. Learners are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge in the workplace. In addition, learners are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Learners should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the learner demonstrating competence in both technical content and communication skills and submitted to the Co-op Office. This work term must be program relevant, a minimum of 12 weeks in duration, a normal work week of at least 35 hours, remunerated (paid) and evaluated.

Prerequisite(s): Eligibility according to Co-op relations in current College Calendar

XD1350 - Environment & Ethics
This course introduces learners to the legal and ethical rights, obligations and responsibilities of the engineering profession. Through the use of readings, case studies and debates, learners will gain an understanding of the intent and application of professional code of ethics, tort law, environmental protection and occupational health and safety.

XD1810 - Solid State Motor Controls
This course introduces the learner to solid state electronics in motor controls. It includes coverage of power electronic devices, solid state relays and protection devices, and drive electronics.

Prerequisite(s): DP1100 or DP1110, AE2301 or AE2260, XD2300

XD2300 - Electromechanical Motor Controls
This course introduces the learner to motor control concepts and electromechanical control devices. The learners become familiar with control diagrams, techniques, and methods. It provides the learners with knowledge and background to support the more advanced control concepts presented in later courses.

Prerequisite(s): PE1500, PE1510

XD2500 - Programmable Controllers I
This course introduces the learner to programmable logic controllers. It covers PLC concepts and applications. The learners become familiar with PLC types, wiring details and programming techniques. Actual programs and system operation are introduced through lab exercises.

Prerequisite(s): DP1100 or DP1110, XD2300

XD2900 - Programmable Controllers II
This course is a continuation of XD2500. It extends the learner’s knowledge of PLC control through advanced instructions and practical exercises with industrial control trainers.

Prerequisite(s): XD2500