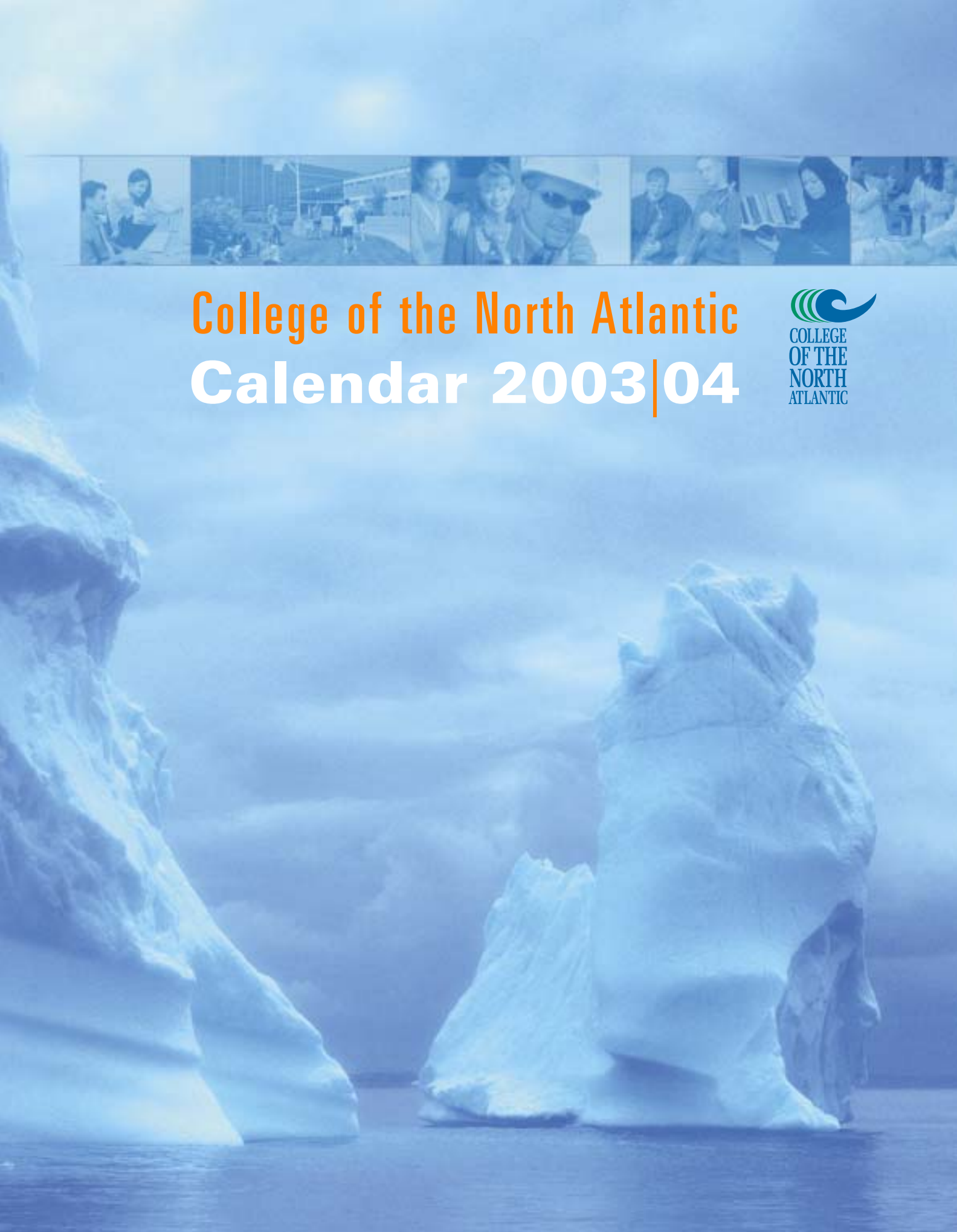


College of the North Atlantic
Calendar 2003|04

COLLEGE OF THE NORTH ATLANTIC

OUR MISSION

College of the North Atlantic is Newfoundland & Labrador's public college. We are committed to providing accessible, responsive, quality learning opportunities which prepare people to become self-sufficient contributors to social and economic development in a global context.

OUR VISION

To fulfill its education and training mission, the public college of Newfoundland & Labrador will:

- **Be recognized for satisfied employable graduates whose skills meet industry's standards and respond to the broad range of labour market demands.**
- **Research and deliver quality programs that are responsive to changing social, personal, and economic needs of learners through continuous review and modification of programs.**
- **Monitor accountability to ensure effectiveness and efficiency.**
- **Continually enhance learning opportunities by implementing superior methods of instructional delivery.**
- **Be proactive in the social and economic development of the Province.**
- **Enhance the capacity of the college and the Province through international initiatives.**
- **Recognize and respect the value of employees and their contribution to quality programs and services.**

NOTICE

The Student Services Office will assist students with any questions or problems which might arise concerning the interpretation of this calendar. It is, however, the responsibility of students to ensure that their programs meet the College's regulations in all respects.

www.northatlantic.nf.ca
info@northatlantic.nf.ca
toll free: 1 888 982.2268

Table of Contents

COVER PHOTOS: GRANT T. FAINT/GETTY IMAGES, ERIC WALSH, QMATRIX, & COLLEGE OF THE NORTH ATLANTIC
PUBLISHER: STUDENT SERVICES DIVISION, COLLEGE OF THE NORTH ATLANTIC
DESIGN: PAUL O'KEEFE

President's Message

It is my distinct pleasure to welcome you to College of the North Atlantic through the pages of our 2003-2004 Calendar. Welcome, in particular, to our classrooms, our laboratories, our shops and our world-class training institution. Your decision to attend – or to explore – College of the North Atlantic places you among the thousands of students and graduates of our institution that are known around the globe for the quality of the learning experiences they've enjoyed and the status of the credentials they hold.

Our College is your College and we pride ourselves on offering programs that are of the highest quality and, by implication, in sync with the demands of the employer community. Through continuous improvement initiatives, we ensure that our programs prepare you for the next stage of your career. Whether you choose to pursue employment directly after studying at College of the North Atlantic, continue your studies as a result of the many transfer opportunities we provide, pursue entrepreneurship or other personal goals, we are confident that your College learning experiences will serve you well in the future.

Providing access to well recognized programs and services is just one of the ways that we strive to meet your educational and personal development needs. We are committed, as well, to providing an environment and supportive services that facilitate your ability to achieve at your highest level of potential. The opportunities are here, all you need do is contribute and participate in available learning experiences to the best of your ability. The results will astound you, impress you and empower you for years to come.

If you are just beginning to explore College of the North Atlantic as your College of choice, be sure to review our extensive range of program offerings across the fields of: Applied Arts, Business, Engineering Technology, Health Sciences, Industrial Education/Trades, Information Technology, Natural Resources, and Academic, General, and Transfer Studies. In addition to our on-campus learning opportunities, we also offer a wide range of study opportunities via our distributed learning service. One-year, two-year, or three-year programs, on-site or on-the-web, find out what we offer – find out what's right for you.

This calendar has been published to serve as your reference and your guide. If you are a current student, potential student or graduate, there's a wealth of information contained herein and it's there to inform you. If at any time you wish to discuss program opportunities, regulations or policies, just contact any of our campuses and our Student Services staff will be pleased to assist you in ensuring that your information needs are met. Our faculty, our staff and our administrators are dedicated to helping you attain your education and training goals.

I wish you all the best in your studies. Remember, career goals will become reality when combined with determination, motivation and unwavering commitment. The potential is here and it's yours to achieve.

Pamela Walsh
President, College of the North Atlantic

ABOUT THE COLLEGE

College of the North Atlantic is Newfoundland and Labrador's public college. It is one of the largest post-secondary educational and skills training centres in Atlantic Canada, offering over 90 full-time diploma and certificate programs in:

Academic, General, and Transfer Studies
Applied Arts
Business Studies
Engineering Technology
Health Sciences
Industrial Trades
Information Technology
Natural Resources

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

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

Campus Directory

IMPORTANT NOTICE

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

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

Students are responsible for familiarizing themselves with the specific information, rules and regulations of the College, as well as the specific requirements of each diploma, certificate or other recognition sought. While advice and counselling are available, it is the responsibility of each student to ensure that the courses in which registration is affected are appropriate to the requirements of the student's chosen program.

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

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

College of the North Atlantic disclaims all responsibility and liability for loss or damage suffered or incurred by any student or other party as a result of delays in or termination of its services, courses or classes by reason of force majeure, fire, floods, riots, war, strikes, lock-outs, damage to College property, financial exigency, or other events beyond the reasonable control of the College.

College of the North Atlantic disclaims any and all liability for damages arising as a result of errors, interruptions or disruptions to operations or connected with its operations or its campuses, arising out of computer failure or non compliance of its computing systems.

Headquarters
P.O. Box 5400
Stephenville, NL A2N 2Z6
tel: (709) 643-7715

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

Bay St. George Campus
P. O. Box 5400
Stephenville, NL A2N 2Z6
tel: (709) 643-7730
fax: (709) 643-7734

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

Burin Campus
P. O. Box 370
Burin Bay Arm, NL A0E 1G0
tel: (709) 891-1253
fax: (709) 891-2256

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

Clarenville Campus
P. O. Box 308
Clarenville, NL A0E 1J0
tel: (709) 466-6900
fax: (709) 466-2771

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

Gander Campus
P. O. Box 395
Gander, NL A1V 1W8
tel: (709) 256-4481
fax:(709) 651-3376

Grand Falls-Windsor Campus
P. O. Box 413
Grand Falls-Windsor, NL A2A 2J8
tel: (709) 292-5622
fax: (709) 489-4180

Happy Valley-Goose Bay Campus
P. O. Box 1720, Station "B"
Happy Valley-Goose Bay, NL A0P 1E0
tel: (709) 896-6300
fax: (709) 896-3733

Labrador West Campus
Campbell Drive
Labrador City, NL A2V 2Y1
tel: (709) 944-7210
fax: (709) 944-6581

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

Port aux Basques Campus
P. O. Box 760
Port aux Basques, NL A0M 1C0
tel: (709) 695-3582
fax: (709) 695-2963

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

Prince Philip Drive/Ridge Road/ Seal Cove Campuses
P. O. Box 1693
St. John's, NL A1C 5P7
tel: (709) 758-7284
fax: (709) 758-7304

PROGRAM ENQUIRY COLLEGE-WIDE

toll free: 1-888-982-2268
www.northatlantic.nf.ca
info@northatlantic.nf.ca

Programs by Campus

BAIE VERTE CAMPUS
Adult Basic Education
Multi Skills Industrial Training
Office Administration
Special Services (Programs)
Steamfitter/Pipefitter

BAY ST. GEORGE CAMPUS
Adult Basic Education
Automotive Service Technician
Business Administration
Commercial Baking
Commercial Cooking
Commercial Transport
Community Studies
Cultural Management
Crane Operator
Cultural Management
Digital Animation
Film and Video Production
Hairstylist
Heavy Equipment Service Technician
Heavy Equipment Operator
Journalism
Multimedia: Courseware Development
Music Industry and Performance
Office Administration
Recording Arts
Small Equipment Repair
Special Services (Programs)
Tourism Studies
Truck Transport Service Technician
Visual Arts

BONAVISTA CAMPUS
Adult Basic Education
Construction/Industrial Electrical
Fish and Wildlife Technician
Office Administration
Plumbing
Special Services (Programs)

BURIN CAMPUS
Adult Basic Education
Business Administration
College-University Transfer Year
Commercial Cooking
Electrical Engineering (Industrial Control)
Engineering First Year
Hairstylist
Metal Fabrication
Office Administration
Special Services (Programs)
Welder
Welding Engineering Technician

CARBONEAR CAMPUS
Adult Basic Education
Business Administration
College-University Transfer Year
Community Studies
Computer Support Specialist
Engineering First Year
Heritage Carpentry
Special Services (Programs)

CLARENVILLE CAMPUS
Adult Basic Education
Business Administration
Carpentry
Computer Support Specialist
Engineering First Year
Multimedia Internet Development
Office Administration
Special Services (Programs)
Steamfitter/Pipefitter
Website Administrator

CORNER BROOK CAMPUS
Adult Basic Education
Adventure Tourism
Business Administration
Civil Engineering Technology
Computer Support Specialist
Construction/Industrial Electrical
Early Childhood Education
Electronics Engineering Technology
Engineering First Year
Environmental Technology
Fish and Wildlife Technician
Forest Resources Technician
Internet Application Developer
Manufacturing Operations Technology
Millwright
Office Administration
Programmer Analyst
Special Services (Programs)
Welder

GANDER CAMPUS
Adult Basic Education
Aircraft Maintenance Engineering Technology
Aircraft Structural Repair
Automotive Service Technician
Computer Support Specialist
Engineering First Year
Hairstylist
Special Services (Programs)

GRAND FALLS-WINDSOR CAMPUS
Adult Basic Education
Business Management
College-University Transfer Year
Office Administration
Programmer Analyst
Special Services (Programs)

HAPPY VALLEY-GOOSE BAY CAMPUS
Adult Basic Education
Auto Service Technician
College-University Transfer Year
Community Studies
Computer Support Specialist
Heavy Equipment Service Technician
Millwright
Northern Natural Resource Technician
Office Administration
Special Services (Programs)
Welder

LABRADOR WEST CAMPUS
Adult Basic Education
Business Administration
College-University Transfer Year
Computer Support Specialist
Engineering First Year
Mining and Mineral Processing
Special Services (Programs)

PLACENTIA CAMPUS
Adult Basic Education
Business Administration
Heavy Equipment Service Technician
Machinist
Millwright
Special Services (Programs)
Welder

PORT AUX BASQUES CAMPUS
Adult Basic Education
Business Administration
Non-Destructive Testing
Office Administration
Special Services (Programs)
Welder/Fabricator

PRINCE PHILIP DRIVE CAMPUS
Adult Basic Education
Autobody Repair
Automotive Service Technician
Business Management
Community Recreation Leadership
Computer Support Specialist
Commercial Cooking
Diagnostic Ultrasonography
Early Childhood Education
English as a Second Language (ESL)
Food Service & Nutrition Management
Graphic Design
Graphic Production & Printing
Medical Laboratory Sciences
Medical Radiography
Occupational Therapy Assistant
Office Administration
Physiotherapy Assistant
Programmer Analyst Co-op
Respiratory Therapy
Special Services (Programs)
Textile Studies
Tourism Studies
Welder

RIDGE ROAD CAMPUS
Architectural Engineering Technology
Civil Engineering Technology
Electrical Engineering Technology (Power & Controls) Co-op
Electronics Engineering Technology
- Biomedical
- Communications
- Computers & Information Technology Co-op
- Instrumentation

Engineering First Year
Geomatics Engineering Technology Co-op
Industrial Engineering Technology Co-op
Mechanical Engineering Technology
Mechanical Engineering Technology (Manufacturing) Co-op
Petroleum Engineering Technology
Refrigeration & Air Conditioning
Special Services (Programs)

SEAL COVE CAMPUS
Adult Basic Education
Commercial Cooking
Construction/Industrial Electrical
Oil Burner Mechanic
Powerline Technician
Industrial Instrumentation Mechanic
Special Services (Programs)

ST. ANTHONY CAMPUS
Adult Basic Education
Business Administration
Engineering First Year
Office Administration
Special Services (Programs)

Calendar of Events 2003-2004

Note: The schedule contains the dates as they affect the College as a whole. Within these dates, individual campuses will set their registration schedules, graduation dates and other significant time frames. Please check with the campus concerned for the detailed Calendar).

September 2 (Tuesday)
Registration begins - Fall Semester

September 16 (Tuesday)
Last day for adding courses - Fall Semester

October 13 (Monday)
College CLOSED - Thanksgiving Day

October 24 (Friday)
Last day for dropping courses without academic prejudice - Fall Semester

November 10 (Monday) - Semester Break

November 11 (Tuesday)
College CLOSED-Remembrance Day

December 19 (Thursday)
Last day of classes/exams - Fall Semester

December 19 (Friday) - **January 2** (Friday)
CHRISTMAS BREAK

January 5 (Monday)
Registration begins - Winter Semester

January 19 (Monday)
Last day for adding courses - Winter Semester

February 20 (Friday) and **February 23** (Monday) - (except Corner Brook Campus where dates are to be announced) Semester Break

February 27 (Friday)
Last day for dropping courses without academic prejudice - Winter Semester

April 9 (Friday)
College CLOSED - Good Friday

April 12 (Monday) - **April 16** (Friday)
EASTER BREAK

April 28 (Wednesday)
Last day of classes/exams - Winter Semester

April 29 (Thursday)
Registration begins - Intersession, Industrial Trades

May 3 (Monday)
Registration begins - Spring Semester

May 10 (Monday)
Registration begins - Technical Intersession

May 14 (Friday)
Last day for adding courses - Technical Intersession
Last day for adding courses - Spring Semester

May 21 (Friday)
Last day for dropping courses - Technical Intersession

May 24 (Monday)
College CLOSED - Commonwealth Day

June 15 (Tuesday)
Last day for classes/exams - Intersession - Industrial Trades

June 21 (Monday)
College CLOSED - Discovery Day

June 25 (Friday)
Last day for dropping courses - Spring Semester
Last day for classes/exams - Technical Intersession

July 1 (Thursday)
College CLOSED - Canada Day

August 18 (Wednesday)
Last day of classes/exams - Spring Semester

August 30 (Monday)
Registration begins - Fall Semester

Administration List

BOARD OF GOVERNORS

Ms. Moya Cahill, Board Chair
Mr. Michael Tobin, Vice Chair
Mr. Terry White
Ms. Susan Adams
Mr. Edward Delaney
Dr. Audrey Manning
Mr. Stanley Sparkes
Mr. Leonard Winsor
Mr. Gunther Baumgartner
Ms. Juliet Crosbie
Ms. Joanne Hussey
Mr. David Lewis
Ms. Jenny Lyall
Mr. Alan MacKinnon
Mr. Gary Reardon
Ms. Marilyn Tucker
Student Representative
Faculty Representative
Ms. Pamela Walsh – President

HEADQUARTERS

President's Office
Walsh, Pamela, President
Baker, Kevin, General Counsel & Corporate Secretary
Borden, Giselle, Secretary
Pinsent, Edith, Secretary

Student Services
Tobin, Brian, Director
Dunne, Linda, Registrar
Barrington, Brenda, Associate Registrar
Pye, Ian, Statistician
McCoy, Cathy, Apprenticeship Admissions Officer
Hulan, Beverly, Secretary

Program & Academic Development
Farrell, Cyril, Director
Hibbitts, Phyllis, Secretary
Andrews, Marian, Chair of Programs
Davis, Jim, Program Development Coordinator
Smith Walter, Program Development Coordinator
Barnes, Trudy, Program Development Coordinator
Kenny, Robert, Program Development Coordinator
Banfield, Jenny, Secretary
White, Linda, Chair, Applied Arts & Business Studies
Anderson, George, Chair, Industrial Trades
Chaytor, Greg, Chair, Engineering Technology/Information Technology
Henderson, Dr. Donna, Chair, Health Sciences
King, John, Chair, Distributed Learning
Cryderman, Blake, Chair, Community and Corporate
Tobin, Brenda, Chair of Academic, General and Transfer Studies

Financial & Administrative Services
Rideout, Robert, Director
Vivian, Richard, Associate Director
Morey, Annette, Comptroller
Squires, Lilly, Accounting Manager
Merrigan, Joanne, Payroll Supervisor
Brown, Sheldon, Professional Development Coordinator
Hann, Wayne, Manager, Telecommunications & Operations IT
Comeau, Gary, Manager, Desktop Services & Regional Operations
Dunne, Deidre, Labour Relations Officer
White, Debbie, Secretary

College Development
Hobbs, Donna, Advertising & Promotions Coordinator
Lee, Stephen, Communications Manager
Alexander, Tanya, Public Information Officer
O'Keefe, Paul, Graphic Artist
Foote Melanie, Marketing Assistant

ADMINISTRATION

Baie Verte Campus
Forward, Colin, District Administrator

Bay St. George Campus
King, Lorne, Associate District Administrator
Organ, Cyril, Associate District Administrator

Bonavista Campus
Coles-Hayley, Marilyn, District Administrator

Burin Campus
Walsh, Dennis, Associate District Administrator

Carbonear Campus
Maillet, Conrad, Associate District Administrator

Clarenville Campus
Reid, Brenda, Associate District Administrator

Corner Brook Campus
Dicks, Glen, District Administrator
Howell, Brent, Associate District Administrator
Chaulk, Elizabeth, Associate District Administrator

Gander Campus
Moss, Mac, Associate District Administrator

Grand Falls-Windsor Campus
Kelly, Geoff, Associate District Administrator
Hearn, Robert, Associate District Administrator

Happy Valley-Goose Bay Campus
Simms, Robert, District Administrator
Montague, Winnie, Associate District Administrator

Labrador West Campus
Walters, Robin, Associate District Administrator

Placentia Campus
TBA, Associate District Administrator

Port aux Basques Campus
Janes, Charles, Associate District Administrator

Prince Philip Drive Campus
Quinton, Steve, District Administrator
Baker, Bruce, Associate District Administrator
Gosse, Gail, Associate District Administrator

Ridge Road Campus
Oates, John, Associate District Administrator
Fancey, Everett, Associate District Administrator

Seal Cove Campus
Whalen, Bill, Associate District Administrator

St. Anthony Campus
Russell, Fred, Associate District Administrator

Admissions Regulations

It is the policy of the College to maintain an "open admission policy". Students 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 students meet the minimum qualifications prescribed.

ENTRY INTO FULL-TIME PROGRAMS

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

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

HIGH SCHOOL DEFINITION

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

High School students who complete a modified program having completed courses ending in 06 may require further assessment before eligibility is determined. Application from such applicants will be referred to the Campus Disability Services Committee for assessment.

HIGH SCHOOL EQUIVALENCY

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

a. Basic Training for Skill Development (BTSD) Level 4.
b. Adult Basic Education Certificate (ABE) Level 3 (Level 4 prior to 1991).
c. General Educational Development (GED).
d. The Grade XI Certificate (Department of Education, Public Exams).

Persons holding certificates as listed in a, b, or c:

- 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:

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

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

Applicants with disabilities will undergo an assessment to determine admission. The assessment will include:

1. Reviewing the applicant's qualifications.
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 support staff required to facilitate the integration of the applicant.
5. Identifying necessary resources/equipment required to facilitate the training.

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 student's interests, abilities and experience.

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

General Guidelines:

a. All work in the portfolio should be clearly labeled with the prospective student's name, title of the work, number of pieces, date completed and materials used;
b. Portfolios should include a printed listing of the contents of the portfolio;
c. All works should fit into a standard size portfolio case and may be presented in their original form;
d. Large scale, fragile or 3-dimensional work should be submitted in 35 mm. colour slide form, as digital images at a resolution of 150 ppi or as colour photographic or digital prints;
e. 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:
   i. a "cover" of another's work
   ii. public domain

f. Applicants should be advised that they are responsible for the return of submitted materials after they have been reviewed by the Assessment Committee. Applicants are urged to include prestamped and self-addressed mailing envelopes, prepaid courier invoices, or cheques or money orders to cover postage costs if they wish their work to be returned after review. Portfolios will be destroyed if they are not claimed within one month of the date of notice of the decision of the Assessment Committee. The College assumes no responsibility for loss of or damage to portfolios submitted.

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

i. originality of ideas or concepts;
ii. technical skills;
iii. observation and interpretive skills;
iv. a variety of media;
v. presentation and organization of material

Submission Deadline:
Applicants are strongly urged to apply early as places in the program are filled on a first-come, first-served basis. Portfolios should be submitted with the application.

Effective Date:
The requirement for portfolios as an admission requirement in specified programs will become effective as of September 1, 2003. All applications received prior to that date will be processed and wait listed without a portfolio requirement.

RE-ADMISSION OF STUDENTS

Academically Dismissed Students

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

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

3. Students who are required to withdraw from the College under numbers 1 and 2 (above) must apply for readmission and their names will be placed at the end of the existing waitlist.

VOLUNTARY WITHDRAWAL

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

WAITLISTS

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

SELECTION PROCESS

Original Application

A. Applications will be processed on a "first-come, first-served" basis. Each application will be dated on the date of receipt provided that:
   1. The application is correctly completed with all documentation, and
   2. All educational and other requirements are met, and
   3. All required fees are paid.

B. Applicants will be notified immediately upon receipt of their application.

C. Applicants enrolled in their final year of high school will be accepted conditionally pending receipt of final exam results.

D. When accepted, applicants will be asked to confirm in writing their intent to register and will be required to pay a registration fee in advance. If applicants fail to confirm within the time specified their places will go to the applicant next on the eligibility list.

E. First Year Engineering Technology Students: The College offers a common first year in the Engineering Technologies. This initiative allows students to attend the first two semesters of an engineering technology program at the campus nearest their hometown. After completing the first two semesters, students then enter the campus which offers the program of their choice, to complete the Spring Technical Intersession and the subsequent years of their program.

Individuals must submit their application to the campus where they intend to complete the first two semesters of their program. This begins a first-come, first-served provincial process which reserves a seat at the designated campus for the appropriate Technical Intersession, and subsequent years of program study. Applicants are given the opportunity to make a first and second program choice. This option allows applicants who apply early an increased opportunity for placement in at least one of their own choices. If a student's first program choice is unavailable, and the applicant accepts his/her second program choice, then the first choice is automatically dropped from the provincial waiting list.

After successful completion of the first two semesters, students progress to the Technical Intersession in the program for which a seat has already been reserved. Students who, after registration, wish to change their original program choice MUST apply for a Program Transfer.

STUDENT NUMBERS

A. Student numbers will be assigned to students who enter a regular College program either on a full-time or part-time basis.

B. Students will use the number assigned to them regardless of the number of times they register at the College or the campus at which they register.

C. Student numbers must appear on all documents to be added to the student's academic or financial files.

D. Once student numbers are assigned, they will not be reassigned; that is, if numbers are assigned to students who do not register – those numbers become inactive.

ENTRY - NON PROGRAM SPECIFIC

The only entrance requirement for candidates wishing to apply for a credit course through General Studies is the course prerequisite, if applicable.

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

ENTRY - PART-TIME STUDENTS

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

ENTRY - CONCURRENT STUDIES STUDENTS

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

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

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

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

D. All fees and deadlines for regularly admitted students will apply.

E. Students applying for admission under this policy will be required to submit:
   1. a completed application form,
   2. an official high school transcript,
   3. a letter from the high school principal or guidance counsellor clearly recommending admission to "Concurrent Studies", and
   4. a letter from the applicant requesting enrollment in a specific course.

LANDED IMMIGRANTS: REFUGEES AND OTHER CANADIAN STATUS STUDENTS

These students pay the provincial rates, as outlined in this calendar; however, if the student's first language is not English, the College reserves the right to test the English proficiency of these students before admission.

ENTRY - STUDENTS WITH INTERNATIONAL STUDY PERMIT

Applicants must submit:

1. a fully completed Application for Admission (incomplete forms may result in delays to your application).
2. a transcript of academic record
3. Application fee of CDN $100 (non-refundable)
3. Proof of proficiency in English. The college accepts a number of English capability assessment methods. Please submit your current test results for assessment or contact us for details.

Students who do not meet the required standard of English may be accepted on condition that they will be tested on arrival and will be required to enroll in an appropriate English class. Registration for other courses will be dependent on their assessed level of English.

Applications are assessed by the Registrar's Office and letters of acceptance are mailed to successful applicants.

The Letter of Acceptance will confirm enrollment, length and program of study to be undertaken. Applicants should then consult the Canadian Embassy in the country of residence. Applicants must complete and submit to the Canadian Embassy a visa application form. In some instances, applicants may have to pay an administrative fee in order that the visa application can be processed. A personal interview with a visa officer may sometimes be required before student visas are issued to the applicants.

Upon receipt of the Letter of Acceptance, tuition fees for the first year of the program of studies will be due. In the event that student visas are not awarded by the Canadian Embassy, the tuition fees will be refunded. It is the responsibility of the student to apply for refund of fees along with proof of refusal of student visa. In the event that the student receives a student visa but decides not to attend, the tuition fees will not be refundable.

Before completing the visa application form, applicants must also provide the following documentation to the Canadian Embassy:

- A photocopy of the passport pages bearing the biographical and identification data and expiry dates of the passport or documentation verifying personal identification.
- An original Letter of Acceptance from the College
- A photocopy of the applicant's most recent education certificate and academic transcript plus proof of English language proficiency, is required to ensure adequate language comprehension in most college programs
- Proof of funds available to cover tuition, supplies and living expenses (bank or notarized statements). If the applicant has relatives and friends in Canada wishing to assist, they must complete a declaration stating their willingness and ability to support the applicant. Notarized bank or financial status is required.

Academic Prerequisites
Applicants from British-oriented educational systems should present the general certificate in Secondary Education. Certain programs require achievement in specific subject areas such as Mathematics, English Language, Physics, Chemistry or Biology. Transcripts will be assessed on an individual basis.

Applicants who have attended a different educational system should submit the latest transcript of marks which will be assessed on an individual basis.

Health Insurance
Health insurance is required for all International students. Information will be provided on request. Registration will not be permitted without proof of valid health insurance coverage at time of registration. Health coverage must be maintained throughout the student's attendance at the College, otherwise the student will be asked to leave the program, in which case fees will not be refunded.

Proof of Status
Students must show proof of status in Canada at the time of registration (eg. International Study Permit).

Student Services
The International Student Coordinator will provide assistance to International students in such areas as: accommodations (contact lists of apartments, boarding houses) or home-stay; orientation and general information. The full range of student services as outlined in this calendar will be made available to International students.

Fees
For information on international student fees please refer to Page 14, Section 2.1

Academic Regulations

DEFINITIONS OF ACADEMIC TERMS

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

Access Programs
Developmental programs that students 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:
a. occupational skill development;
b. academic or general study
c. self interest or personal growth.

Diploma Programs will normally:
a. be prescribed over a minimum of a four semester period.;
b. be comprised of a minimum of 80 credits; and
c. 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:
a. be prescribed over a minimum of one semester;
b. be comprised of a minimum of 20 credits.

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

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

Continuing Education Studies (Certificate of Attendance)
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.

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 officer 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 Attendance)
   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 Student
Students who are registered for 4 or more courses in course-based programs.

Part-Time Student
Students who are registered for less than 4 courses in course-based programs

Students 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, 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, students will be awarded one of four parchments:
1. A Certificate in (Program Title)
2. A Diploma in (Program Title)
3. An Advanced Diploma in (Program Title)
4. A Certificate in Continuing Studies in (Program/Course Title)

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

To quality for a diploma, an advanced diploma, or a certificate, students must meet the following requirements:
- Meet all the requirements as prescribed in the program of studies;
- Obtain a mark of not less than 50% in every course in the program unless otherwise specified;
- Attain a minimum grade point average of two;
- Obtain 25% or more of their credits from the College.

Students 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 Student 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.

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

ADVANCED STANDING

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

Applicants who wish to be considered for advanced standing should submit an application with the following documents:

1. Proof of high school completion;
2. Official transcript(s);
3. Calendar description of the courses claimed for credit.

Deadline for receipt of applications by the Registrar is four weeks following registration date.

Students 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. 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 student 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 students 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 student transcript as an exemption or as a mark.

There will be no change for Prior Learning Assessment and Recognition for students who are enrolled on a full-time basis and whose status will remain full-time after the credit is awarded for the course in which Prior Learning Assessment and Recognition was granted. Part-time students will be assessed $50.00 per course for each Prior Learning Assessment and Recognition assessment.

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 student is now applying. When students 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 hrs. of lab/week/semester is equivalent to one credit
5 – 7 hrs. of lab/week/semester is equivalent to two credits
8 – 10 hrs. of lab/week/semester is equivalent to three credits.

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

Grade Point Marking System

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

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

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

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

When students complete more than the minimum number of electives, students 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

1. **Clear Standing**
   A. Students are in clear standing when they have passed all courses and have attained a grade point average of at least 2.0
   B. In Diagnostic Ultrasonography, Medical Laboratory Sciences II and III, Medical Radiography II and III, Respiratory Therapy II and III programs the pass mark is 60%.
   C. In Industrial Trades programs, the pass mark is 70%.
   D. In Aircraft Maintenance Technology and Aircraft Structural Repair the passing grade is 70%.

2. **Conditional Status**
   Students 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 (eg., students who must successfully complete a failed course through supplementary examinations or repetition).

   Students 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.

3. **Academic Dismissal**
   Students 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.

   The College will waive the academic dismissal policy on a "one-time forgiveness" basis as per the following:

   Students, 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 students are referred to a Student Services 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 student in consultation with the academic advisor/counsellor. The maximum course load will not exceed the normal semester workload for the program.

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

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

Students 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.

Academically dismissed students are not eligible to write supplementary exams.

Students 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.

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

4. **Promotion Denied (General)**
Students 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.

5. **Promotion – Engineering Technology Programs from First Year**
To qualify for the technical session, at the end of the first two semesters students must normally have successfully completed all prescribed courses and attained a minimum overall G.P.A. of 2.00. Students 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 students are capable of attaining clear standing by the end of the subsequent semester.

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

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

8. **Promotion in Food Services and Nutrition Management**
Students 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 students who successfully complete work terms as articulated in their program structure.

2. To be eligible for a work term, a student 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 student 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. Students 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 student transcript.
   a. Work term performance is evaluated by the employer and monitored by the College.
   b. The work term report is validated by the employer and graded by faculty/coordinators. A student receiving a 40% or 45% grade on the work term report will be eligible to re-submit the report. The report must be re-submitted no longer than four weeks after receipt of the work term evaluation.

4. Students 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 student commences work.

5. Students are required to sign a waiver giving permission to the College to supply students' resumes and transcripts to potential employers.

REGISTRATION

It is the policy of this College that all students will register for full-time programs at the beginning of each semester including the Intersession. Students 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 students at the beginning of each subsequent semester.

Date of Registration
Students 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 students 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

Students 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 student is specified in the outline for each program as published in the College Calendar.

Extended Course Loads
Students who wish to register for extra courses must make application to the program administrator or designate.

REPEATING COURSES

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

* Space limitations and other considerations will determine approval.

INDEPENDENT STUDIES

When required courses are not available in a particular semester, full-time students may make application to the program 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 program administrator and the coordinator (where applicable) in consultation with the faculty. Strategies to ensure adherence to course requirements may be documented in contract format to be signed by the student, the course instructor, the program 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. Students must complete the appropriate registration change form. Changes must be approved by the program 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 student has received the written permission of the program administrator to drop a course without penalty. Students are required to complete the appropriate registration change form which must be approved by the instructors concerned and by the program administrator or designate.

Registered students who wish to withdraw from the College will be invited to discuss the situation with the appropriate Student Services official. The withdrawal form must be completed and signed by the appropriate faculty and the program administrator.

LATERAL TRANSFER

Students wishing to change their program of studies must apply for Lateral Transfer.

A. **From One Program to Another at the Same Campus**

- Applications for Lateral Transfer are available from the Registrar's Office. Students must discuss their request with the Counsellor and the program administrator and receive written approval.
- Lateral transfer may be granted if there is space available and the appropriate counselling processes have been followed.

B. **From One Campus to Another in the Same or Different Program**

- Students must discuss their request with the Counsellor and the program administrator and receive written approval.
- Applications for Lateral Transfer are available from the Registrar's Office.
- As certain programs are offered using different instructional methodology at the various campuses, transfer may be limited to the end of given semesters.
- The campus Registrar's agent will contact the program administrator at the receiving campus to determine space availability and appropriate transfer time frame.

EXAMINATIONS AND TESTS

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

Student evaluation will be conducted on a continuous basis. The method of evaluation will be recommended in the official Course Description.

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

1. Courses with no final semester examination.
2. Laboratory examinations.
3. Self-directed and modular courses.
4. Courses with block teaching.
5. Assignments given prior to this period which are due in the two weeks prior to examinations.
6. Courses offered in the intersession and summer session (i.e. 5 – 7 week periods). The time frame for these courses will be one week prior to the start of examinations.

SUPPLEMENTARY EXAMINATIONS

Supplementary examinations provide an opportunity for students in Diploma Programs to improve their standing in a course in which they have attained a failing grade of 40% or 45% in any given semester.

For upgrading purposes, in their last semester of studies, students may be given an opportunity to write a supplementary examination for a course in which they have attained a mark of 50% or 55%. Also refer to the Co-op Regulations.

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. Students may be eligible to write one supplementary per semester.
2. Supplementary exams will not apply to any course in which the final exam is worth less than 30%.
3. Supplementary examinations will be scheduled and should be written during the supplementary period following the regular examination period.
4. Students must apply, in writing, for supplementary examinations. The established standard fee per supplementary examination must accompany the application form. Refunds of such fees will be permitted only if permission to write an examination is not granted.
5. If the mark obtained in the supplementary is lower than the original mark obtained on the regular examination, the original mark will be included in calculating the grade point average.
6. Where circumstances warrant, supplementary examinations may be written off-campus; the Registrar's Office must be contacted for permission and guidelines prior to the examination period. All costs associated with the administration of off campus supplementary examinations will be borne by the student.
7. Academically dismissed students are not eligible to write supplementary exams.

DEFERRED EXAMS

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

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

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

INCOMPLETE

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

REASSESSMENT OF GRADES

Students, 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, students may request that the matter be reviewed by the program administrator. If this action is taken, it must be done within five instructional days of receipt of the assessment.

Unsatisfactory resolution of the dispute at this stage may enable students 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

Students may apply to have a final examination paper re-read.
An application for re-read must be made in writing to the Registrar's Office within one month following the release of the marks.

A re-read fee must be paid at the time of application. If the mark is changed after the re-read, the fee is refunded; if the mark is unchanged, the fee is forfeited.
The mark obtained in a re-read stands as the official mark in the course and is used in all calculations of the student's academic record.

AEGROTAT STATUS

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

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

ACADEMIC DOCUMENTATION

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

1. **Grade Reports**
Grade reports will be issued at the end of each semester and intersession.
2. **Transcripts/Records of Achievement**
   A. Official Transcripts/Records of Achievement may be obtained at any time from the campus Registrar's Office.
   B. A transcript includes the student's academic record to date including academic decisions which may have been taken. Transcripts that are released will include the student's complete academic history.

STUDENT APPEALS (ACADEMIC)

All registered students of the College have the right to appeal decisions or rulings which affect them and which pertain to academic matters.

STUDENT APPEALS (NON-ACADEMIC)

All students 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.

Procedure
Normally, instructors, faculty advisors, and program coordinators, in full adherence to current policies and regulations, should extend every effort to resolve students' disputes thereby avoiding the formal appeal process.

The Appeals Committee therefore, is the final hearing for students who have been unable to obtain what they deem to be a fair resolution to an alleged violation of their rights. After consulting with a Student Services representative, the formal appeal should be presented in writing by the student to the campus administrator. The appeal must be presented within 10 days from the date of the decision or ruling with which the student disagrees.

The Appeals Committee must consist of a campus administrator or designate, who will act as Chairperson, a student services representative, one student representative, the registrar or designate and one faculty representative from a department other than the department under appeal.

The Chairperson shall set up the Committee to examine the evidence ensuring that all appropriate parties to the complaint are given an opportunity to appeal before the Committee. Minutes must be recorded and filed.

The decision of the Committee will be final and must be conveyed in writing to the student with a copy to the President and the Director of Student Services within five (5) working days, from the receipt of the appeal.

Fees and Charges

1.0 REGULATIONS GOVERNING PAYMENT OF FEES & CHARGES

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

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

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

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

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

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

2.0 FEES & CHARGES

2.1 FULL-TIME STUDENTS

Students enrolled in four (4) or more courses:

a. Application fee per program $30.00
(Non-refundable)
Application fee for International students $100.00

b. Registration fee $91.00
(Annual fee payable on anniversary of registration. This fee covers registration, insurance, and student associations).

c. Tuition – per semester $726.00

d. Equipment/Materials fee per semester
(Intended to help offset material costs of program)

ABE/College Preparation	No Charge
Business/IT Programs	$50.00
Applied Arts/College Transfer	$100.00
Trades/Health Science/Engineering Technology/Natural Resources	$150.00
Heavy Equipment/Commercial Transport	$500.00

e. Work Term fee per semester $363.00
(Co-op and Non Co-op)

f. On the Job (OJT) fees - per week $ 49.00
(Applies if OJT occurs outside of regular semester)

g. Intersession

Tuition fees per week	$49.00
Equipment/Materials fees per session	(50% of regular fees)

h. Apprenticeship fees per week $25.00

i. International Students
All regular fees (registration fees, equipment and materials fees) apply with the following exceptions:

Full-time-Tuition fee per semester	$3300.00
Part-time-Tuition fee per course	$825.00
Intersession	$1650.00
Distance Learning Course per course	$660.00
Medical Insurance per year	$500.00-$600.00

2.2 PART-TIME STUDENTS

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

a. Tuition fee per course $230.00
(Includes tuition, equipment/materials, application fees and student association fees).

2.3 COMMUNITY EDUCATION

Contact local campus for course fees.

2.4 RESIDENCE FEES (PRESENTLY UNDER REVIEW)

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

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

a. Fees applicable to all campuses

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

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

Daily Room Charges	**Single**	**Double**
	$15.00	$10.00

b. Fees specific to each campus – presently under review. Please contact the campus for rates.

Bay St. George Campus
Room and 10 meals
Room and 14 meals
Room and 19 meals

Burin Campus
Room and 5 meals
Room only

Happy Valley Campus
Student Residence
Room and 14 meals

Family Residence (Apartments)
1 Bedroom-monthly rate/no meals
2 Bedroom-monthly rate/no meals
3 Bedroom-monthly rate/no meals

2.5 MISCELLANEOUS FEES

a.Supplementary/Re-read fee	$25.00
Course Challenge/PLAR Assessment fee per course	$50.00*
b.Resource Camp fees per day (Covers food & Lodging - not tuition)	$30.00
c.NSF Cheques	$25.00
d.Replacement I.D. cards	$ 15.00
e.Daycare fees (Contact applicable campus)	N/A

* part-time students only

3.0 REFUNDS

a.**Tuition and Fees**

A student who withdraws within the first six weeks of classes will pay the regular weekly tuition and other fees for the number of weeks enrolled. Any balances owing to students will be refunded. No refund will be made if withdrawal takes place after the sixth week of classes. During the intersession, no refunds will be made after the third week of classes.

General Studies

A student who withdraws within the first three weeks of classes will receive a full refund. If withdrawal takes place within four to six weeks, the refund will be prorated. No refund will be made if withdrawal takes place after the sixth week of classes.

b.Registration fees will be refunded only to students not meeting academic entrance requirements.

c.Application fees are non-refundable.

d.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 must be presented before a refund is issued.

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

4.0 STUDENT CREDIT

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

No credit will be given for textbooks.

Students Receiving Student Loans

Students who will be receiving Student Loans and the amount of the loan is confirmed may be eligible for a Student Waiver. The Waiver should specify what is covered and for what period of time. When the student loan arrives, the amount owing will be deducted by the College.

Students Not Receiving Student Loans

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

5.0 FINANCIAL APPEALS

Appeals of a financial assessment should be made in writing to the Director of Aministration.

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

Student Services

INTRODUCTION
The primary concern of Student Service professionals is to help establish and sustain an environment in which students can learn and develop.

COUNSELLING AND PERSONAL DEVELOPMENT
Counselling, including standardized testing, is available to all students. Each Campus has either a professional Guidance Counsellor or another Student Services Professional to assist students. Students may seek assistance in all areas of counselling namely career, educational, and personal. This type of counselling is usually conducted on a one-to-one basis or in small groups.

STUDENT AFFAIRS/EMPLOYMENT SERVICES
The Student Affairs/Employment Officers provide students with services of a non-academic nature. Specifically, the Student Affairs/Employment Officer may be involved with student government, peer tutoring, and assisting students with financial aid information. The Student Affairs/Employment Officer acts as a liaison between the students and administration of the campus and serves as a direct contact for employment-related issues. This involves delivering job-search seminars, promoting graduates to potential employers, and gathering information related to student and graduate employment, including surveys of students and graduates. The Student Affairs/Employment Officer is also responsible for organizing and conducting a high school liaison program as well as participating in career fairs and trade shows. Students and/or potential students are encouraged to contact the Student Affairs/Employment Officer at their campus to find out more about the services available.

LEARNING RESOURCE CENTER/LIBRARY
The Learning Resource Centers/Libraries are managed by professional staff and provide background and supplementary materials for all programs taught at the College. The growing collection includes books, AV materials, periodicals, newspapers, research and government documents. A small collection of recreational books is available.

Circulating materials have a two week loan period and non-circulating materials are available for use within the library. A system for fines is in place for overdue material.

STUDENT SUCCESS CENTERS
The Student Success Centers, located on some campuses, are an integral part of the Learning Resource Center in that they provide a place for students who seek remedial help especially in the areas of Mathematics and Communication Skills. These Centers also have a wide array of career resource materials including computer interactive Career Education programs such as CHOICES as well as a computerized job search program called the National Graduate Registrer (NGR).

BOOKSTORE
Textbooks for all courses are available at the College bookstore on each campus and should be purchased at the time of registration.

SOCIAL AND RECREATIONAL ACTIVITIES
The Student Affairs/Employment Officer organizes and co-ordinates a number of social and recreational events throughout the College year. Clubs, sport teams, recreational activities, and special events contribute to the general well-being of the College students.

STUDENT AID
Information and assistance is provided to students applying for student aid, such as Canada Student Loans.

STUDENT ACTIVITIES COUNCIL
Each Campus elects a Student Activities Council at the beginning of each academic year. This council is governed by a constitution and has responsibility for planning and organizing various extra-curricular activities on behalf of the student body. The council has a faculty advisor, usually one of the Student Service professionals.

COUNCIL OF STUDENT EXECUTIVES (CSE)
This is a student governance committee which has a student representative from each of the campuses of the College. These representatives are elected by their respective Student Councils. This Committee is responsible for ensuring that students will sit on all major College committees including the College Board of Governors.

CHAPLAINCY SERVICES
Chaplaincy services are available to students at the College. These services are available to students who may feel the need for spiritual counselling and can be provided upon request.

HARASSMENT POLICY
It is the policy of the College that all registered students have the right to pursue their studies and related activities free from personal harassment from College employees, agents of the College or other students. See the Student Handbook for the full description of this policy.

INSURANCE
Student 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, must be purchased by students. The premium is included in the registration fee.

When an accident happens, minor or otherwise, students should report immediately to their instructor who will take the necessary action.
It is the responsibility of the Campus Administrator to assure that appropriate procedures for reporting accidents are followed.

STUDENT CODE OF CONDUCT (RIGHTS AND RESPONSIBILITIES)
The College has a policy in place which respects the general rights of students and recognizes that students also have responsibilities. Please see the Student Handbook for details.

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

DAYCARE CENTRES
There are daycare centres located on the Corner Brook and Prince Philip Drive Campuses. These daycare centres are linked to the College's Early Childhood Education programs. Interested students can contact either of these campuses for further information.

LIAISON
The Student Services Division has an active recruitment team including Student Affairs/Employment Officers, Counsellors, and instructors. Members of this team make regular visits to high schools, career fairs and other community agencies.

STUDENT PARKING
Student Parking is considered a privilege and not a right. Students must park in the designated parking areas.

"No Parking" and "Restricted Parking" areas are designated either by a sign, road markings in yellow paint or both.

APPEALS
All registered students 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.

Student Housing

OFF-CAMPUS HOUSING

The College maintains at all campuses a list of boarding accommodations available at the Student Services Offices.

COLLEGE RESIDENCE

The College maintains residence facilities at the Bay St. George, Burin and Happy Valley-Goose Bay Campuses. Students wishing to apply for residence should apply directly to the Residence Office of the appropriate campus.

The Residence Office
Bay St. George Campus
P. O. Box 5400
Stephenville, NL
A2N 2Z6

The Residence Office
Burin Campus
P. O. Box 370
Burin Bay Arm, NL
A0E 1G0

The Residence Office
Happy Valley-Goose Bay Campus
P. O. Box 1720
Happy Valley-Goose Bay, NL
A0P 1E0

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 students have been confirmed in a program at the College

International

The College of the North Atlantic recognizes international education as an integral part of its mission and has a mandate to recruit international students and to export educational products and services. The College accepts its responsibility to prepare graduates for success in the global economy and as citizens of the world.

The College has established the Community, Corporate and International Services Division to fulfill its commitment to deliver world-class educational products and services internationally. The College brings to the world community a unique variety of human and technological resources with a sensitive and responsive approach to delivery that reflects the ability to manage change demanded in our own environment.

In the marketing of its programs and services, on the international level, the College invites applications from international students while at the same time seeks opportunities for Canadian students, staff and faculty to get involved in the development and delivery of international initiatives. The College places a high value on the contribution that international students make towards the development of effective intercultural communications skills throughout the College of the North Atlantic.

In fulfilling its international mandate the College welcomes international students to its campuses. The College is an active participant in the World University Services of Canada student refugee program and is a member of the Canadian Bureau for International Education.

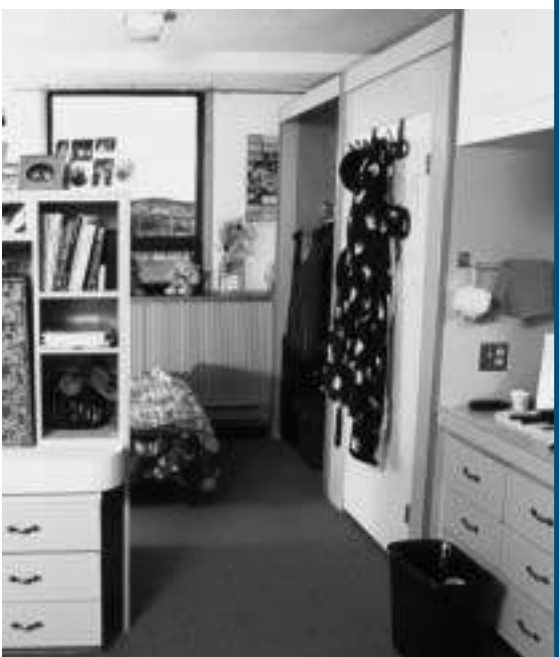
The College will deliver custom-designed products and services anywhere in the world, and is an active participant in the Association of Canadian Community Colleges and the Canadian College Partners Program which is funded by the Canadian International Development Agency. The College is particularly interested in opportunities to work on an international level in partnership with other colleges, private sector partners, and international financial institutions and has been or is currently involved in projects in Jamaica, Barbados, Peru, Tanzania, India, China, Libya, Egypt, Jordan, Thailand, Vietnam and Gaza/West Bank

Persons requiring additional information regarding custom-designed training, partnership, and other business development initiatives should contact:

Business Development Manager
Community, Corporate and International Services
College of the North Atlantic
1 Prince Philip Drive
P. O. Box 1693
St. John's, NL
Canada A1C 5P7
Telephone: (709) 758-7261
Fax: (709) 758-7505
E-mail: www.northatlantic.nf.ca/administration/international

International students who wish to receive an application package containing information on Canada, Newfoundland and Labrador and the College of the North Atlantic should contact:

Student Services Division
College of the North Atlantic
1 Prince Philip Drive
P. O. Box 1693
St. John's, NL
Canada A1C 5P7
Telephone: (709) 758-7290
Fax: (709) 758-7304
Email: intstudents@northatlantic.nf.ca
Web: www.northatlantic.nf.ca



@College Distributed Learning Service
dls.northatlantic.nf.ca

Distributed Learning involves using computers and telecommunications technology to make learning opportunities accessible to learners who are otherwise constrained by time and geography. This approach allows students and instructors to interact by way of a digital network from different locations at times which are more convenient for both.

DISTRIBUTED LEARNING SERVICES

The @College Distributed Learning Service is a fully integrated area of service in each of the College's 18 campuses. Aside from Internet-mediated and Web-based instruction, the service utilizes a mix of learning technologies and media to provide flexible access to some College programs and services. Access options for @College courses include:

- Home-based learning
- Campus-based learning
- Workplace learning
- Community Access Points
- Secondary School

Distributed Learning provides a support alternative approach to learning for individuals who are motivated, disciplined, independent learners who may not have the option of attendance at a campus.

As part of this Service, the College's pan-provincial Distributed Learning Center works with the public and private sector to nurture technology enabled learning and develop courseware for local and international markets.

ACCESS

Although most Distributed Learning courses include textbooks and other media, access to a computer and the Internet is essential. Students will need an Interned account and a computer which is configured for Internet and World Wide Web applications. Minimum requirements can be obtained from the website or by calling the Distributed Learning Center at (709) 466-0301 or 0306.

AVAILABLE COURSES

Currently, this service provides select credit and continuing education courses related to Business, Applied Arts, Engineering, Natural Resources, Health, Trades/Apprenticeship, and Information Technology. As new courses become available, they will be added to the on-line database on the website. Prior to the start of each semester, a course schedule will be advertised in the local newspapers.

For further information about specific courses offered through this service see the Course Descriptions section of the calendar or contact the Distributed Learning Service:
tel: 1-877-465-2250
email: learn@northatlantic.nf.ca
web: dls.northatlantic.nf.ca

Note: The following list of courses is subject to change. Course descriptions can be viewed online.

DISTRIBUTED LEARNING COURSES

AC1100	Bookkeeping I
AC1240	Financial Accounting
AC2100	Bookkeeping II
AC2230	Computerized Accounting
AC2240	Financial Accounting II
AC2250	Managerial Accounting I
AC3250	Managerial Accounting II
BL1330	Anatomy
CM1100	Communication Skills
CM1400	Communication Skills
CM2100	Workplace Correspondence
CM2200	Oral Communications
CM2300	Report Writing
CP1120	Introduction to Procedural Programming
CP1150	Visual Basic
CP1160	Introduction to the Internet
CP1400	website Analysis & Design
CP1450	Operating Systems
CP1510	Windows Operating Systems
CP2170	Windows Server
CP2190	Unix
CP2270	Java Programming
CP2280	Introduction to Object Oriented Programming in Java
CP2310	Electronic Spreadsheet Applications
CP2320	Microdatabase Applications
CP2370	Multi User Database
CP2440	Web Server I
CP2450	Web Server II
CP2460	CGI Programming
CP2480	Microcomputer Database Programming
CP2510	Unix Management
CP2610	Scripting Language
CP3200	Object Oriented Programming
CP3410	Fundamentals of Database Design
CP3420	Systems Analysis and Design I
CR1100	Network Fundamentals
CR1200	Computer Security
CR1450	TCP/IP
CR1500	Website Development
CR1550	Website Trends
DM1100	Document Production Fundamentals
DM1200	Document Production I
DM1201	Document Production II
DM1300	Machine Transcription I
DM1400	Medical Transcription I
DM1401	Medical Transcription II
DM2200	Document Production III
DM2201	Document Production IV
EC1700	Engineering Economics
EE1130	Curriculum Foundations
EE1140	Child Development I
EE1201	Child Development II
EE1240	Curriculum I
EE1250	Foundation of Positive Behaviour & Guidance
EE1300	Family Studies I
EE1400	Creative Activities I – Art
EE1401	Children's Literature (Creative Activities II)
EG1100	Engineering Graphics
EP1100	Entrepreneurial Studies
EP1110	Introduction to Business
EP2200	Business Planning
FH1100	Basic Nutrition
FH1310	Health, Safety & Wellness
FW1300	Fieldwork I (Summer Institutes)
HM2110	Menu Management
HM2240	Supervision
HN1200	Human Resource Management
HN2120	Recruitment Selection & Training
HS1120	Basic Foods
IC2100	Virtual Teams
IN2100	Introduction to Research Online
MA1100	Mathematics
MA1121	Mathematics
MA1400	Mathematics of Finance I
MA1500	Mathematics for Computers
MA1670	Statistics
MA2400	Mathematics of Finance II
MC1050	Introduction to Computers
MC1100	Computer Applications
MC1150	Productivity Tools
MC1151	Advanced Productivity Tools
MM2500	Computer Graphics
MN2400	Technology Project Management
MN2500	Customer Relations Management
MR1100	Marketing I
MR1210	Customer Service – Business
MR2100	Marketing II
MR2120	Internet Marketing
MR2350	Electronic Commerce
MU1110	Music and Culture
OF1100	Office Management I
OF1101	Office Management II
OF2300	MCP Billing
OF2400	Medical Office Management I
OF2401	Medical Office Procedures
PH1100	Physics
PH1101	Physics
PR2110	Project
PS1100	Psychology I (ECE)
PS1101	Psychology II (ECE)
PS1150	Psychology
PS1151	Psychology
PS2220	Developmental Psychology
PS2340	Organizational Behaviour
SC1150	Sociology
SC1160	Sociology
SD1630	Working in Health Care
SD1450	E-Business Career Development
TA1210	Normal Functional Movement
TA2110	Disabling Conditions
TA2210	Communication Disorders
TA2510	Psychiatric Disorders
TM1100	Medical Terminology I
TM2100	Medical Terminology II

Awards

The College offers opportunities to students in many programs to compete for a variety of scholarships, bursaries, prizes and graduation awards.

The College has four types of awards:

GRADUATION AWARDS

Governor General's Medal
The Governor General's Medal is awarded to a graduate who has achieved the highest academic standing at each district of the College. The student must be graduating from a two or three-year, diploma level program.

The President's Medal of Excellence
The College has established a President's Medal of Excellence to be issued to one student in each program who attains the highest academic standing in their program; the student will also receive a Certificate.

Scholarships
A monetary award presented in recognition of academic excellence.

Bursaries
A monetary award presented in recognition of academic performance and financial need.

Prizes
An award presented in recognition of performance in a particular subject area or task.

The Honour Society
The College has established an Honour Society to recognize those students who meet the following criteria:

1. those in diploma-level programs who have a grade point average (GPA) of 4.0
2. Those in industrial trades programs who have 80% or greater in each course. To be determined at completion of their program of studies.

Students who are registered under General Studies must be enrolled in at least four courses in any given semester and must achieve at least 80% in each course.

Office Administration and Business Administration are taught, at some campuses, by the individualized instruction methodology. In order to qualify for Honor Society status, students must have completed 16 credits or more in a given semester. Students in this category must achieve a GPA of 4.0 in order to qualify for the Honor Society.

Awards administered by the College are awarded upon the recommendation of the Award's Committee.

Application forms for awards administered by the College are available at the Student Services Office.

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

The deadline for receipt of applications for bursaries and other awards can be obtained at each campus Registrar's Office and is generally October 15.

CRITERIA FOR AWARDS:

a. No scholarship or bursary administered at the campus level 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.
b. To be eligible for any award, a student must be registered as a full-time student in a recognized College program.
c. The eligibility criteria for awarding a scholarship will be:
   - Candidates should be in clear academic standing with a GPA of at least 2.5.
   - At least 80% of the credits accumulated at the point of consideration for awards must have been obtained at the College.
   - Courses which are not included in the requirements for graduation will not be included in the calculation of the weighted average.
   - Candidates must have attained a passing grade in ALL courses being considered in establishing weighted average. Marks obtained in supplementary exams will be considered in the calculation of the weighted average.
   - In cases where the student repeats a course, the best earned grade will stand for calculation of the weighted average.
d. The eligibility criteria for awarding a prize or bursary shall be:
   - A candidate in the second or third year of a program must have attained a minimum GPA of 2.00 and have clear academic standing.
   - A candidate in a certificate-level program and in the first year of a diploma-level program must have attained a reasonable academic performance in their program of studies to date.

DOCUMENTATION

Awards administered by the College shall be recorded on the recipient's academic record.

AWARDS INFORMATION

The College publishes an annual Awards Handbook which is available from any campus. Awards information is also found on the College website: www.northatlantic.nf.ca

ACADEMIC, GENERAL, AND TRANSFER STUDIES

CERTIFICATE

- **One year**
- **Start date varies**
- **All Campuses**

ACADEMIC, GENERAL, AND TRANSFER STUDIES

Adult Basic Education

Adult Basic Education (ABE) is a high school equivalency program designed for adults who did not complete high school or who wish to upgrade their credentials in one or more subject areas.

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

Level II
Level II content is similar to that which is encountered in the junior high portion of the regular school program. A student who left school prior to Grade 10 in the regular system would normally be placed in Level II. Many students who have been out of the school system for a number of years also enroll in Level II to "brush up on the basics" before attempting Level III.

Level III
Level III content is similar to that which is encountered in Grades 10-12 in the regular school system. The graduation requirements for the program are as follows:

36 credits, including:

- Minimum of 6 Communication Skills
- Minimum of 6 Mathematics
- Minimum of 6 Science
- Minimum of 4 Employability Skills
- Maximum of 10 General Options
- May include equivalency credits
- May include maturity credits

Mathematics
Academic Stream
IM 2112 Algebra IV
IM 3213 Algebra V
IM 3216 Trigonometry
OR
Advanced Stream
IM 3219 Advanced Algebra III
IM 3222 Calculus Readiness
OR
General Mathematics
IM 3106 Business Mathematics I
IM 3222 Business Mathematics II

Communication Skills
IC 3211 Basic Grammar
IC 3112 Writing Skills
Plus one of:
IC 3116 Business Communications
IC 3215 Research Writing
IC 3222 Optional Literature
IC 3321 Thematic Literature

Science

Biology
IB 3113 Ecology
IB 3115 Evolution
IB 3214 Genetics
IB 3316 Human Systems

Chemistry
IH 3215 Chemical Bonding
IH 3116 Solution Chemistry
IH 3117 Rates, Reactions & Equilibrium
IH 3118 Acids & Bases

Physics
IP 3215 Mechanics I
IP 3216 Mechanics II
IP 3111 Electricity I
IP 3212 Electricity II

Science
IS 3212 Geology
OR
IS3214 Environmental Science

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

In order to enroll in an ABE Certificate Program, a student must be at least 17 years of age and out of the school system for at least one year.

College-University Transfer Year

The College-University Transfer Year has been developed through an agreement with Memorial University of Newfoundland which gives credit for specific College courses. All courses identified in this section are developed in collaboration with the respective departments of Memorial University of Newfoundland.

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 10 or more credits at the College of the North Atlantic.

The Transfer Year enhances student access to courses that earn both University and College credits. It provides opportunity for students to gain University course credit at locations close to their home communities. It allows students to choose career paths with minimum loss of credit for work completed.

ENTRANCE REQUIREMENTS

Provincial High School Graduation with 60% overall average in the following:

1. a. Language (1 credit) chosen from 3101, 3103 or 4121 and Literature (2 credits) chosen from Thematic Literature 3201 or Literary Heritage 3202
   OR
   b. English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from
   Advanced: 3201, 3205, 3211, 3215, 3221, 3231, 3271, 3281, 3291, 4225
   Academic: 3203, 3200, 3204, 3210, 3214, 3230, 3270, 3280, 3290
   AND
   2 credits chosen from
   Advanced: 2201, 2205, 2221, 2231, 2271, 2281, 2291
   Academic: 2203, 2200, 2204, 2230, 2270, 2280, 2290
3. Science (4 credits) two of which must be selected from
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 2212, 3230, 3272, 3282, 3292, 4222
   Earth Systems: 3213, 3209
4. Either Social Science (2 credits) chosen from:
   Global Economics 3103, 3133, 4128, 4129
   World History 3201 or 3231
   World Geography 3202
   Global Issues 3205
   Or Modern/Classical Language (2 credits) at the 3000 level
   French 3200, 3201, 3202, 3203, 4220, 3221
5. Electives
   Two credits at the 3000 level for those who complete 1.a.
   OR
   Three credits at the 3000 level for those who complete 1.b.

OR

Applicants who do not meet the educational prerequisites will be considered for admission based upon either the completion of a recognized High School equivalency program or the College's Mature Student Policy

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3112 plus one IC3321 or IC3222.
2. Mathematics… from one of the following sections:
   a. Mathematics IM3115, 3211, 3212, 3213, 3216
   b. Mathematics IM3218, 3219, 3221
3. Science… from one of the following sections:
   a. Biology IB3113, 3115, 3211, 3213A/B, 3214, 3316.
   b. Chemistry IH3111, 3112, 3113, 3114, 3116, 3117, 3118, 3215
   c. Physics IP3111, 3112, 3213, 3215, 3216
   d. Geology IS3212

see following pages for course descriptions»

DIPLOMA

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

COURSES

see following pages for course descriptions»

College-University Transfer Year Course Descriptions

NOTICE

All courses may not be available at all campuses.

BL1170 Biology

Transferable to MUN Biology 1001
This course is designated as an introductory Biology course. This course introduces the concepts of cell biology and processes, ecology, and taxonomy, and begins a survey of living things. Laboratory exercises focus on biological investigation techniques, cell structure and function, plant taxonomy, growth patterns and organs.

BL1171 Biology

Transferable to MUN Biology 1002.
This course is a continuation of BL1170. It is designed for students who wish to transfer to university after their second term. The course follows second term biology at Memorial University of Newfoundland (Bio 1002). This course continues with the survey of the Kingdoms begun in BL1170, looking at the anatomy, ecology, and taxonomy of Fungi and Animalia. It also introduces the student to the evolutionary history of animals and the structure and physiology of selected animal systems. Laboratory exercises focus on animal anatomy, evolution and physiology.
Prerequisite(s): BL1170 or MUN Biology 1101.

CH1130 Chemistry

Transferable to MUN Chem 1010.
This is an introductory course dealing with the fundamental laws of chemistry, the nature of matter and the physical states of matter, the structure of the atom, the electronic structure and the periodic table, significant figures and scientific notations, measurements and units, writing and balancing chemical reactions, stoichiometry an stoichiometric calculations, chemical bonding, gases and gas law calculations. Major topics include: matter and energy, atoms, molecules and ions, mass relations in chemistry (stoichiometry), reactions in aqueous solution, gases and osmotic pressure, electronic structure and the periodic table, covalent bonding (Lewis structures, molecular geometry, polarity of molecules and hybridization).
Prerequisite(s): None, but high school chemistry is recommended. Strong mathematical skills are required, and students with low marks in high school academic mathematics (less than 70%) are strongly recommended to upgrade their mathematics background before undertaking this course.

CH1131 Chemistry

Transferable to MUN Chem 1011.
This is a continuation of CH1130. This course will further develop the fundamental concepts of chemistry, with emphasis on thermochemistry, physical properties of matter, rate of reaction, gaseous chemical equilibrium, acid-based equilibria, precipitation equilibria and electrochemistry. Major topics are: Thermochemistry, physical properties of matter, rate of reaction, gaseous chemical equilibrium, acid-based equilibria, precipitation equilibria and electrochemistry.
Prerequisite(s): CH1130 or MUN Chem 1010

CH1140 Chemistry

Transferable to MUN Chem 1050.
This course is designed for students who have previously studied Chemistry either in high school or university. It is designed to give students a knowledge and understanding of the fundamental chemical concepts which will form the basis for further studies in the field of science. Major Topics are: matter – its properties and measurement, atoms and atomic theory, chemical compounds, chemical reactions, introduction of reactions in aqueous solution, gases and hydrogen, electrons in atom, the Periodic Table and some atomic properties, chemical bonding I: basic concepts, chemical bonding II: additional aspects, liquids, solids, and intermolecular forces, solutions and physical properties.
Prerequisite(s): At least 80% in high school Chemistry and a pass in high school advanced mathematics.
Co-requisite(s): MA1130 or MA2100. A physics course would be helpful, especially for students who did not take Physics in high school.

CH1141 Chemistry

Transferable to MUN Chem 1051.
This course is designed for students who may have career interests in chemistry or other fields of science. The course will develop further the fundamental concepts of chemistry, with emphasis on practical applications. It is designed to identify and apply principles as well as provide visualizing of their physical significance. Major topics are: chemical kinetics, principles of chemical equilibrium, acids and bases, addition aspects of acid-based equilibria, solubility and complex ion equilibria, spontaneous change; entroph and free energy, electrochemistry, descriptive chemistry.
Prerequisite(s): CH1140, MA1130 or MA2100, or MUN Chem 1050, Math 1000 or 1081.

CH1150 Chemistry

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

CM1120 English

Transferable to MUN English 1080.
An exploration of literary texts, which will include such forms as poetry, short fiction, drama and the essay. Emphasis is placed on critical reading and writing including analyzing texts, framing and using questions, constructing essays, organizing paragraphs, quoting and documenting, revising and editing.
Prerequisite(s): Minimum of 60% in Language 3101 and a minimum of 60% in either Thematic Literature 3201 or Literary Heritage 3202.

CM1135 English

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

CM1145 English

Transferable to MUN English 1110.
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 English

Transferable to MUN English 1102.
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 English

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

EC1140 Microeconomics

Transferable to MUN Economics 2010.
This is a course in Microeconomics that is intended to prepare a student to take additional courses in economics which make use of Microeconomic tools of analysis. In addition, the subject matter of this course will help in understanding some of the concepts, problems, and arguments, that are presented in other courses or in the public press. In this course the student will develop a set of tools of analysis that will provide insight into what is involved in the decision making process, realize implications that may not be readily apparent to the general public, and be situated in a position to more readily ask relevant questions concerning diverse initiatives. The course will cover the following topics: scarcity and opportunity cost, demand and supply, elasticity, household demand, marginal utility, indifference curves, production functions, short-run and long-run cost functions, perfect competition in the short-run and in the long-run monopoly.

EC1150 Economics

Transferable to MUN Economics 2011.
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.

EH1100 Earth Sciences
Transferable to MUN Earth Sciences 1000.
A survey of major earth systems, including the interior of the earth, lithosphere, hydrosphere, atmosphere, and biosphere – their structure, composition and interaction.

EH1101 Earth Sciences
Transferable to MUN Earth Sciences 1001.
The evolution of the Earth's structure and environment through geological time are explored from the rock and fossil record. Particular emphasis is given to the geological history of North America, especially Newfoundland and Labrador.
Prerequisite(s): EH1100 or MUN Earth Sciences 1000.

EL1420 French
Transferable to MUN French 1500.
This is an introductory course for students with little or no previous knowledge of French and for those who wish to review the basic vocabulary and structure. The course uses only the present tense and a 500-word vocabulary, and covers the most common situations of daily life.

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

EL1440 French
Transferable to MUN French 1502.
This course introduces ways of dealing with future and hypothetical "What if…?" situations, and cases where emotion and personal feelings color the issue. The work of composition and intensive vocabulary building continues, and students are expected to engage in more advanced oral practice.
Prerequisite(s): EL1430 or MUN French 1501.

MA1100 Mathematics
No MUN equivalent.
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
Prerequisite(s): Level III Academic Mathematics.

MA1104 Mathematics
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. Major topics include: fundamentals of algebra, functions and their graphs, exponential and logarithmic functions, trigonometry, analytical trigonometry, polynomials and rational functions.
Prerequisite(s): MA1100; at least 75% in Level III Advanced Mathematics or at least 95% in Level III Academic Math.

MA1120 Mathematics
Transferable to MUN Mathematics 1050.
This course is designed to satisfy part of the first year mathematics requirement for prospective teachers in primary and elementary education programs. This course is also suitable for students headed into a non-science area of study.
Prerequisite(s): Level III Academic or Advanced Mathematics.

MA1121 Mathematics
Transferable to MUN Mathematics 1051.
This course is designed to satisfy part of the first year mathematics requirement for prospective teachers in primary and elementary education. This course is also suitable for students headed into a non-science area of study.
Prerequisite(s): Level III Academic or Advanced Mathematics.

MA1130 Mathematics
Transferable to MUN Mathematics 1000.
An introduction to differential calculus including logarithmic, exponential, and trigonometric functions with applications. A brief introduction to integration.
Prerequisite(s): Pass in Level III Advanced Mathematics.

MA1131 Mathematics
Transferable to MUN Mathematics 1001.
An introduction to integral calculus with applications.
Prerequisite(s): MA1130 or MUN Math 1000.

PH1120 Physics
Transferable to MUN Physics 1020.
An introductory course designed to extend students knowledge and understanding of the basic concepts, principles and applications of mechanics. Topics covered include: kinematics in one and two dimensions, vectors, dynamics, equilibrium, work and energy, and linear momentum.
Prerequisite(s): Level III Academic mathematics with a minimum mark of 70%, or a pass in Advanced Mathematics, or successful completion of PH1010.

PH1121 Physics
Transferable to MUN Physics 1021.
This introductory course is a continuation of PH1120. Topics covered are: fluids, vibrations and waves, sound, electric charge and electric field, electric potential and potential energy, electric current, D.C. circuits and instruments, magnetism and geometrical optics.
Prerequisite(s): PH1120 or MUN Physics 1020.

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

PS1151 Psychology
Transferable to MUN Psychology 1001.
An introduction to psychological theory and research in the areas of human cognition and emotion, motivation, personality, psychological disorders and treatment, social psychology, health and stress, and sexuality.
Prerequisite(s): PS1150 or MUN Psychology 1000.

SC1150 Sociology
Transferable to MUN Sociology 1000.
This course introduces the concepts, principles and topics of sociology. The theoretical foundations of modern sociology are examined. The works of such social theorists as Karl Marx, Emile Dukheim and Max Weber are studied in conjunction with 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, collective behaviour, groups and organizations, social stratification, deviance and crime, race and ethnicity, sex and gender, and work and the economy.

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

CERTIFICATE (LEVEL OF ATTAINMENT)

- **One year**
- **Start date varies**
- **Prince Philip Drive Campus**
- **Note:** This program will operate with continuous intake/exit from September to June.

COURSES

CODE	TITLE	
Level I		**Hrs**
EO1100	Beginner Speaking	90
EO1200	Beginner Listening	150
EO1300	Beginner Reading	75
EO1400	Beginner Writing	60
Level II		**Hrs**
EO1101	Intermediate Speaking I	120
EO1201	Intermediate Listening I	120
EO1301	Intermediate Reading I	75
EO1401	Intermediate Writing I	60
Level III		**Hrs**
EO2100	Intermediate Speaking II	90
EO2200	Intermediate Listening II	90
EO2300	Intermediate Reading II	120
EO2400	Intermediate Writing II	75
Level IV		**Hrs**
EO2101	Advanced Speaking I	30
EO2201	Advanced Listening I	75
EO2301	Advanced Reading I	120
EO2401	Advanced Writing I	105
Elective #1		45
Level V		**Hrs**
EO3100	Advanced Speaking II	30
EO3200	Advanced Listening II	75
EO3300	Advanced Reading II	90
EO3400	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.

English as a Second Language

College of the North Atlantic offers an 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 and Intermediate 2, Advanced 1 and Advanced 2. 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 serve the general language needs of students of any nationality.
2. To support the language needs of students destined for other college programs.
3. To prepare students for participation in Canadian culture.

ENTRANCE REQUIREMENTS

Students who meet entrance requirements and have been admitted to another college program and need ESL training will be automatically admitted to the ESL Program. Students who have not been admitted to another college program must be 17 years of age at the commencement date of the program. Assessments will include an interview to sample reading, writing, speaking and listening skills; CanTEST; Canadian Language Benchmarks; as well as other internal assessments. Entry assessment will indicate each student's starting point in each of the four language skills of reading, speaking, listening and writing. 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.

COURSE DESCRIPTIONS

EO1100 Beginner Speaking

Using a communicative approach, this learner-centered ESL course focuses on developing speaking skills 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.

EO1101 Intermediate Speaking I

Using a communicative approach, this learner-centered ESL course focuses on developing speaking skills to Canadian Language Benchmark 6. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable speaking for a variety of tasks.
Prerequisite: EO1100

EO1200 Beginner Listening

Using a communicative approach, this learner-centered ESL course focuses on developing listening skills 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.

EO1201 Intermediate Listening I

Using a communicative approach, this learner-centered ESL course focuses on developing listening skills 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: EO1200

EO1300 Beginner Reading

Using a communicative approach, this learner-centered ESL course focuses on developing reading skills 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.

EO1301 Intermediate Reading I

Using a communicative approach, this learner-centered ESL course focuses on developing reading skills 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: EO1300

EO1400 Beginner Writing
Using a communicative approach, this learner-centered ESL course focuses on developing writing skills 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.

EO1401 Intermediate Writing I
Using a communicative approach, this learner-centered ESL course focuses on developing writing skills 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: EO1400

EO2100 Intermediate Speaking II
Using a communicative approach, this learner-centered ESL course focuses on developing speaking skills to Canadian Language Benchmark 7. While special emphasis will be placed on speaking, all language skills will be integrated. Speaking objectives are presented in a culturally meaningful and thematic context to enable proficiency in a variety of tasks.
Prerequisite: EO1101

EO2101 Advanced Speaking I
Using a communicative approach, this learner-centered ESL course focuses on developing speaking skills 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 by enrollment in a College credit course.
Prerequisite: EO2100

EO2200 Intermediate Listening II
Using a communicative approach, this learner-centered ESL course focuses on developing listening skills 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: EO1201

EO2201 Advanced Listening I
Using a communicative approach, this learner-centered ESL course focuses on developing listening skills 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 by enrollment in a College credit course.
Prerequisite: EO2200

EO2300 Intermediate Reading II
Using a communicative approach, this learner-centered ESL course focuses on developing reading skills 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: EO2300

EO2301 Advanced Reading I
Using a communicative approach, this learner-centered ESL course focuses on developing reading skills 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 by enrollment in a College credit course.
Prerequisite: EO2301

EO2400 Intermediate Writing II
Using a communicative approach, this learner-centered ESL course focuses on developing writing skills to Canadian Language Benchmark 7. While special emphasis will be placed on writing, all language skills will be integrated. While objectives are presented in a culturally meaningful and thematic context to enable the production of uncomplicated writing for a variety of tasks.
Prerequisite: EO1401

EO2401 Advanced Writing I
Using a communicative approach, this learner-centered ESL course focuses on developing writing skills 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 by enrollment in a College credit course.
Prerequisite: EO2400

EO3100 Advanced Speaking II
Using a communicative approach, this learner-centered ESL course focuses on developing speaking skills 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 by enrollment in College credit courses
Prerequisite: EO2101

EO3200 Advanced Listening II
Using a communicative approach, this learner-centered ESL course focuses on developing listening skills 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 by enrollment in College credit courses
Prerequisite: EO2201

EO3300 Advanced Reading II
Using a communicative approach, this learner-centered ESL course focuses on developing reading skills 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 by enrollment in College credit courses
Prerequisite: EO2301

EO3400 Advanced Writing II
Using a communicative approach, this learner-centered ESL course focuses on developing writing skills 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 by enrollment in College credit courses
Prerequisite: EO2401

- Length varies
- Start date varies
- All Campuses

Special Services

Services & Programs for Persons with Disabilities

All campuses at College of the North Atlantic will offer inclusive programming to all students who apply. The College recognizes the ultimate purpose of training will be the eventual integration of all persons into the mainstream of post-secondary education, the community and society. To this end, the College has developed a four stage service delivery model that will complement current college operations, and increase service delivery to a wide range of students in specific areas. In addition, this model will allow College of the North Atlantic to respond to students in cases where their special needs are identified after registration.

STAGE 1
REGULAR COLLEGE CURRICULUM, PROGRAMS, & COURSES

Applicants who meet entrance requirements and do not request "Accommodation" on the application form.

Stage 1 includes all courses and programs offered by the College at all campuses. This stage is intended for all students and is based on the rationale that for some students with special needs the regular College curriculum at the campus they are enrolled in will be sufficient to meet their needs, interests and abilities. An example of students in Stage 1 could include a student with a physical disability who is a wheelchair user and can access regular College programs without support.

STAGE 2
REGULAR COLLEGE CURRICULUM, PROGRAMS, & COURSES WITH SUPPORTS

Applicants who meet entrance requirements and request "Accommodation" on application form.

Stage 2 focuses on providing support to students pursuing a regular College curriculum. Based on the regular curriculum, decisions are made regarding accommodations (adaptations to learning resources and instruction, adaptations to learning environment, instructional techniques, evaluation procedures, etc.) to support individual student needs. Making accommodation does not mean adding, deleting, or altering course objectives or changing the curriculum. College of the North Atlantic intends to provide the student an opportunity to master the curriculum.

STAGE 3
MODIFIED COLLEGE CURRICULUM, PROGRAMS, & COURSES

Applicants who do not meet entrance requirements and request "Accommodation" on application form.

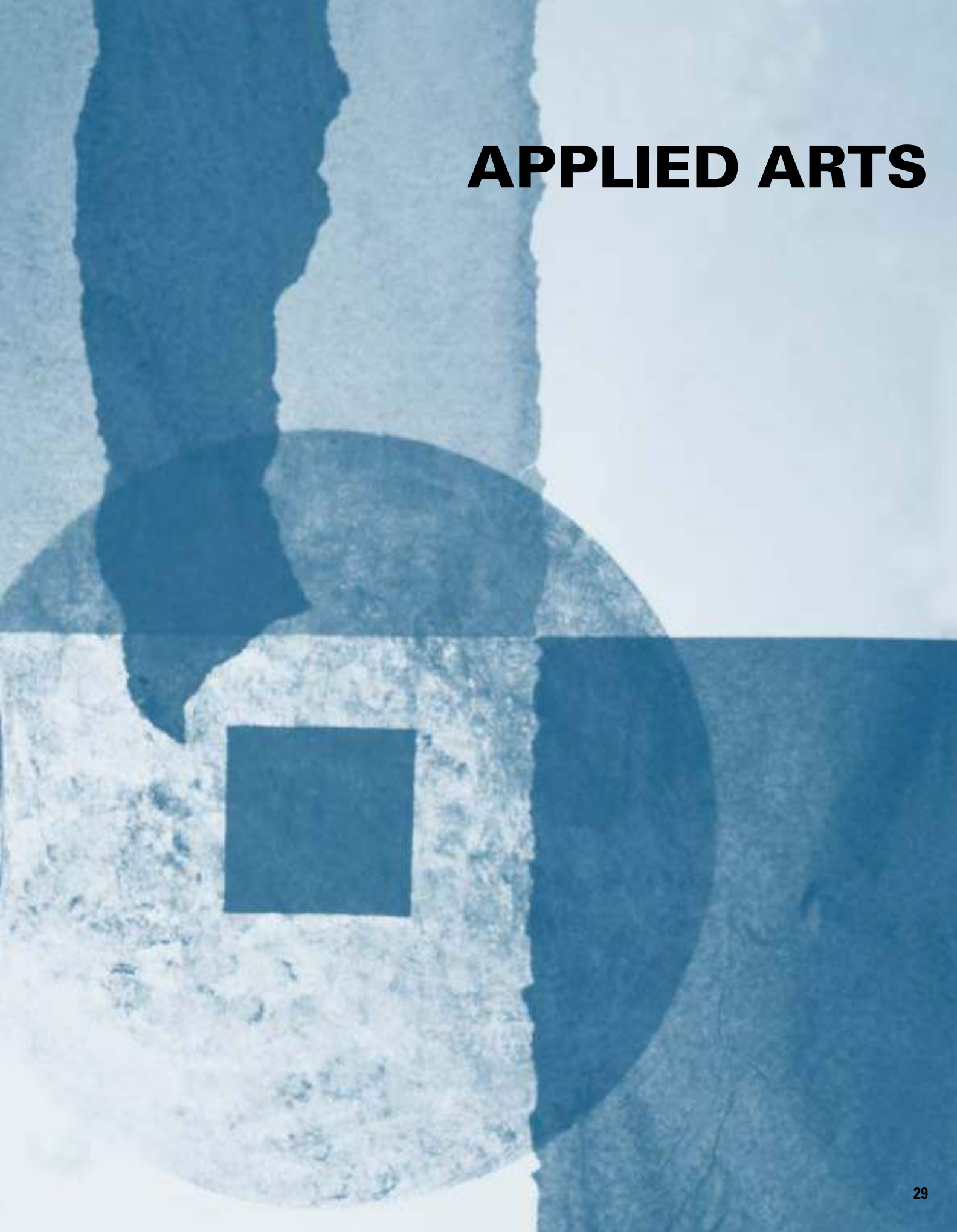
Stage 3 involves the actual changing of course objectives to meet the needs of a student with special needs. The individualized curriculum will be developed and decided by the Individual Support Service Planning Team (ISSPT). Students who complete a modified program will receive a Record of Achievement to document their areas of competency. Students applying for admission to Stage 3 should possess appropriate documentation outlining their needs to be submitted with their application, and follow an admissions process that ensures the necessary modified curriculum with supports be in place prior to entry to the College of the North Atlantic.

STAGE 4
ALTERNATE COLLEGE CURRICULUM

Applicants who do not meet entrance requirements and request "Accommodation" on application form.

Stage 4 consists of a curriculum based on students with special individual needs, as they relate to employability and career goals. This individualized curriculum (Employability Skills Training) is decided on and developed by an ISSP team. The alternate curriculum does not include regular courses, but rather areas that need to be developed based on the student's needs. Students applying for admission to Employability Skills Training should possess appropriate documentation outlining their needs to be submitted with their application and follow an admissions process that ensures the necessary curriculum with supports be in place prior to entry to College of the North Atlantic.

APPLIED ARTS



DIPLOMA

- **Two years**
- **September start**
- **Prince Philip Drive Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1100	Communication Skills	3	3	0
FH1200	Principles of Physical Activity	3	3	0
FW1700	Supervised FieldWork Experience I	3	2	8
MC1150	Productivity Tools	4	3	2
RS1100	Introduction to Community Recreation	3	3	0
RS1280	Program Planning	2	2	1
RS1230	Creative Activities In Recreation	3	2	2
Semester 2		**Cr**	**Le**	**La**
AC1100	Bookkeeping I	4	3	2
CM2100	Communications	3	3	0
FW1701	Supervised FieldWork Experience II	3	2	8
PS2340	Organizational Behaviour	4	4	0
RS1250	Introduction to Recreation Activities	3	2	2
RS1450	Intro to Therapeutic Recreation	3	2	3
Semester (Intersession)		**Cr**	**Le**	**La**
FH1230	Physical Activity Programming for Older Adults	3	2	2
RS1370	Recreation Activities	3	2	3
Semester 4		**Cr**	**Le**	**La**
CM2200	Oral Comm.	2	2	0
FW2700	Supervised FieldWork Experience III	3	2	8
HN1200	Human Resource Management	3	3	1
RS1240	Recreation Activities III	3	2	2
RS1320	Recreation Administration	3	2	1
RS1400	Community Agencies	3	3	0
RS1440	Recreation Facilities	3	3	1
Semester 5		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
FW2701	Supervised Fieldwork Experience IV	3	2	8
MN1410	Special Events Management	4	4	0
MR2110	Marketing Methods & Promotional Media	3	3	0
RS1460	Gerontology & Recreation Programming	3	2	3
RS1520	Risk Management In Recreation	3	3	0
RS1530	Therapeutic Recreation Program Design Service Delivery	4	4	0

Students must possess a valid First Aid Certificate and Basic Cardiopulmonary Resuscitation Certificate prior to being placed in a supervised fieldwork experience

Hours per week may vary to accommodate supervised fieldwork experience schedule.

APPLIED ARTS

Community Recreation Leadership

The two-year program, Community Recreation Leadership, has been developed in response to an increasing awareness of the technological and societal changes in modern society that influence people's leisure time, pursuits, retirement, and in recognition of 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 both 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. The accumulated costs for these materials and activities will be outlined prior to registration.

OBJECTIVES

1. To provide training in various recreational pursuits appropriate to the rural and urban areas of the Province.
2. To provide training in program planning and in the use and management of recreational facilities.
3. To foster an appreciation of the nature of community life, including geographic structure, economic and social factors, and government controls.
4. To foster an appreciation of the various groups within a community and their particular recreational needs (includes preschool and school-aged children, youth, adults and senior citizens).
5. To provide leadership training to enable personnel to:
   a. exercise initiative in the development of leisure time activities.
   b. recognize and help strengthen established community activities.
   c. organize and stimulate growth at the community level.

CURRICULUM

1. General Education: English (oral and written), social sciences psychology, accounting, computers).
2. Specific Recreational Activities: Outdoor: cross-country skiing, camping, canoeing, hiking, technical level I coaching in any sport. Indoor: creative activities, physical activity programming, racquet sports.
3. Technical Training: Problem solving, supervision and administration of recreational programs, facility development and maintenance, computer training.
4. Field Work: Supervised field work experience as a regular course in the total program. This is scheduled in BLOCK FORM for each semester. The schedule for the winter semesters may coincide with the Easter break.

EMPLOYMENT OPPORTUNITIES

The graduate is awarded a Diploma in Community Recreational 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 the YMCA/YWCA, municipal recreation agencies, the Provincial Department of Recreation, boys and girls clubs, senior citizen homes, and agencies providing 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:
1. Acadia University
2. Dalhousie University
3. Memorial University
4. Concordia University
5. University of New Brunswick
6. Lakehead University
7. University of Ottawa

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI public examinations pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average pass mark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Note: To participate in certain Field Placements, a Certificate of Conduct will be required. This certificate can be obtained from the Royal Newfoundland Constabulary (RNC) or the Royal Canadian Mounted Police (RCMP).

Community Studies

The Community Studies Program is a two-year diploma program which prepares students for challenging roles in community-based agencies and as community leaders. More specifically, the program focuses on leadership and other career-related skills which are required for work in a wide variety of Human Services professions. These may range from one-on-one support and counselling roles 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 the community. Students are challenged to think critically and to become self-directed, lifelong learners.

Students in Community Studies experience a first semester in which they acquire general knowledge and skills fundamental to the human services field. Throughout the first year, students receive career counselling to assist them in making course selections which are best suited to their particular career choices. The program provides flexibility to allow students to select a combination of courses which will qualify them for work in a variety of areas of Human Services. To this end, students may choose courses from a number of the following areas: Addictions, Community Economic Development, Disability Studies, Healthy Aging, International Studies, Women's Studies, and Youth and Adult Corrections. Based on the particular combination of courses selected, students may reasonably expect to find employment with a variety of agencies including: economic and social development agencies, facilities for youth or adult offenders, social programs for older adults, supports and services which support inclusion of persons with disabilities, international development agencies/projects, services for women, or dependency treatment programs.

Graduates who wish to further their education after graduation may choose to transfer credits to the Bachelor of Community Studies Program at the University College of Cape Breton. 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.

FUTURE OPPORTUNITIES

Graduates of the program may reasonably expect to obtain employment with a variety of community-based groups and agencies such as:

a. Economic development boards, municipalities, community-based entrepreneurial ventures, and social development agencies
b. Service and advocacy groups for persons with disabilities such as residential services, employment corporations, schools, and Associations for Community Living.
c. Community-based corrections service and advocacy groups such as assessment centres, group homes, outreach services, and dependency treatment centres.

PROGRAM OBJECTIVES

1. To develop the student's interpersonal and leadership skills and abilities.
2. To provide the student with knowledge of human and group dynamics.
3. To develop the student's ability to organize and facilitate specific target groups as well as the regional community as a whole.
4. To develop the student's understanding of the importance of human relations as a tool for facilitating positive growth and change.
5. To assist the student in acquiring and utilizing a variety of public relations skills, abilities and techniques.
6. To enhance the student's ability to perform the role of change agents with individuals, groups and regional communities.
7. To increase the student's skills in effective oral and written communication.
8. To give the student direct work experience with community-based agencies.
9. To assist the student in acquiring skills and a knowledge related to working within their chosen area(s) of human services.

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI public examinations pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average pass mark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

PRACTICUMS

Students must complete two practicums during their program of studies.

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
SC1120	Sociology I	3	3	0
PS1100	Psychology I	2	2	0
MC1150	Productivity Tools	4	3	2
HR1200	Intro. To Human Services	3	3	1
HR1100	Human Relations	4	4	0
CM1450	Writing Fundamentals for the Workplace	3	3	0
CS0000	Community Studies Elective			
Semester 2		**Cr**	**Le**	**La**
CM2100	Workplace Correspondence	3	3	0
CS0000	Community Studies Elective			
PS1101	Psychology II	2	2	0
SC1121	Sociology II	3	3	0
CS1110	Leadership Skills I	5	4	2
CS0000	Community Studies Elective			
EL0000	General Elective	3	3	0
Semester 3 (Intersession)		**Cr**	**Le**	**La**
FW1440	Field Placement I	4	4wks	
CS2410	Crisis Intervention Skills	3	3	0
SD1130	Field Preparation	1	1	0
Semester 4		**Cr**	**Le**	**La**
CS2100	Leadership Skills II	4	4	0
CS2200	Interviewing Skills	4	4	0
CS0000	Community Studies Elective			
FW1441	Field Placement II	7	7wks	
Semester 5		**Cr**	**Le**	**La**
CS2101	Leadership Skills III	4	4	0
CS0000	Community Studies Elective			
CS0000	Community Studies Elective			
EL0000	General Elective			
ME1110	Media Appl. & Public Relations	4	4	0
CS0000	Community Studies Elective			
CS2500	Project Management	3	3	0

"Electives" for Concentrations

CD2100	Community Development
CD2300	Community Economic Development
CD2310	Financing and Managing CED
EP1100	Entrepreneurship
EC1400	Newfoundland and Labrador Economy
EC2410	Economic Geography
MR1100	Marketing
DB2100	Introduction to Disabilities
DB2110	Issues in Disabilities
DB2300	Program Planning
PS1360	Behaviour Management
PS2200	Developmental Psychology
AC1100	Bookkeeping
CJ2100	Canadian Criminal Justice System
CJ2101	Canadian Criminology
CJ2200	Youth Justice
CJ2400	Special Populations
CJ2410	Case Management
CS2300	Research Methods
CJ2700	Self-Directed Learning
PS1200	Drugs and Behaviour
CS1700	Study Trip
SC1300	Women's Studies
SC1301	Women's Studies
EL1270	International Issues
PS1230	Understanding Addictions
SC1240	Healthy Aging

DIPLOMA

- **Two years**
- **September start**
- **Bay St. George Campus**
- **Note:** The first year of this program is offered every alternate year. The next first year intake will be in September 2004.

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM2200	Communications	2	2	0
VA1100	Drawing I	3	3	0
MM2500	Computer Graphics I	3	2	2
VA1350	3D Modeling	3	2	2
VA3200	Introduction to Classical Animation Techniques	3	2	3
MM2610	Introduction to 3D Animation	4	3	2
MM1800	Storytelling and Animatic Design	3	3	0
Semester 2		**Cr**	**Le**	**La**
MM2660	3D Character Modeling	4	3	2
MM2550	3D Texture and Digital Paint	4	3	2
CM1560	Creative Writing	3	3	0
MM2300	Digital Audio Techniques	3	2	2
MM2310	Digital Video Techniques	3	2	2
VA1150	Animation Drawing I	3	2	2
EP1100	Entrepreneurial Studies I	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MM2760	Animation Design Project*	4	2	20

*Hours per week adjusted to accommodate six-week period.

Semester 4		**Cr**	**Le**	**La**
MM2680	3D Character Animation	5	3	6
MM1300	Media Acquisition Digitizing & Editing	2	1	2
MM1950	Workplace Professionalism	3	3	0
MM2501	Computer Graphics 3D	3	2	2
MM2700	Multimedia Lab I	2	1	2
VA3100	Life Drawing I	3	2	3
Semester 5		**Cr**	**Le**	**La**
VA3550	Screening & Peer Critique	3	2	3
MM2750	Special Topics	3	2	2
MM2710	Multimedia Lab II	1	0	2
CP4470	Emerging Trends	3	2	2
MM2830	3D Post-Production & Visual FX	4	3	2
MM2850	Digital Compositing	4	3	2
MM2900	Portfolio Development	3	2	3

APPLIED ARTS

Digital Animation

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

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

EMPLOYMENT OPPORTUNITIES

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

OBJECTIVES

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

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI Public Examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the General or Academic Stream with an average passmark of 60%.
OR
Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

Credit: Cory Sheppard

APPLIED ARTS

Early Childhood Education

Early Childhood Education is a two-year diploma program that is designed to prepare students to work in a variety of child care services. These studies will include key understanding of child development, the child in the family and community, and developmentally appropriate practices. An emphasis is placed on developing tools for successful lifelong learning, which will prepare students to respond to the changing needs of parents, children, and the community.

OBJECTIVES

1. To provide quality child care training which meets the regulations of the Department of Health and Community Services in Newfoundland and Labrador, and other provinces in Canada.
2. To demonstrate knowledge of typical and atypical child growth and development when working with individual children and groups of children from birth to school age.
3. To analyse and interpret systematic observations of child development as the basis for planning for individual children.
4. To design play environments for children (birth to school age).
5. To plan developmentally appropriate programs for children (birth to school age).
6. To build supportive partnerships within child care environments, the ECE field, and the broader community.

CURRICULUM

1. Specialized Training: Early Childhood Education (principles, development, programming, supervision), creative activities, health and nutrition.
2. Field Work: Students will be assigned to the Children's Centre located on the campus. On-the-job experience will also be provided through placement with external agencies offering child care services.
3. General Education: Communications (oral and written), budgeting, psychology and community resources.

The Graduate Certification: The graduate is awarded a Diploma of Applied Arts in Early Childhood Education. This certifies successful completion of two years of post-secondary education, combining theory and practical experience in the care and guidance of young children. Completion of this program is one of the steps towards provincial ECE certification. Currently, the ECE diploma is awarded Level II certification for both preschool and school age children.

Major Areas of Emphasis: Throughout the training period, emphasis will be given to the factors that contribute to the social, psychological and physical development of young children. This will be accomplished through enrichment of communication skills, case studies, personal experiences in individual and group settings, as well as studies of literature pertaining to child development.

General Areas of Competency: The graduate from this program will be prepared for employment with public and private agencies caring for young children and, with experience, be able to develop programs and/or supervise day care centres in communities throughout the province.

ENTRANCE REQUIREMENTS

1. A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent. **OR**
   Grade XI Public Examination pass or equivalent with a 60% average or equivalent,
   OR
   An Adult Basic Education Graduation Certificate indicating completion of the General or Academic Stream with an average passmark of 60%,
   OR
   Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.
2. A health certificate is required. A Certificate of Conduct must be obtained from the Royal Newfoundland Constabulary (RNC) or the Royal Canadian Mounted Police (RCMP).

Note: Students must possess a valid St. John Ambulance Emergency First Aid Certificate to be eligible for a Diploma of Applied Arts in the Early Childhood Education Program.

BLOCK PLACEMENT

The academic program on campus will be adjusted in order that each student may complete four blocks of fieldwork working full time in a licensed day care centre or children's agency. Placements will be approved and supervised by College staff.

DIPLOMA

- **Two years**
- **September start**
- **Corner Brook and Prince Philip Drive Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
MC1050	Introduction to Computers	2	2	0
EE1130	Curriculum Foundations	4	4	0
EE1140	Child Development I - Observation	4	4	0
EE1250	Foundation of Positive Behaviour Guidance	2	2	1
EE1400	Creative Activities I - Art	2	1	3
FH1310	Health, Safety & Wellness	3	3	0
FW1300	Fieldwork I	3	1	7
Semester 2		**Cr**	**Le**	**La**
EE1201	Child Development II	6	6	0
EE1240	Curriculum I	4	4	0
EE1300	Family Studies I	3	3	0
EE1401	Creative Activities II – Literature	2	1	3
FW1301	Fieldwork II	3	1	7
EE1710	Professional Development	2	2	0
CM2100	Communications	3	3	0
Semester 3 (Intersession)		**Cr**	**Le**	**La**
EE1260	Infant & Toddler Care	2	2	1
EE1301	Family Studies II	3	3	0
EE2430	Creative Activities IV – Movement	2	2	1
HR1300	Human Relations	2	2	0
Semester 4		**Cr**	**Le**	**La**
EE1241	Curriculum II	5	5	0
EE2200	Child Development III	4	3	2
EE2250	Advanced Behaviour Guidance Strategies	2	2	0
EE2300	Family Studies III	3	3	0
EE2420	Creative Activities III – Music	3	2	2
FH1110	Nutrition I	2	2	1
FW2300	Fieldwork III	3	1	7
Semester 5		**Cr**	**Le**	**La**
FH1111	Nutrition II	3	2	2
EE1510	Current Research & Issues Seminar	4	4	0
EE2201	Child Development IV	4	3	2
EE2260	Child Care Administration	3	2	2
EE2301	Family Studies IV	3	3	0
FW2301	Fieldwork IV	3	1	7

DIPLOMA

- **Length of program varies**
- **Start date varies**
- **Prince Philip Drive Campus**

APPLIED ARTS

Early Childhood Education by Distance Education

For those who are currently employed as early childhood educators and would like to upgrade to a diploma, the ECE diploma program is also available through distance education. Staff of child care centres throughout the province can study from their own homes. Course manuals, videos and selected resource readings are compiled for each course. Students register each semester from a list of course offerings. Due dates for assignments and tests guide student learning. Opportunities for seminars and discussion take place by teleconference as well as during summer institutes.

PRIOR LEARNING ASSESSMENT

Incorporated in this program is a portfolio development course which is a systematic process of documenting the knowledge, skills and attitudes an individual has learned from prior work/life experiences, education and training. This learning can be used to challenge toward specific learning outcomes in the early childhood education program. For further information about prior learning assessment, refer to the calendar.

CERTIFICATION

As students progress through their diploma program they will be eligible to apply for certification through the Association of Early Childhood Educators - Newfoundland and Labrador for equivalency to Level I certification approximately half way through their training, and upon completion, will receive Level II certification standing. Also upon completion students will be awarded a Diploma in Early Childhood Education.

ENTRANCE REQUIREMENTS

Students should have minimally two years of work experience in a child care setting and meet the entrance requirements for mature students. High school graduation is recommended for successful completion of course work, however some remedial assistance is available for those students requiring additional help.

LOCATION

The distance education program is available province-wide with summer institutes held at the Prince Philip Drive campus, St. John's.

PROGRAM OF STUDIES

Continuing education recognizes that mature individuals bring a wealth of knowledge to their studies and that education must be responsive to their needs. For this reason this program is presented in a learning outcomes format. This means that the program of studies is designed to reflect the knowledge, skills and attitudes of practising early childhood educators in order to provide developmentally-appropriate programs for young children.

Courses are offered according to each student's individual education plan. Course tutors and student advisors are available to provide support to students on an individual basis towards completion of each course and overall diploma program.

The program is designed around nine general learning outcomes which reflect the responsibilities of working in early childhood education.

The nine general areas are:
Apply Theories of Child Development
Develop the Children's Environment
Promote Children's Health, Safety, & Wellness
Provide Developmentally-appropriate Activities
Guide Children's Behaviour
Interact with Families
Assist in Administration
Conduct One's Self Professionally.

SUMMER INSTITUTES

Students in the distance education program will be required to complete four practicum institutes on site at the college. Each institute is three weeks in duration, and students will participate in seminars, demonstrations, workshops and field placement. An important component of work in child care is developmentally-appropriate practice, therefore there will be performance evaluation of all general areas of competence. Some of this will take place during field placement in summer institutes. Qualified instructors will also visit each student in their place of employment for further assessment of their practice.

CREDIT TRANSFER INVOLVING EARLY CHILDHOOD EDUCATION PROGRAM

The following table provides an overview of current credit transfer arrangements with the Early Childhood Education Diploma program.

The modular format developed for the distance education delivery method is derived from the competencies and learning outcomes of the full-time program. The distance program provides for students to work through an individualized education plan for their course work with the assistance of a tutor. This self-paced program provides the flexibility which assists students in managing studies with work and family responsibilities. There is an on-site requirement to complete three summer institutes for practical workshops, seminars and field placement.

In order to complete assignments in the distance program students must have regular access to an early childhood setting. Students may choose to take a Portfolio Development Course and challenge for prior learning assessment credits based on the learning acquired through work/life experiences. This course is designed for the mature adult learner, and the experienced early childhood educator.

Note: Readers are advised the following table is subject to change by the respective post-secondary institutions. Should any questions arise, please consult the appropriate institutional calendar or Registrar/ Student Service Offices for more information.

DIPLOMA IN APPLIED ARTS, EARLY CHILDHOOD EDUCATION

Distance Education	Full-Time Two Year Diploma
1-1 Apply Principles of Psychology	Psychology PS1100
1-2 Apply Principles of Psychology	Psychology PS1101
1-3 Nurture Development of Infants and Toddlers	Child Development II EE1201
1-4 Nurture Development of the Pre-School Child	Child Development III EE2200
1-5 Nurture Development of the School-Age Child, Adolescents and Adults	Child Development IV EE2201
2-1 Observe Children's Development (Mandatory)	Child Development I EE1200
2-2 Provide for Child Centred Experiences	Early Childhood Education I EE1100
2-3 Organize Physical Environment	Early Childhood Education II EE1101
2-4 Plan Curriculum, Math and Science	Early Childhood Education III EE2100
3-1 St. John Ambulance First Aid Certificate	St. John Ambulance First Aid Certificate
4-1 Promote the Health, Safety and Well-being of Children and Staff	Health FH1300
4-4 Meet Children's Nutritional Needs	Nutrition I FH1110
4-5 Prepare Nutritious Meals and Snacks	Nutrition II FH1111
5-1 Provide Language Experiences	Creative Activities II EE1401
5-2 Provide Art Experiences	Creative Activities I EE1400
5-3 Provide Music Experiences	Creative Activities III EE2400
5-4 Provide Movement Experiences	Creative Activities IV EE2401
6-1 Encourage Self-Esteem	Foundation of Positive Behaviour Guidance EE1250
6-2 Guide Children's Behaviour	Advanced Behaviour Guidance Strategies EE2250
7-1 Identify Family Patterns	Family Studies I EE1300
7-2 Demonstrate a Partnership with Families	Family Studies II EE1301
7-3 Respond to Families' Needs	Family Studies III EE2300 **AND** Family Studies IV EE2301
8-1 Facilitate Team Work and Adult Communication	Communications - Oral CM2200
8-2 Demonstrate Language Skills, Write Memos, Letters, and Reports	Communications CM1100 **AND** CM2100
8-3 Apply Bookkeeping Principles	Bookkeeping AC1100
8-4 Network with Community	Community Resources EE1600
8-5 Assist in Management and Administration of	Early Childhood Education IV EE2101
Centre	
9-1 Practice Professional Values	Early Childhood Education IV EE2101
9-2 Demonstrate a Philosophy that Reflects Quality Early Childhood Education	Program Integration E1!500
Fieldwork – 4 Practicum Institutes	FW1300; FW1301; FW2300; FW2301

DIPLOMA

- **Two years**
- **To be announced**
- **Bay St. George Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
MC1150	Productivity Tools	4	3	2
PY1100	Photography I	3	3	0
MM2310	Digital Video Techniques	3	2	2
DR1110	Basic Drawing & Sketching	3	3	0
FV1100	History of Cinema	4	3	2
FV1200	Film Production Basics	4	3	2
Semester 2		**Cr**	**Le**	**La**
MM1800	Storytelling & Animatic Design	4	3	2
MM2300	Digital Audio Techniques	3	2	2
CM1550	Creative Writing	3	3	0
FV1240	Rigging & Grip	3	2	2
FV1250	Lighting & Electrics	3	2	2
FV1320	Advanced Digital Video	3	2	2
FV1300	The Language of Cinema	3	2	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
FV1220	Short Film Production	5	2	10
Semester 4		**Cr**	**Le**	**La**
MM1950	Workplace Professionalism	3	3	0
OF1101	Office Management II	3	3	1
CS2500	Project Management	3	3	0
MM2500	Computer Graphics	3	2	2
HY1100	Art History	3	3	0
FV1400	AVID Editing	3	2	2
FV2200	Documentary Film Production	3	2	2
Semester 5		**Cr**	**Le**	**La**
SN2400	Sound Production for Film & Video	3	3	0
VA3550	Screening and Peer Critique	3	2	3
VA1400	Colour Theory	3	3	0
MM2850	Digital Compositing	4	3	2
FV2300	Cinematography	3	2	2
FV1500	Certifications	3	2	2
FV2220	Final Film Production	3	2	2

APPLIED ARTS

Film and Video Production

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

The film and video field encompasses the use of cameras, lighting and audio equipment, editing facilities and digital effects equipment. Areas of instruction include the history and evolution of the film industry, photography, screening and peer critique, cinematography, and rigging and grip. The primary focus of the program is to prepare students to perform the technical tasks associated with film-making. Expressed another way, 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

A Provincial High School Graduation Certificate with a 60% average in nine level 3000 credits or equivalent,
OR
A Grade XI Public Examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the General or Academic Stream with an average pass mark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

The Province of Newfoundland and Labrador has committed itself to the development of a healthy and viable film production industry. The establishment of 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.

Credit: Pamela Gill, Information Officer, SWGC

Food Service and Nutrition Management

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

The program involves a combination of classroom work and practical experience. Students obtain theoretical and practical training in food preparation, nutrition, entrepreneurial studies, accounting, business management, menu planning, purchasing procedures as well as first aid and sanitation.

Practical training which occurs in the third semester is spent in the hospitality and health care fields.

OBJECTIVES

1. To train students for employment in the hospitality or health care sectors as managers of food service establishments.
2. To develop supervisory skills in selected key areas of food services: procurement, preparation and delivery.
3. To demonstrate knowledge and skill of normal and therapeutic nutrition as they apply to food service in hospitality and health care sectors.
4. To develop human resource management skills in leadership, teamwork, cooperation and problem solving.
5. To provide students with a broad understanding of activities involved in the administration of organizations and specifically those of the food service industry.
6. To provide students with the skills and knowledge which will increase their possibilities as entrepreneurs.

CURRICULUM

1. General Education consisting of communications (oral and written), mathematics, organizational behavior, marketing, computers and bookkeeping.
2. Specific education in the areas of nutrition, food service: production and management, marketing, human resource management and entrepreneurial studies.

EMPLOYMENT OPPORTUNITIES

The graduates of this program may obtain employment in a variety of food service settings. Jobs acquired as a result of this diploma range from supervisor or manager in a health care setting to management of a large food service operation in the hospitality sector. Graduates will find themselves employed in a growth industry. In the fast growing hospitality and tourism industry this diploma can assist those interested in starting their own business.

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent. A health certificate is required,

OR

A Grade XI public examination pass with a 60% average or equivalent,

OR

An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average pass mark of 60%,

OR

Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

DIPLOMA

- **Two years**
- **September start**
- **Prince Philip Drive Campus**
- **Note:** The first year of this program is offered every alternate year. The next first year intake will be in September 2004.

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
MC1150	Productivity Tools	4	3	2
CM1100	Writing Fundamentals	3	3	1
FH1100	Basic Nutrition I	3	3	0
HM2110	Hospitality Menu Management I	3	3	0
HM2240	Supervision	3	3	0
HS1120	Intro. to Food Preparation I	4	3	4
MA1110	Business Mathematics	2	2	1
Semester 2		**Cr**	**Le**	**La**
AC1100	Bookkeeping I	4	3	2
CM2100	Workplace Communications	3	3	0
FH1101	Basic Nutrition II	3	3	0
HM1500	Quality Management in Food Service	3	3	0
HM2111	Management of Institutional Menus II	3	2	2
HS1121	Food Preparation II	4	3	4
HM2100	Cost Controls I	3	3	0
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
WT1200	Practical Training	7 wks		
Semester 4		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
MR1230	Customer Service in the Food Service Industry	2	2	0
FH2100	Therapeutic Nutrition I	4	3	2
HM2101	Cost Controls II	3	3	0
AC2100	Bookkeeping II	4	3	2
HM3110	Restaurant Menu Management III	3	3	0
HS2120	Food Preparation III	4	2	6
Semester 5		**Cr**	**Le**	**La**
CM2300	Communications	2	2	0
EP1100	Entrepreneurial Studies	4	3	2
FH2101	Therapeutic Nutrition II	4	3	2
HM2210	Hospitality Marketing	3	3	0
HN1200	Human Resources Management	3	3	1
HS2121	Food Preparation IV	4	2	6
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
WT1201	Practical Training	7 wks		

Students are required to successfully complete the National Sanitation Training Program to be eligible for a diploma from the College.

Students must possess a valid St. John Ambulance Emergency First Aid Certificate to be eligible for a diploma from the College.

DIPLOMA

- **Two years**
- **September start**
- **Prince Philip Drive Campus**
- **Note:** The first year of this program is offered every alternate year. The next first-year intake will be in September 2004.

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1100	Writing Fundamentals	3	3	1
GA1160	Graphic Arts Problem Solving	3	3	0
VA1230	Graphic Design I: Design Fundamentals	3	3	0
GA1110	Graphic Arts History/Typography	3	2	4
GA1410	Page Layout I	2	2	1
MC1180	Computer Systems for Graphic Arts	3	2	2
GA1200	Post Press Op. I	3	2	2
Semester 2		**Cr**	**Le**	**La**
VA1231	Graphic Design II: Design for Business	3	2	2
GA1930	Introduction to Darkroom	2	1	4
GA1600	Lithography I	6	5	3
GA1630	Illustration I	4	4	0
GA1411	Page Layout II	2	1	3
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
GA1510	Digital Imaging I	2	2	0
GA1820	Colour Theory for Graphic Arts	3	3	0
GA1631	Illustration II	3	3	0
MR1340	Marketing for Graphic Design	3	3	0
Semester 4		**Cr**	**Le**	**La**
CM1400	Communications	3	3	0
GA1511	Digital Imaging II	2	1	3
GA1870	Business Practices for Graphic Design	3	3	0
GA1800	Multimedia I	2	1	3
VA2240	Graphic Design II: Packaging Design	4	3	2
VA1500	Photographic Illustration I	3	2	3
HY1100	Art History I	3	3	0
Semester 5		**Cr**	**Le**	**La**
VA2231	Graphic Design IV: Identity Systems Design	4	3	2
GA1560	Publication Design	3	2	3
VA1501	Photographic Illustration II	3	2	3
CR1520	Website Design	3	2	2
WT1350	Work Experience	5	0	14
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
ST2500	Design Studio	3	2	2
SD1860	Portfolio Development	2	2	0
GA2360	Production for Graphic Designers	2	2	0
CR1521	Advanced Website Design	2	2	0

APPLIED ARTS

Graphic Design

In the global community, the need to communicate effectively and efficiently is paramount. There has never been a greater need for those who can combine their creativity with advanced computer graphic skills.

This two-year diploma program gives students the conceptual and technical expertise necessary to achieve entry-level positions in today's exciting and diverse Graphic Design industry. Whether your interest lies in working in information design, publication design, advertising, website design, or other related fields, this program gives you the tools to pursue your goals.

OBJECTIVES

1. To develop students' abilities in conceptualization and creative problem solving.
2. To provide students with a broad understanding of the issues involved in contemporary Graphic Design practice.
3. To train students in the specific computer hardware and software skills necessary for this industry.
4. To provide students with practical knowledge of, and experience with, industry-standard tools and equipment.
5. To provide students with the skills necessary for entry-level employment in the Graphic Design industry.

EMPLOYMENT OPPORTUNITIES

Past graduates have enjoyed a high level of success in competing for jobs in the Graphic Design industry, on both a provincial and national level. Jobs have ranged from entry-level design positions with advertising agencies and design companies to website design, magazine design, and photo restoration and retouching to employment in the multimedia and IT sectors to freelance or self-employed design work. Graduates will possess skills that are in demand in a rapidly growing worldwide industry.

ENTRANCE REQUIREMENTS

1. A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
   OR
   Grade XI public examination pass with a 60% average or equivalent,
   OR
   An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average pass mark of 60%,
   OR
   Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

2. **Portfolio**
   All students must submit a portfolio. A portfolio is a compilation of visual materials such as drawings, photographs, paintings or design work that reflects your interests and experience. The portfolio should consist of:
   a. Between 10 and 20 works, which should include no less than five (5) freehand draw ings;
   b. All work should be original: no copies of work by others will be accepted;
   c. No framed, 3-dimensional or very fragile work will be accepted;
   d. Portfolios should be no larger than 2 feet x 3 feet;
   e. There are two projects that must also be included in the portfolio. Please contact the Graphic Design program for details on the required projects.

APPLIED ARTS

Graphic Production and Printing

This is a two-year diploma program designed to provide training in modern methods of graphic production. The program offers a balanced selection of traditional and electronically enhanced skills.

The goal of the program is to help the student develop competencies in the areas of both traditional and electronic pre-press, production technologies, and post-press operations that will help lead to successful employment.

Program topics include: basic layout & design, electronic pre-press, offset press operation, and post-press operation skills. Students are exposed to a variety of computer software programs commonly used in this industry, such as page layout, design, image manipulation, and drawing. Other topics include: digital scanning (black & white and colour), colour proofing, direct-to-film image setting, and an introduction to digital photogaphy.

A schedule balanced between theory and hands-on work provides students with a positive, work-like environment that reinforces the learning process.

OBJECTIVES

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

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI public examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average pass mark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

DIPLOMA

- **Two years**
- **September start**
- **Prince Philip Drive Campus**
- **Note:** The first year of this program is offered every alternate year. The next first-year intake will be in September 2004.

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
CM1100	Writing Fundamentals	3	3	1
GA1160	Graphic Arts Problem Solving	3	3	0
VA1230	Graphic Design I: Design Fundamentals	3	3	0
GA1110	Graphic Art History/Typography	3	2	4
GA1410	Page Layout I	2	2	1
MC1180	Computer Systems For Graphic Arts	3	2	2
GA1200	Post Press Operations I	3	2	2
Semester 2		**Cr**	**Le**	**La**
VA1231	Graphic Design II: Design for Business	3	2	2
GA1930	Introduction to Darkroom	2	1	4
GA1600	Lithography I	6	5	3
GA1630	Illustration I	4	4	0
GA1411	Page Layout II	2	1	3
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
GA1510	Digital Imaging I	2	2	0
GA1820	Colour Theory for Graphic Arts	3	3	0
GA1631	Illustration II	3	3	0
GA1340	Film Imposition I	3	3	0
Semester 4		**Cr**	**Le**	**La**
CM1400	Communications	3	3	0
GA1511	Digital Imaging II	2	1	3
GA1875	Business Practices for Graphic Production	3	3	0
GA1611	Lithography II	7	4	8
GA2410	Page Layout III	2	1	2
Semester 5		**Cr**	**Le**	**La**
GA1840	Digital Output & Calibration	2	1	2
GA2610	Lithography III	8	6	6
GA1201	Post Press Operations II	2	2	1
WT1360	Work Experience	5	0	14
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
GA2230	Digital Printing	2	1	2
GA2560	Production Workflow & Quality Control	2	2	1
GA2460	Pre-Press Production Practicum	3	1	7
OR				
GA2470	Offset Press Production Practicum	3	1	7

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
DM1100	Document Production Fundamentals*	3	2	2
HR1100	Human Relations	3	3	0
JL1110	Reporting & News Writing I	4	4	0
JL1330	Electronic Layout & Design I	3	2	2
JL1410	Journalism, Ethics & Law	3	3	0
JL1800	Newsroom I	4	2	5
PY1310	Photojournalism I	3	2	2

*Students will be exempted from DM1100 if they can demonstrate a word processing speed of 25 wpm.

Semester 2		**Cr**	**Le**	**La**
JL1111	Reporting & News Writing II	4	4	0
JL1331	Electronic Layout & Design II	3	2	2
JL1530	Introduction to Radio Journalism	4	4	0
JL1801	Newsroom II	4	2	5
PC1100	Political Science	3	3	0
PY1311	Photojournalism II	3	2	2

Semester 3 (Intersession)		**Cr**	**Le**	**La**
FW1280	Work Placement	4 wks		

Semester 4		**Cr**	**Le**	**La**
CR1500	Website Dev.	3	2	2
HY1320	Newfoundland & Labrador History	3	3	0
JL1240	Beat Reporting	4	4	0
JL1550	Introduction to Television Journalism	4	4	0
JL2800	Newsroom III	4	2	5
Elective				

Semester 5		**Cr**	**Le**	**La**
EC1400	Newfoundland & Labrador Economy	3	3	0
JL2240	Feature Writing & Investigative Reporting	4	4	0
JL2801	Newsroom IV	4	2	5
JL2720	Special Project	3	2	2
SC1100	Sociology	3	3	0
Elective				

APPLIED ARTS

Journalism

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 training in the skills necessary to produce news for print, broadcast and online media.
3. To provide 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 training in newspaper layout and design using software that can be applied to a variety of desktop publishing formats.

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent and a minimum of 60% in a 3000 level Language or a level 3000 English.

OR

Grade XI Public Examination pass with a 60% average or equivalent,

OR

An Adult Basic Education Graduation Certificate indicating completion of the General or Academic Stream with an average pass mark of 60%,

OR

Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Multimedia: Courseware Development

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

The primary focus of this Multimedia program is on the design and development of quality instructional resources for use in venues ranging from a conventional classroom to non-traditional learning environments. Areas of instruction include instructional design, authoring systems, graphic arts and design, computer animation, digital audio and video techniques, information access and design, and entrepreneurial studies. Students will also acquire the skills to develop content for delivery via the World Wide Web.

OBJECTIVES

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

EMPLOYMENT OPPORTUNITIES

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

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI public examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average pass mark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

DIPLOMA

- **Two years**
- **September start**
- **Bay St. George Campus**
- **Note:** The first year of this program is offered every alternate year. The next first-year intake will be in September 2004.

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1		**Cr**	**Le**	**La**
CP1160	Introduction to the Internet	2	1	2
CP2050	Using Windows 95/NT	2	1	2
CP2600	Computer Hardware Fundamentals	4	3	2
EP1100	Entrepreneurial Studies	4	3	2
MC1150	Productivity Tools	4	3	2
MM1100	Authoring Systems	3	3	0
MM1200	Instructional Design I	3	3	0
Semester 2		**Cr**	**Le**	**La**
CM1550	Creative Writing	3	3	0
CS2510	Software Project Planning	3	3	0
MM1201	Instructional Design II	4	3	2
MM1300	Media Acquisition, Digitizing & Editing	2	1	2
VA1700	Graphic Art & Design	3	2	2
MM2100	Multimedia Authoring I	3	2	4
MR2110	Marketing Methods & Promotional Media	3	3	0
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MM1710	Multimedia Design Project*	4	2	20

*Hours per week adjusted to accommodate 6-week period.

Semester 4		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
CP1150	Visual Basic	4	3	3
MM2101	Multimedia Authoring II	3	2	4
MM2300	Digital Audio Techniques	3	2	2
MM2500	Computer Graphics I	3	2	2
MM2600	Computer Animation I	3	2	2
MM2700	Multimedia Lab I	2	1	2
Semester 5		**Cr**	**Le**	**La**
CR1500	Website Development	3	2	2
MM2310	Digital Video Techniques	3	2	2
MM2350	Multimedia Production	2	1	2
MM2501	Computer Graphics II	3	2	2
MM2601	Computer Animation II	3	2	2
MM2701	Multimedia Lab II	2	1	2
MM3100	Multimedia Authoring III	4	2	5

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1500	Comm. Skills	3	3	0
MU1100	Introduction to Music	4	4	0
DM1100	Document Production Fundamentals	4	4	0
SN1100	Introduction to Sound	3	3	0
MU1110	Music & Culture	3	3	0
HR1100	Human Relations	4	4	0
EL1120	Folklore	3	3	0
Semester 2		**Cr**	**Le**	**La**
MU2110	Instruments	3	3	0
SN2100	Electro-Accoustical Devices	3	3	1
CM1550	Creative Writing	3	3	0
MC1450	Music Computer Applications	3	3	0
MC1150	Productivity Tools	4	3	2
MU2120	Music Genres: Traditional	3	3	0
Elective				
Semester 3		**Cr**	**Le**	**La**
SN2200	Recording I	3	3	0
MU1200	Songwriting	3	3	0
EP1100	Entrepreneurial Studies	4	3	2
SN3200	Synthesizers and MIDI	4	3	2
SN1200	Music Business	3	3	0
MU2130	Music Genres: Popular	3	3	0
Elective				
Semester 4		**Cr**	**Le**	**La**
MR2110	Marketing Methods & Promotional Media	3	3	0
MN1410	Special Events Management	4	3	3
MU1400	Performance	3	3	0
HR2120	Public Relations	3	3	0
MU1120	Musical Theatre	3	3	0
CS2700	Self-Directed Learning Project	4	4	0
Elective				

Elective Courses
A list of elective courses to be offered in each semester will be made available prior to registration. Other courses may be chosen provided that:
a. all prerequisites have been met,
b. the course is offered during the semester,
c. the maximum enrolment for the course is not exceeded,
d. the student's schedule can accommodate all scheduled classes for that course.

APPLIED ARTS

Music Industry and Performance

The Music Industry and Performance program is designed for students who wish to pursue a career 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 a genre of music that is gaining world wide 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 talent in the company of like-minded students while gaining exposure to all aspects of the industry. From hands-on experience in the recording studio, scheduled performances in local venues and extensive exposure to sound business, marketing and public relations skills, students will be able to realistically assess their prospects for success in a fiercely competitive industry. Indeed, some students may determine that they probably don't have what it takes to succeed as a performer but are ideally suited for a career as an agent or manager. In either instance, the program provides the skills which should ensure success.

It should be noted that the program is not designed for students seeking a career in classical genres. Universities provide excellent programs for students whose talents rest in this area, and the College strongly recommends these programs.

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

FUTURE OPPORTUNITIES

Graduates from this program should not expect to enter into conventional 9-5 positions with established companies. The music industry is fuelled by a combination of solid talent and strong managerial personnel, and graduates can expect to operate as independent entrepreneurs for some time until they establish partnerships with recording companies and distributors. As such, the environment is challenging but there are plenty of success stories.

OBJECTIVES

1. To provide training in the technical and financial aspects of the music industry.
2. To provide an opportunity to review the history of music and its evolution into distinct genres.
3. To provide an opportunity to refine musical talent and to demonstrate that talent through scheduled performances in local venues.
4. To provide opportunities for the social and intellectual development of the student in order to meet the challenges of a demanding industry.

ENTRANCE REQUIREMENTS

1. A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
   OR
   Grade XI Public Examination pass with a 60 % average or equivalent,
   OR
   An Adult Basic Education certificate indicating completion of the general or academic stream with an average passmark of 60%,
   OR
   Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

2. **Portfolio**
   All applicants must submit a demo recording in ONE of the following formats:
   a. standard audio cassette;
   b. compact disk;
   c. video cassette
   - 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:
     a. Quality of performance;
     b. Quality of presentation;
     c. Demonstration of a reasonable chance of success in the MIP program;
     d. The recording should be accompanied by a resume outlining any music-related experiences, live performances, and previous training.

Recording Arts

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

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

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

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

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

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 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.
3. To provide students with a 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.

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent including:

Mathematics (2 credits) chosen from:
Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum.
Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
OR
Mathematics (4 credits) chosen from:
Advanced: 2205, 3205 (50% minimum in each course)
Academic: 2204, 3204 (60% minimum in each course)

OR

Grade XI public examination pass with a 60% average including a 60% pas in Matriculation Mathematics or 50% in Honours Mathematics.

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:
(a) Mathematics IM3212, IM3213, and IM3216
(b) Mathematics IM3219

OR

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

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
ET1100	Electrotechnology	4	3	2
MA1100	Mathematics	5	4	2
MC1150	Productivity Tools	4	3	2
SN1100	Introduction to Sound	3	3	0
MU1100	Introduction to Music	4	3	2
SN1140	Physics of Sound	4	3	2
Semester 2				
CM1400	Communication Skills	3	3	0
ET1101	Electrotechnology	4	3	2
MU1110	Music & Culture	3	3	0
SN1300	Engineering Graphics for Recording Arts	3	2	3
SN2100	Electro-Acoustical Devices	3	3	1
SN3100	Sound Reinforcement	4	3	2
Semester 3				
AC1120	Computerized Accounting	4	3	2
CM1401	Communication Skills	3	3	0
HR1100	Human Relations	4	4	0
SN1200	Music Business	3	3	0
SN2200	Recording I	3	3	0
SN2400	Sound Production Animation Film	3	3	0
SN3200	Synthesizers & MIDI	4	3	2
Semester 4				
EP1100	Entrepreneurial Studies	4	3	2
MC1450	Music Computer Applications	3	3	0
MR2110	Marketing Methods & Promotional Media	3	3	0
SN2201	Recording II	4	3	2
SN2300	Broadcast Audio	3	3	0
SN2410	Sound Production Live Theatre	3	2	2

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1520	Writing for the Arts	3	3	0
HY1100	Art History I	3	3	0
ST2100	Intro. To Fibre	6	6	0
VA1100	Drawing I	3	3	0
VA1200	Design I	3	3	0
VA1320	Surface Embellishment	6	6	0
VA1400	Colour I	3	3	0
Semester 2		**Cr**	**Le**	**La**
HY1101	Art History II	3	3	0
ST2170	Knit I	6	6	0
ST2180	Weaving I	6	6	0
VA1101	Drawing II	3	3	0
VA1201	Design II	3	3	0
VA1321	Surface Embellishment II	3	3	0
VA1330	Chemical Dye I	3	3	0
Semester 3		**Cr**	**Le**	**La**
EP1100	Entrepreneurial Studies	4	3	2
VA2100	Drawing III	3	3	0
VA2210	Design III	3	3	0
*** Two of**				
ST2171	Knit II	8	8	0
ST2181	Weaving II	8	8	0
VA1331	Chemical Dye II	8	8	0
VA2320	Surface Embellishment III	8	8	0
Semester 4		**Cr**	**Le**	**La**
VA2111	Drawing IV	3	3	0
VA2211	Design IV	3	3	0
*** Two of**				
ST3170	Knit III	8	8	0
ST3180	Weaving III	8	8	0
VA2321	Surface Embellishment IV	8	8	0
VA2330	Chemical Dye III	8	8	0

All options may not be available each year.

APPLIED ARTS

Textile Studies

Textile Studies is an art-based program that provides hands-on training in craft, with a major emphasis on the textile media. The general goal of the program is to provide a flexible diploma-level of study that will permit persons to explore and develop skills in the area of textile design and production.

This course is preparatory in nature and provides an excellent foundation for individuals interested in developing a career as a production craftsperson, fashion designer, or visual artist in the medium of fibre.

This course also prepares students for entry into other, more specialized programs offered at other institutions.

OBJECTIVES

1. To provide a vehicle for student exploration and experimentation as part of the growth process in developing as an independent designer/craftsperson and/or visual artist.
2. To provide the student with a basic competency in the design and production of craft and fine art.
3. To develop an aesthetic and intellectual appreciation of craft and fine art.
4. To provide the student with the opportunity to explore and develop a major and minor area of study in preparation for a career in the production of textiles.
5. To encourage a spirit of entrepreneurship, and to assist in the development of entrepreneurial skills.
6. To prepare the student for on-going technical innovation.
7. To prepare the student who may wish to pursue further studies.

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI public examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the general or academic stream with an average passmark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Note: This program is may not be suitable for applicants with respiratory problems or color blindness.

Tourism Studies

Tourism Studies is a two-year program which reflects the realities of the tourism industry in Newfoundland and Labrador. It is designed for individuals who wish to pursue occupations within the Canadian Tourism Industry Sectors.

This program prepares students for careers in tourism by focusing on the skills necessary to meet the needs of the travelling public. Indeed, the goal of the program is to graduate competent, professional individuals with skills consistent with the highest level of industry demand.

In addition to receiving training in the technical aspects of the tourism industry, students will be given opportunities to develop the social and human relations skills needed to meet the challenges of a demanding industry.

The first year of the program focuses on the core skills and characteristics of the tourism industry as a whole, how the industry is organized, and the very real and emerging career options within the industry.

Year two provides for specialization within various sectors of the tourism industry. The **Hospitality option** includes in-depth training in the accommodations and food and beverage sectors. The **Travel option** prepares students for employment in the travel, transportation, and tourism services sectors.

The curriculum is designed to meet the standards established by The Canadian Tourism Human Resource Council and the local tourism industry. Additionally, the travel option will be recognized throughout the Canadian travel industry through endorsement by ACCESS (ACTA/CITC Education Standards System).

CAREER OPPORTUNITIES

Graduates of the Tourism Studies Program may find employment with travel agencies, airlines, tour operators, car rental agencies, travel insurance representatives, cruiselines, hotels, motels, resorts, bed and breakfasts, restaurants, beverage operations, tourist information centres and other related businesses depending upon the option selected in Year Two.

OBJECTIVES

1. To promote the tourism/travel/hospitality industry as a viable and fulfilling career choice.
2. To provide skill development in human relations and quality service, with a focus on the interpersonal skills of leadership, team building, problem solving.
3. To provide the student with a strong working knowledge of the tourism industry and the core skills that are required by the industry as a whole.
4. To provide the student with an opportunity to develop the specific skill set for either the hospitality or the travel sector.
5. To encourage the development of the polish and professionalism that are necessary to succeed in a career in the tourism industry.

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI Public Examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the General or Academic Stream with an average passmark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

DIPLOMA

- **Two years**
- **September start**
- **Bay St. George and Prince Philip Drive Campuses**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
MR1150	Tourism Marketing I	4	4	0
HR1100	Human Relations	4	4	0
DM1100	Document Fundamentals	4	4	0
TR1600	NL Tourism Destinations	4	4	0
TR1610	Intro. To Tourism	4	4	0
TS1630	Tourism Service	3	3	0
Semester 2		**Cr**	**Le**	**La**
MC1150	Productivity Tools	4	3	2
MN1410	Special Events Management	4	4	0
TR1620	Canadian Tourism Destinations	4	4	0
CS2320	Information Retrieval & Management	3	3	0
OF1300	Professional Office Procedures	4	4	0
LW1130	Tourism Law	4	4	0
MR1151	Tourism Marketing II	4	4	0
Semester 3 (Intersession)		**Cr**	**Le**	**La**
CM1200	Communications (Oral)	3	3	0
TR1700	Local Tour Guide	3	3	0
OJ1440	Work Term	2wks		
TRAVEL OPTION				
Semester 4		**Cr**	**Le**	**La**
MN1420	Tour Management	3	3	0
TR2320	Travel Product Knowledge I	4	4	0
TR2220	Tariffs & Ticketing: Domestic	4	4	0
TR2230	Travel Computer Reservations I	4	3	2
TR1510	World Tourism Destinations I	4	4	0
OJ1441	Work Term	3wks		
Semester 5		**Cr**	**Le**	**La**
TR1400	Travel Sales Skills	4	4	0
TR2321	Travel Product Knowledge II	4	4	0
TR2221	Tariffs & Ticketing: International	4	4	0
TR2231	Travel Computer Reservations II	4	3	2
TR1511	World Tourism Destinations II	4	4	0
AC1120	Computerized Accounting	4	3	2
HOSPITALITY OPTION				
Semester 4		**Cr**	**Le**	**La**
HM2240	Supervision	3	3	0
HS1260	Front Desk	3	3	0
HS1130	Dining Room Operations	5	3	5
HS1340	Bar & Beverage Operations	3	2	2
HM2140	Food & Beverage Management	3	3	0
OJ1441	Work Term	3wks		
Semester 5		**Cr**	**Le**	**La**
HN1200	Human Resource Management	3	3	1
AC1120	Computerized Bookkeeping	4	3	2
HM2120	Convention & Banquet Management	3	3	0
HS1520	Hospitality Sales	4	4	0
HM2170	Food & Beverage Cost Controls	4	4	1
HS1420	Housekeeping	3	3	0

Students must possess a valid St. John Ambulance Emergency First Aid Certificate to be eligible for a diploma from the College.

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1500	Essay Writing	3	3	0
HY1100	Art History I	3	3	0
PY1100	Photography I	3	3	0
VA1100	Drawing I	3	3	0
VA1200	Design I	3	3	0
VA1300	Materials & Techniques I	6	6	0
Elective				
Semester 2		**Cr**	**Le**	**La**
CM2100	Workplace Correspondence	3	3	0
HY1101	Art History II	3	3	0
PY1101	Photography II	3	3	0
VA1101	Drawing II	3	3	0
VA1201	Design II	3	3	0
VA1301	Materials & Techniques II	6	6	0
Elective				
Semester 3		**Cr**	**Le**	**La**
HY2100	Art History III	3	3	0
VA2100	Drawing III	3	3	0
VA2200	Design III	3	3	0
Two Studio Options		12	12	0
Elective				
Semester 4		**Cr**	**Le**	**La**
HY2101	Art History IV	3	3	0
VA2101	Drawing IV	3	3	0
VA2201	Design IV	3	3	0
Two Studio Options		12	12	0
Elective				

Electives
A list of elective courses to be offered in each semester will be made available prior to registration. Other courses may be chosen provided that:
a. all prerequisites have been met,
b. the course is offered during the semester,
c. the maximum enrolment for the course is not exceeded,
d. the student's schedule can accommodate all scheduled classes for that course.

Please note that Studio Options are not available as electives.

STUDIO OPTIONS*

ST2100	Fibre Arts I
ST2101	Fibre Arts II
ST2110	Jewellery I
ST2111	Jewellery II
ST2120	Painting I
ST2121	Painting II
ST2130	Ceramics I
ST2131	Ceramics II
ST2140	Printmaking I
ST2141	Printmaking II
ST2160	Photography I
ST2161	Photography II

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

APPLIED ARTS

Visual Arts

The Visual Arts program provides basic and intermediate studio experiences for the student. The four-semester program has been carefully designed to be both comprehensive and general in nature. Previous experience or a portfolio is not required; however, by the time the students complete the program, they will have developed skills in drawing, design, photography, art history, and a selection of visual art and craft areas. The program is designed to provide a foundation for people who have a general interest in art as well as for those who are interested in career-oriented training. Particular emphasis is placed on developing students' personal and creative potential while learning new technical skills.

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

OBJECTIVES

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

ENTRANCE REQUIREMENTS

A Provincial High School Graduation Certification with a 60% average in nine level 3000 credits or equivalent,
OR
Grade XI Public Examination pass with a 60% average or equivalent,
OR
An Adult Basic Education Graduation Certificate indicating completion of the General or Academic Stream with an average passmark of 60%,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Credit: Paul O'Keefe

BUSINESS STUDIES

CERTIFICATE

- **One year**
- **Start date varies:** At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- **Bay St. George, Burin, Carbonear, Clarenville, Corner Brook, Grand Falls-Windsor, Placentia, Port aux Basques, Prince Philip Drive, and St. Anthony Campuses**
- **Note:** The BA Certificate Program is offered through Continuing Education at Prince Philip Drive Campus in addition to the regular fulltime program.

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
CERTIFICATE PROGRAM				
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
AC2230	Computerized Accounting	3	2	3
OJ1100	Work Exposure	2wks		
DIPLOMA PROGRAM				
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

BUSINESS STUDIES

Business Administration

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

Business Administration (Accounting)

The two-year program leading to a Diploma in Business Administration (Accounting) has been developed to achieve competencies required in the field of general financial accounting. Industry 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.

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

OBJECTIVES

1. To develop skills in various key areas of accounting such as financial and intermediate accounting, taxation, and finance.
2. To help students develop self-reliance, initiative and the ability to solve business management problems.
3. To expand through related courses the basic accounting concepts and to apply them to real-life situations through the use of tools such as statistical analysis and economic planning.
4. To introduce the student to computerized business applications.
5. To train students for employment in the private industry or government sectors of business and to provide them with a sound base for further professional development.
6. To provide students with the skills and knowledge which will increase their success as entrepreneurs.

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.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
AC2220	Intermediate Financial Accounting I	5	3	5
AC2250	Managerial Accounting I	4	3	2
CM2200	Oral Communications	2	2	0
CM2300	Report Writing	2	2	0
LW1200	Business Law	3	3	0
Elective				
Semester 5		**Cr**	**Le**	**La**
AC1350	Income Tax	4	3	2
AC3220	Intermediate Financial Accounting II	5	3	5
AC3250	Managerial Accounting II	4	3	2
EC1100	Microeconomics	3	3	0
PS2340	Organizational Behaviour	4	4	0
SD1420	Workplace Skills	3	3	1
OJ1520	Work Exposure	4wks		

DIPLOMA

- **Two years**
- **Start date varies:** At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- **Bay St. George, Burin, Carbonear, Clarenville, Corner Brook, Grand Falls-Windsor, Labrador West, Placentia, and St. Anthony Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
EC1100	Microeconomics	3	3	0
LW1200	Business Law	3	3	0
MR2300	Business Research	4	3	2
CM2200	Oral Communications	2	2	0
***One of:**				
AC2220	Intermediate Accounting I	5	3	5
AC2250	Managerial Accounting I	4	3	2
***One of:**				
HN1100	Introduction to Industrial Relations	3	3	1
HN2130	Recruitment/Selection	3	3	1
***One of:**				
MR1500	Consumer Behaviour	3	3	0
MR1600	Professional Selling	4	3	2
MR2200	Retailing	3	2	3
Semester 5		**Cr**	**Le**	**La**
PS2340	Organizational Behaviour	4	4	0
SD1420	Workplace Skills	4	4	0
CM2300	Report Writing	2	2	0
***One of:**				
AC3220	Intermediate Accounting	5	3	5
AC3250	Managerial Accounting	4	3	2
AC1350	Income Tax	4	3	2
***One of:**				
SE1060	Workplace Safety Legislation	3	3	1
HN2100	Collective Agreement Administration	3	3	1
LW1210	Labour & Employment Law	4	3	2
***One of:**				
MR2350	E-Commerce	4	3	2
MR2400	Marketing Communications	4	3	2

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

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

OBJECTIVES

1. To provide students with a broad understanding of business practices.
2. To develop skills in the areas of accounting, marketing and human resource management.
3. To develop leadership, teamwork, and problem solving skills.
4. To introduce students to current computer technology and how it may be applied to business applications.

CAREER OPPORTUNITIES

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

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

Business Administration (Human Resource Management)

The Human Resource Management program has been designed to provide students with insight into the theory and practice of effective Human Resource Management. Management realizes the importance of its human resources to the success of an organization, particularly in today's competitive environment.

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. To provide students with a broad understanding of fundamental business principles and practices essential to efficient and effective management.
2. To develop skills in various key areas of human resource management such as recruitment, selection, training and development, compensation, and industrial/labour relations.
3. To develop leadership, teamwork, and problem-solving skills.
4. To introduce various aspects of computerized information technology.
5. To develop an appreciation for the entrepreneurial process, particularly as it relates to small business development.
6. To provide students with an opportunity to integrate classroom study with relevant work experience.

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.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

DIPLOMA

- **Two years**
- **September start**
- **Bay St. George, Grand Falls-Windsor, and Prince Philip Drive Campuses**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
HN1100	Industrial Relations	3	3	1
LW1200	Business Law	3	3	0
MR2300	Business Research	4	3	2
HN2130	Recruitment and Selection	3	3	1
CM2200	Oral Communications	2	2	0
Elective (Business)		4	3	2
Elective				
Semester 5		**Cr**	**Le**	**La**
HN2100	Collective Agreement Administration	3	3	1
LW1210	Labour and Employment Law	4	3	2
SE1060	Workplace Safety	3	3	1
EC1100	Microeconomics	3	3	0
PS2340	Organizational Behaviour	4	4	0
SD1420	Workplace Skills	4	4	0
CM2300	Report Writing	2	2	0
OJ1540	Work Exposure	4 wks		

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
EC1100	Microeconomics	3	3	0
LW1200	Business Law	3	3	0
MR2200	Retailing	3	2	3
MR1500	Consumer Behaviour	3	3	0
MR1600	Professional Selling	4	3	2
CM2200	Oral Communications	2	2	0
Elective				
Semester 5		**Cr**	**Le**	**La**
MR2350	Introduction to E-Commerce	4	3	2
SD1420	Workplace Skills	4	4	0
MR2300	Business Research	4	3	2
MR2400	Marketing Communications	4	3	2
CM2300	Report Writing	2	2	0
OJ1530	Work Exposure	4wks		
Business Management Diploma:				
EC1200	Macroeconomics	3	3	0
Elective				
Business Administration Diploma:				
EP2250	Small Business Development	4	3	2

Business Administration (Marketing)

The two-year program leading to a Diploma in Business Administration (Marketing) is designed to give students a broad background in business management with emphasis on the area of marketing. Graduates find employment in marketing, sales, retailing, administration, advertising and general management.

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

OBJECTIVES

1. To provide students with a broad understanding of activities involved in the administration of any organization.
2. To develop skills in selected key areas of management activity which will lead to specialization in areas such as marketing, advertising and promotion, retail merchandising.
3. To develop capacity for leadership, teamwork and co-operation in problem solving.
4. To acquire skills, knowledge and experience that will complement personal initiative, creativity and energy in contributing to any job situation.
5. To relate management studies to the needs of the public and private sectors of the economy of Newfoundland and Labrador.

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.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

Business Management (Accounting)

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

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

OBJECTIVES

1. To develop skills in various key areas of accounting such as financial and intermediate accounting, taxation, auditing and finance.
2. To help students develop self-reliance, initiative and the ability to solve business management problems.
3. To expand the basic accounting concepts through related courses and to apply them to real-life situations through the use of tools such as statistical analysis and economic planning.
4. To introduce students to computerized business applications.
5. To train students for employment in the private industry or government sectors of business and to offer them a sound base for further professional development.
6. To provide students with the skills and knowledge which will increase their success as entrepreneurs.

CAREER OPPORTUNITIES

Graduates may obtain employment in a variety of businesses, organizations and government departments. The following is a brief list of the positions that graduates may occupy after successful completion of the program: accountant, comptroller, auditor, business analyst, taxation officer, financial officer, administrative manager, payroll officer.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
AC2220	Intermediate Financial Accounting I	5	3	5
AC2250	Managerial Accounting I	4	3	2
CM2200	Oral Communications	2	2	0
CM2300	Report Writing	2	2	0
LW1200	Business Law	3	3	0
Elective				
Semester 5		**Cr**	**Le**	**La**
AC1350	Income Tax	4	3	2
AC3220	Intermediate Financial Accounting II	5	3	5
AC3250	Managerial Accounting II	4	3	2
EC1100	Microeconomics	3	3	0
PS2340	Organizational Behaviour	4	4	0
SD1420	Workplace Skills	3	3	1
OJ1520	Work Exposure	4wks		

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

Semester 6		**Cr**	**Le**	**La**
AC2340	Principles of Auditing	4	3	3
EP2250	Small Business Development	4	3	2
FN2110	Business Finance	4	3	2
MN2600	Strategic Management	3	2	2
EC1200	Macroeconomics	3	3	0
Elective				
Semester 7		**Cr**	**Le**	**La**
AC3260	Payroll and Commodity Taxes	4	4	0
EP2200	Business Planning	4	2	5
FN1100	Personal Finance	4	4	0
AC2530	Oil & Gas Production Accounting	5	5	0
AC3230	Computerized Accounting	4	3	3

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
HN1100	Industrial Relations	3	3	1
LW1200	Business Law	3	3	0
MR2300	Business Research	4	3	2
HN2130	Recruitment and Selection	3	3	1
CM2200	Oral Communications	2	2	0
Elective (Business)		4	3	2
Elective				
Semester 5		**Cr**	**Le**	**La**
HN2100	Collective Agreement Administration	3	3	1
LW1210	Labour and Employment Law	4	3	2
SE1060	Workplace Safety	3	3	1
EC1100	Microeconomics	3	3	0
PS2340	Organizational Behaviour	4	4	0
SD1420	Workplace Skills	4	4	0
CM2300	Report Writing	2	2	0
OJ1540	Work Exposure	4 wks		

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

Semester 6		**Cr**	**Le**	**La**
EP2250	Small Business Development	4	3	2
FN2110	Business Finance	4	3	2
HN2200	Compensation & Benefits	3	3	1
AC2600	Managerial Accounting for HRM	4	3	2
HN2140	Attendance & Disability Mgmt.	3	3	1
MN2600	Strategic Management	3	2	2
Semester 7		**Cr**	**Le**	**La**
EP2200	Business Planning	4	2	5
HN2110	Dispute Settlement	3	3	1
HN2210	Human Resource Planning	3	3	1
HN3110	Current Topics in Human Resource Management	3	3	1
Elective (Business)				
Elective				

Business Management (Human Resource Management)

The 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 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. To provide students with a broad understanding of fundamental business principles and practices essential to efficient and effective management.
2. To develop skills in various key areas of human resource management such as recruitment, selection, training and development, compensation, and industrial/labour relations.
3. To develop leadership, teamwork, and problem-solving skills.
4. To introduce various aspects of computerized information technology.
5. To develop an appreciation for the entrepreneurial process, particularly as it relates to small business development.
6. To provide students with an opportunity to integrate classroom study with relevant work experience.

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 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, and other business related occupations.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

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. To provide students with an in-depth understanding of activities involved in the management of organizations.
2. To develop skills in selected key areas of management activity such as marketing, advertising, promotion, retail merchandising.
3. To develop a capacity for leadership, teamwork and co-operation in problem solving.
4. To acquire skills, knowledge and experience that will complement personal initiative, creativity and energy to ensure a successful career.
5. To relate management studies to the needs of the public and private sectors of the economy of Newfoundland and Labrador.

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.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   - six credits at the 3000 level for those who complete a Language course
     OR
   - Five credits at the 3000 level for those who complete an English course,

OR

Grade XI Public Examination pass or equivalent with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honours) plus any three other subjects,

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

Persons 19 years of age or older who do not meet the entrance requirements for this program may be considered on an individual basis under the Mature Student Clause.

PROGRAM TRANSFERABILITY

The Business Administration/Management program offers 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, Marketing. Students may graduate at the end of Year 2 with a Business Administration Diploma.

Year 3

The three third-year options are Accounting, Human Resource Management, 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 such as:

- Certified General Accountants Association of Canada
- The Society of Management Accountants University College of Cape Breton
- Memorial University of Newfoundland
- University of Lethbridge
- Lakehead University
- Royal Roads University, British Columbia
- Purchasing Management Association of Canada

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

- Canadian Professional Sales Association
- Canadian Public Relations Society
- Canadian Institute of Financial Planning

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1260	Financial Accounting I	5	4	4
CM1240	Business Communications I	4	4	0
MA1400	Mathematics of Finance I	3	3	1
MR1100	Marketing I	4	3	2
HN1230	Human Resource Management I	3	3	1
MC1220	Productivity Tools I	2	1	2
Semester 2		**Cr**	**Le**	**La**
CM1241	Business Communications II	4	4	1
MC1221	Productivity Tools II	2	1	3
HN1240	Human Resource Management II	3	3	1
MA2400	Mathematics of Finance II (Not req'd for Certificate)	3	3	0
AC2260	Financial Accounting II	5	4	4
MR2100	Marketing II	4	3	2
Semester 3 (Intersession)		**Cr**	**Le**	**La**
MC2220	Productivity Tools III	3	2	3
OR				
MA1670	Statistics	4	4	1

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

Semester 4		**Cr**	**Le**	**La**
EC1100	Microeconomics	3	3	0
LW1200	Business Law	3	3	0
MR2200	Retailing	3	2	3
MR1500	Consumer Behaviour	3	3	0
MR1600	Professional Selling	4	3	2
CM2200	Oral Communications	2	2	0
Elective				
Semester 5		**Cr**	**Le**	**La**
MR2350	Introduction to E-Commerce	4	3	2
SD1420	Workplace Skills	4	4	0
MR2300	Business Research	4	3	2
MR2400	Marketing Communications	4	3	2
CM2300	Report Writing	2	2	0
OJ1530	Work Exposure	4wks		
EC1200	Macroeconomics	3	3	0
Elective				

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

Semester 6		**Cr**	**Le**	**La**
EP2250	Small Business Development	4	3	2
FN2110	Business Finance	4	3	2
MN2600	Strategic Management	3	2	2
MR2450	Services Marketing	3	2	2
MR2800	Business-to-Business Marketing	3	2	2
Elective				
Semester 7		**Cr**	**Le**	**La**
AC2250	Managerial Accounting I	4	3	2
EP2200	Business Planning	4	2	5
MR2600	Advanced Professional Selling	4	4	0
MR2700	International Marketing	4	4	0
PS2340	Organizational Behaviour	4	4	0
Elective				

DIPLOMA

- **Two years**
- **To be announced**
- **Bay St. George Campus**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
AM1100	The Cultural Context	3	3	0
CM1100	Writing Fundamentals	3	3	1
MC1150	Productivity Tools	4	3	2
HN1200	Human Resource Management	3	3	1
PS2340	Organizational Behaviour	4	4	0
EP1100	Entrepreneurial Studies	4	3	2
OF1100	Office Management I	3	3	1
Semester 2		**Cr**	**Le**	**La**
AM1200	Graphics Promotions Design	3	2	2
MC1240	Computer Appl's for Arts Mgmt.	4	3	3
CM2200	Oral Communications	2	2	0
AC1260	Financial Accounting I	6	4	5
MR1100	Marketing I	4	3	2
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
OJ1130	Work Exposure	6wks		
Semester 4		**Cr**	**Le**	**La**
AM1300	Funding Culture	6	6	0
LW1200	Business Law	3	3	0
MR2100	Marketing II	4	3	2
CS2500	Project Management	3	3	0
EP2200	Business Planning	4	2	5
Elective				
Semester 5		**Cr**	**Le**	**La**
AM1400	Cultural Administration	4	4	0
MN1410	Special Events Management	4	3	3
MR2400	Marketing Communications	4	3	2
AC2260	Financial Accounting II	6	4	5
Elective				
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
OJ1131	Work Exposure	6wks		

BUSINESS STUDIES

Cutural Management

The cultural industry has shown steady growth over the last few years, and this growth is expected to increase in the foreseeable future. Arts and cultural organizations need creative, professional administrators to assure future growth in this important sector. It you are a creative person with a desire to work in a cultural environment, this program may be for you.

In this program, students will learn about the cultural industry and its importance to the provincial and national lifestyle and economy. A wide range of business and other courses will be studied, in a cultural context, to equip graduates to handle the varied tasks required of managers in this field.

In addition, two-six-week work terms will help the student gain valuable work experience leading to intimate knowledge of what is required to manage a cultural business. The College will work closely with the provincial Association of Cultural Industries in the placement of these work terms, in an endeavor to provide meaningful learning experiences.

OBJECTIVES

1. To enable the student to acquire an understanding of the cultural sector and its importance in society.
2. To provide students with an understanding of fundamental business principles and practices essential to the efficient and effective management of a cultural operation.
3. To provide students with a broad understanding of activities involved in the administration of a cultural organization.
4. To help students develop self-reliance, initiative and the ability to solve a variety of business problems associated with the operation of a cultural industry.
5. To develop the capacity for leadership, teamwork and cooperation in problem-solving.

PROGRAM ENTRANCE REQUIREMENTS

Business Management (Accounting, Human Resources, and Marketing)

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum,
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course),
   Academic: 2204, 3204 (60% minimum in each course).
3. Additional credits at the 3000 level – chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   Six credits at the 3000 level for those who complete a Language course
   OR
   Five credits at the 3000 level for those who complete an English course

OR

A Grade XI Public Examination pass with a 60% average, including 60% in each of English and Mathematics (Matriculation) or a pass in Mathematics (Honors) plus any three other subjects,

OR

An Adult Basic Education Graduation Certificate indicating completion of the Academic Stream with an average pass mark of 60%,

OR

Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

Graduates of this program may find work in a wide variety of cultural organizations representing the visual or performing arts, sound recording, publishing, new media or film and video production industries. Alternatively, employment may be possible with government and non-government agencies dedicated to supporting the arts. Graduates may also decide to take the entrepreneurial route and start their own businesses.

Electronic Commerce

This program is designed to provide students who hold existing diplomas or university degrees with the skills and knowledge required by professionals in an emerging e-commerce marketplace. Students will explore ways organizations can use the Internet to expand current marketing strategies, increase sales, market new products and services, provide improved customer service as well as build new forms of customer value.

The program focuses on the development and management of an online business including planning, project management, customer relations, marketing research, and online marketing strategies. It also provides an overall introduction to e-commerce transaction systems, security and legal issues, website development, design and analysis.

OBJECTIVES:

Students graduating from this program should have knowledge in and be able to perform tasks in the following areas:

1. Website Development
2. Website Design
3. Website Analysis
4. Online Research
5. Internet Marketing
6. Technology Project Management
7. Customer Relations Management
8. E-commerce Trends
9. E-Customer Service
10. E-Business Law and Regulations
11. Online Business Development
12. E-Commerce Transactions.

The program will conclude with a Capstone Project. Working with a real client, under the direction of an instructor, the student (or team of students) will design, develop and implement a functioning e-commerce solution.

CAREER OPPORTUNITIES

The graduates of this program will be able to understand ways that organizations, in particular small and medium sized businesses, can effectively adopt e-business success strategies. Students will have the skills needed to assist a business operation in transforming its existing operations model, to enhance its electronic marketing strategies, increase international sales, expand customer base, market new products and services, provide improved customer service as well as build new forms of customer values.

ENTRANCE REQUIREMENTS

A university degree in Business Administration from a recognized institution,

OR

A diploma in Business Administration/Management (2 or 3 years) from a recognized institution.

OR

Equivalent work experience as determined through PLAR.

ADVANCED DIPLOMA

- **One year**
- **Start date varies**
- **Available through @College Distributed Learning Service**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
CR1500	Website Development	3	2	2
IN2100	Introduction to Research Online	4	4	0
MN2400	Technology Project Management	4	3	2
MN2500	Customer Relations Management	4	4	0
MR2120	Internet Marketing	4	4	0
MR2350	Introduction to Electronic Commerce	4	3	2
CP1400	Website Analysis & Design	3	2	3
LW2400	E-Business Law & Regulations	3	3	0
MR2360	E-Customer Service	4	3	2
MR2630	E-Commerce Trends	3	3	0
MR2640	E-Commerce Transactions	4	4	0
MR2670	Online Business Development	5	4	2
PR3500	Capstone Project		P/F	
SD1450	E-Business Career Development	2	2	0

CERTIFICATE

- **One year**
- **Start date varies:** At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- **Baie Verte, Bay St. George, Bonavista, Burin, Clarenville, Corner Brook, Grand Falls-Windsor, Happy Valley-Goose Bay, Port aux Basques, Prince Philip Drive, and St. Anthony Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1100	Bookkeeping I	4	3	2
CM1100	Writing Fundamentals	3	3	1
CP1450	Operating Systems	2	1	2
DM1200	Document Production I	6	4	6
EP1110	Introduction to Business	4	4	0
OF1100	Office Management I	3	3	1
Semester 2		**Cr**	**Le**	**La**
AC2100	Bookkeeping II	4	3	2
CM2100	Workplace Correspondence	3	3	0
CP2310	Spreadsheets	3	2	2
DM1201	Document Production II	6	4	6
DM1300	Transcription	3	2	2
OF1101	Office Management II	3	3	1
OJ1100	Work Exposure (Certificate only)	2wks		

BUSINESS STUDIES

Office Administration

Graduates from the certificate program will acquire knowledge and office skills for entry-level employment in the office of today.

OBJECTIVES

1. To develop personal and professional competencies necessary for the office of today.
2. To develop and demonstrate written and oral communication skills.
3. To acquire knowledge in related subjects such as computerized accounting and other computer applications, office systems management, and applied human relations.
4. To acquire knowledge and understanding of electronic office equipment.
5. To acquire advanced word processing, desktop publishing and data processing skills.
6. To develop and demonstrate a high level of competency in document production.

CAREER OPPORTUNITIES

Graduates of the diploma program may expect to find employment opportunities in both the public and private sectors, including all levels of government, legal and medical offices, accounting firms, hospital and education facilities, and general business offices. As well as acquiring skills and knowledge necessary to become effective employees in today's electronic office, graduates may gain insight into the creation of a small business of their own. Graduates are trained for the following specific positions: administrative assistant, word processing operator, computerized bookkeeping, data processing, legal transcription, medical transcription, microcomputer specialist as well as additional employment opportunities depending on electives selected.

Graduates from the certificate program may obtain employment as an entry-level administrative assistant, office clerk, data entry clerk, or word processing operator.

ENTRANCE REQUIREMENTS

High School Graduation
OR
A Grade XI Certificate (Public Exams or equivalent),
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause. It is recommended that the mature student have a good working knowledge of English and Mathematics.

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.

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, office management. Related courses include communications, computerized accounting, computer applications, and organizational behaviour.

ENTRANCE REQUIREMENTS

High School Graduation
OR
A Grade XI Certificate (Public Exams or equivalent),
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause. It is recommended that the mature student have a good working knowledge of English and Mathematics.

DIPLOMA

- **Two years**
- **Start date varies:** At some campuses the program begins in September; at others seats are filled as vacancies occur. Please check with the campus concerned.
- **Baie Verte, Bay St. George, Bonavista, Burin, Clarenville, Corner Brook, Grand Falls-Windsor, Happy Valley-Goose Bay, Prince Philip Drive, and St. Anthony Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1100	Bookkeeping I	4	3	2
CM1100	Writing Fundamentals	3	3	1
CP1450	Operating Systems	2	1	2
DM1200	Document Production I	6	4	6
EP1110	Introduction to Business	4	4	0
OF1100	Office Management I	3	3	1
Semester 2		**Cr**	**Le**	**La**
AC2100	Bookkeeping II	4	3	2
CM2100	Workplace Correspondence	3	3	0
CP2310	Spreadsheets	3	2	2
DM1201	Document Production II	6	4	6
DM1300	Transcription	3	2	2
OF1101	Office Management II	3	3	1

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

Semester 3		**Cr**	**Le**	**La**
AC2230	Computerized Accounting I	3	2	3
CM2200	Oral Communications	2	2	0
DM1301	Transcription II	3	2	2
DM2200	Document Production III	6	4	6
OF2100	Office Management III	3	3	1
One of the following:				
EC1100	Microeconomics	3	3	0
EP1100	Entrepreneurial Studies	4	3	2
HN1200	Human Resource Management	3	3	1
LW1100	Business Law	2	2	0
LW1200	Business Law	3	3	0
LW2100	Business Law	3	3	0
MN1410	Special Events Management	4	3	3
MR1100	Marketing	4	3	2
TM1100	Medical Terminology I	2	2	0
Semester 4		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
CP2320	Micro Database Applications	2	1	2
CP2640	Desktop Publishing	4	2	3
DM2201	Document Production IV	6	4	6
OF2101	Office Management IV	2	1	2
PS2340	Organizational Behaviour	4	4	0
OJ1240	Work Exposure	4wks		

Students must choose either LW1100 or LW1200: they will not receive credit for both.

DIPLOMA

- **Two years**
- **September start**
- **Prince Philip Drive Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1100	Bookkeeping I	4	3	2
CM1100	Writing Fundamentals	3	3	1
CP1450	Operating Systems	2	1	2
DM1200	Document Production I	6	4	6
EP1110	Introduction to Business	4	4	0
OF1100	Office Management I	3	3	1
Semester 2		**Cr**	**Le**	**La**
AC2100	Bookkeeping II	4	3	2
CM2100	Workplace Correspondence	3	3	0
CP2310	Spreadsheets	3	2	2
DM1201	Document Production II	6	4	6
DM1300	Transcription	3	2	2
OF1101	Office Management II	3	3	1

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

Semester 3		**Cr**	**Le**	**La**
AC2230	Computerized Accounting	3	2	3
CM2200	Oral Communications	2	2	0
DM1310	Legal Transcription I	3	2	2
DM2210	Legal Documentation Formatting I	6	3	7
LW1100	Business Law	2	2	0
OF2500	Legal Office Procedures I	3	3	1
Semester 4		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
DM2410	Legal Transcription II	2	1	2
DM3210	Legal Document Formatting II	6	3	7
LW2100	Business Law II	3	3	0
OF2501	Legal Office Procedures II	3	3	1
PS2340	Organizational Behaviour	4	4	0
OJ1240	Work Exposure	4wks		

BUSINESS STUDIES

Office Administration (Legal)

This two-year diploma program is designed to enable students to become administrative assistants in a legal or general office environment.

The program provides students with extensive knowledge and skills in the formatting and production of legal and general documentation, legal terminology, legal transcription and office management tasks.

Related courses include communications, computerized accounting, organizational behaviour and computerized business applications.

ENTRANCE REQUIREMENTS

High School Graduation
OR
A Grade XI Certificate (Public Exams or equivalent),
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause. It is recommended that the mature student have a good working knowledge of English and Mathematics.

Office Administration (Medical)

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

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

ENTRANCE REQUIREMENTS

High School Graduation
OR
A Grade XI Certificate (Public Exams or equivalent),
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause. It is recommended that the mature student have a good working knowledge of English and Mathematics.

DIPLOMA

- **Two years**
- **September start**
- **Grand Falls-Windsor Campus through @College Distributed Learning Service and Prince Philip Drive Campus**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
AC1100	Bookkeeping I	4	3	2
CM1100	Writing Fundamentals	3	3	1
CP1450	Operating Systems	2	1	2
DM1200	Document Production I	6	4	6
EP1110	Introduction to Business	4	4	0
OF1100	Office Management I	3	3	1
Semester 2		**Cr**	**Le**	**La**
AC2100	Bookkeeping II	4	3	2
CM2100	Workplace Correspondence	3	3	0
CP2310	Spreadsheets	3	2	2
DM1201	Document Production II	6	4	6
DM1300	Transcription	3	2	2
OF1101	Office Management II	3	3	1

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

Semester 3		**Cr**	**Le**	**La**
BL1330	Anatomy	4	4	0
CM2200	Oral Communications	2	2	0
DM1400	Medical Transcription I	4	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 4		**Cr**	**Le**	**La**
CP2320	Micro Database Applications	2	1	2
DM1401	Medical Transcription II	4	3	3
DM2201	Document Production IV	6	4	6
OF2300	MCP Billing	2	2	0
OF2401	Medical Office Management II	4	4	1
TM2100	Medical Terminology II	2	2	0
OJ1240	Work Exposure	4wks		

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

DIPLOMA

- **Two years**
- **September start**
- **Prince Philip Drive Campus**
- **Note:** This program is offered through Continuing Education at PPD Campus in addition to the regular fulltime program.

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
AC1100	Bookkeeping I	4	3	2
CM1100	Writing Fundamentals	3	3	1
CP1450	Operating Systems	2	1	2
DM1200	Document Production I	6	4	6
EP1110	Introduction to Business	4	4	0
OF1100	Office Management I	3	3	1
Semester 2		**Cr**	**Le**	**La**
AC2100	Bookkeeping II	4	3	2
CM2100	Workplace Correspondence	3	3	0
CP2310	Spreadsheets	3	2	2
DM1201	Document Production II	6	4	6
DM1300	Transcription	3	2	2
OF1101	Office Management II	3	3	1
OJ1100	Work Exposure (Certificate only)	2wks		

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

Semester 3		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
CP2320	Micro Database Applications	2	1	2
DM2200	Document Production III	6	4	6
PS2340	Organizational Behaviour	4	4	0
RP1100	Introduction to Records Mgmt.	4	4	0
RP1200	Archives Principles	2	2	0
RP1300	Active & Semiactive Records	2	2	0
Semester 4		**Cr**	**Le**	**La**
VCM2300	Report Writing	2	2	0
DM2201	Document Production IV	6	4	6
CP2640	Desktop Publishing	4	2	3
OF2100	Office Management III	3	3	1
RP1101	Management & Control of Records	2	2	0
RP1400	Information Security & Procedures	2	2	0
RP2200	Classification Systems	2	1	1
OJ1240	Work Exposure	4wks		

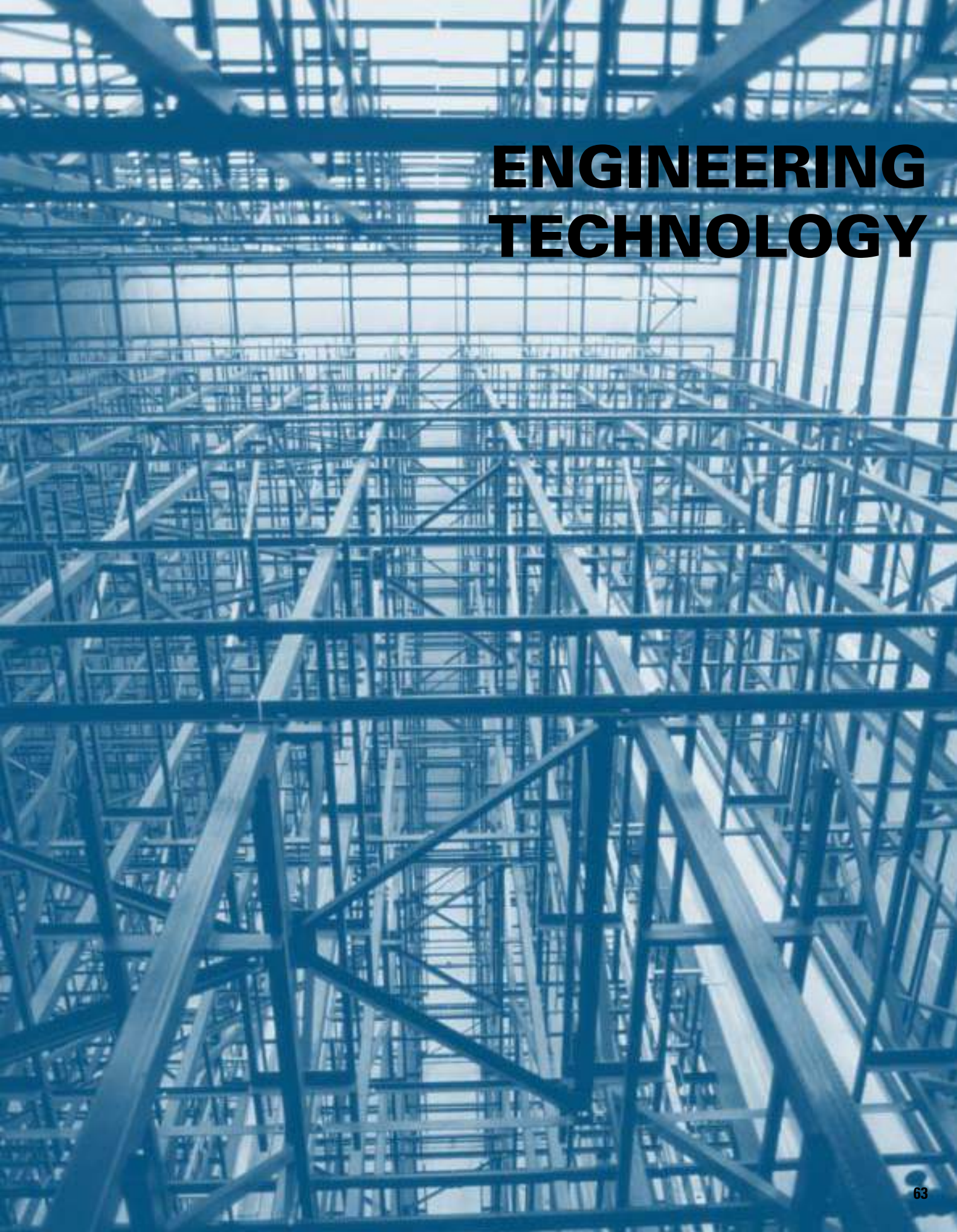
BUSINESS STUDIES

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 of Communications (oral and written), Organizational Behaviour, Human Resource Management.

ENTRANCE REQUIREMENTS

High School Graduation
OR
A Grade XI Certificate (Public Exams or equivalent),
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause. It is recommended that the mature student have a good working knowledge of English and Mathematics.



ENGINEERING TECHNOLOGY

- **September start**
- **Burin, Carbonear, Clarenville, Corner Brook, Gander, Labrador West, and Ridge Road Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CH1120	Chemistry	4	3	2
CM1400	Communication Skills	3	3	0
CT1150	Introduction to Computers for Technology	3	2	3
ET1100	Electrotechnology	4	3	2
MA1100	Mathematics*	5	4	2
PH1100	Physics	4	3	2

*Admission into the appropriate Mathematics course will be decided by the grade in high school math.
EITHER
Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1100
OR
Students who received a combined average of 70% in 2204 and 3204, or a pass in both of 2205 and 3205 can be exempted from MA1100.
The student must apply for the exemption.

Semester 2		**Cr**	**Le**	**La**
CH1121	Chemistry	4	3	2
CM1401	Communication Skills	3	3	0
EG1100	Engineering Graphics	3	2	3
ET1101	Electrotechnology	4	3	2
MA1101	Mathematics	5	5	0
PH1101	Physics	4	3	

Engineering Technology (First Year) (Under Review)

SELECTION PROCESS

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

Individuals must submit their application to the campus where they intend to complete the first two semesters of their program. This begins a first come, first served provincial process which reserves a seat at the designated campus, for the appropriate Technical Intersession, and subsequent years of program study. Applicants are given the opportunity to make a first and second program choice. This option allows applicants who apply early an increased opportunity for placement in at least one of their choices. If a student's first program choice is unavailable, and the applicant accepts his/her second program choice, then the first choice is automatically dropped from the provincial wait list.

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

TRANSFER PROCESS

If a student wishes to change his/her original program choice, he/she MUST request a program transfer and complete the appropriate form - available through the Registrar's Office. A request to trans-fer 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 15th.
2. Provided space is available, requests for program transfer are processed based on FIRST semester grade point average, GPA, (or weighted average in the case of identical GPAs).
3. Students who opt to attend first year Engineering Technology without identifying a program choice for their second year, MUST BE AWARE that there will be no seats reserved for them in second year. These students will compete academically with all other students requesting program transfers under the transfer policy.

ADMISSIONS INFORMATION

In adhering with our first-come, first-served policy of admission, we consider applicants for both the first and second program choices that are identified/listed on the Program Preference Request Form. This process ensures that those applicants who applied early have an increased opportunity for placement in at least one of their choices. If the acceptance letter indicates that the applicant is accepted for the second choice, this indicates that the first choice was already full.

If the first choice is unavailable, and he/she is accepted for a second choice then the first choice is immediately dropped from the wait list. Applicants cannot request a change in program prior to entry into the first year.

If applicants wish to change their program choice, there is a program transfer procedure in place. This applies only after students are registered in year one. Students who wish to transfer into another program must compete academically with all other students who apply to transfer to that same program. The deadline for applying for a program transfer is February 15. Transfer forms are available at the Registrar's Office and can be completed anytime after registration. Transfers are granted based on a) space availability and b) first semester Grade Point Average.

Students who enrol in first year Engineering Technology without identifying a program choice for their second year, must be aware
that there are no seats reserved for them in second year. They must compete academically with all students who request program transfers under the transfer policy.

Students who do not obtain their program preference and choose to wait an additional year before enrolling in the first year Engineering Technology, will remain on the Provincial Wait list. However it is important that students advise the campus of their intentions to remain on the wait list.

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

Burin Campus
Electrical Engineering Technology (Industrial Control)

Corner Brook Campus
Civil Engineering Technology
Electronics Engineering Technology

Gander Campus
Aircraft Maintenance Engineering Technology

Ridge Road Campus
Architectural Engineering Technology
Civil Engineering Technology
Electrical Engineering Technology (Power & Controls) Co-op
Electronics Engineering Technology
options in:
- Biomedical
- Communications
- Computers & Information Technology Co-op
- Instrumentation

Geomatics Engineering Technology Co-op
Industrial Engineering Technology Co-op
Mechanical Engineering Technology
Mechanical Engineering Technology (Manufacturing) Co-op
Petroleum Engineering Technology

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English: (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292.
2. Mathematics (2 credits) chosen from Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum.
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics ... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

DIPLOMA

- **Three years**
- **September start**
- **Gander Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
GM1100	Basic Maintenance Practices	3	4	5
GM1200	Standard Workshop Practices	3	4	5
PE1610	Aircraft Electrical	3	4	5
Semester 4		**Cr**	**Le**	**La**
AS2100	Hydraulics & Pneumatic Systems	3	2	2
AS2500	Fuel Metering	3	2	2
AV1210	Aircraft Instrumentation I	3	2	2
AV1310	Communications and Navigation Systems	3	2	3
DP1800	Motors, Generators and Starting Systems	3	2	2
GM1310	Weight & Balance & NDT	3	2	2
PT1100	Power Plant Fundamentals	3	2	2
Semester 5		**Cr**	**Le**	**La**
AF1120	Aircraft Structures, Materials, and Processes	3	2	2
AF1160	Aircraft Structural Repair	2	20	40
AS2150	Aircraft Landing Gear Systems	3	2	2
AS2200	Aerodynamics & Flight Control	3	2	2
AV2110	Radio Navigation I	3	2	2
DP1700	Electronics	3	2	2
PT2100	Reciprocating Engine Systems	3	2	2
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
AS2400	Propellers and Systems	3	2	2
DP1701	Electronics	3	2	2
PT2200	Turbine Engine Maintenance	3	5	5
Semester 7		**Cr**	**Le**	**La**
AF1210	Composite Materials	3	2	2
AS2300	Aircraft Support, Environment, and Safety Systems	3	2	2
AV2210	Aircraft Instrumentation II	3	2	2
AV2300	Communications Equipment	3	2	2
DP1710	Digital Electronics	4	2	2
GM1500*	Maintenance Regulations	2	2	0
RW3100	Rotary Wing Aircraft	3	2	2
Either				
AV2111	Radio Navigation II	3	2	2
OR				
PT2201	Turbine Engine Systems	3	2	2
Semester 8		**Cr**	**Le**	**La**
AV2400	Auto Flight	3	2	2
AV3100	Aircraft Monitoring & Digital Systems	3	2	2
DP2710	Digital Electronics	3	2	2
GM1500*	Maintenance Regulations	2	2	0
PE3110	Electrical Power Systems	3	2	2
PT2101	Reciprocating Engine Overhaul	3	2	2
RW3101	Rotary Wing Aircraft Systems	3	2	2
Either				
AV2111	Radio Navigation II	3	2	2
OR				
PT2201	Turbine Engine Systems	3	2	2

* Half of the course will be completed in semester 7, half will be completed in semester 8.

AV2350 Restricted Radio Telephone Operators Licence (Aeronautical) is a one day course, offered in this semester.

ENGINEERING TECHNOLOGY

Aircraft Maintenance Engineering Technology

The three-year Aircraft Maintenance Engineering Technology program offers training in fixed and rotary wing categories. Initially, students complete the Engineering Technology (First Year) curriculum and then begin specialized training in Technical Intersessions, Second and Third Year. Topics include the role of the Aircraft Maintenance Engineer as being responsible for aviation safety and airworthiness. Courses cover all aspects of aircraft maintenance for fixed and rotary wing aircraft and include safety practices, ground handling, inspection techniques, power plants, structural repair, aircraft systems, and avionics. Upon completion of the three year program, students are awarded a Diploma of Technology, Aircraft Maintenance Engineering Technology.

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.

OBJECTIVES

1. To develop an awareness of safety practices in the aviation industry.
2. To develop the skills and knowledge required to work in the aircraft maintenance field.
3. To develop and strengthen the related knowledge and skill in subjects that complement and support the technical training.
4. To develop positive attitudes and behaviour that will enable students to become successful in the industry.

EMPLOYMENT OPPORTUNITIES

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

Architectural Engineering Technology

Buildings are an exciting and vital part of our physical environment. Not only must they provide shelter, but they must do it in a way which provides safe, healthy, and comfortable environments which can be built and operated within given cost guidelines. To achieve these goals buildings have become complex structures requiring teams of specialists. An important member of the design and construction team is the Architectural Engineering Technologist.

The three-year Architectural Engineering Technology Program has been developed in response to the needs which exist in our province, with the direct input of those professionals associated with the design and construction of buildings. The first year emphasizes academic subjects designed to support the technical subjects emphasized in the second and third years. Projects and assignments are design-ed to be as close as possible to the type of work students will encounter upon graduation.

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

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

OBJECTIVES

1. To prepare students for employment in architectural and engineering fields by providing a learning environment encouraging them to be inquisitive, take initiative, and make decisions.
2. To provide knowledge in theory, practice, and legal requirements to enable students to take an important role in the decision making process of their work.
3. To help students develop the necessary skills to apply the results of this process accurately in graphic, written and oral communications.

CURRICULUM

A series of theoretical and practical subjects oriented toward the technical aspects of architecture.

A series of theoretical and practical subjects oriented toward the technical aspects of building services.

A series of theoretical and practical subjects oriented toward the technical aspects of computer applications in building design and construction. General subjects such as technical writing, mathematics, and physics designed to support the technical subjects.

EMPLOYMENT OPPORTUNITIES

The need is growing for people trained in building technology. Graduates may find employment in a variety of areas such as architectural firms, engineering firms, government departments, crown corporations, construction firms, manufacturing industries, and supply and sales companies.

Graduates of the Architectural Engineering Technology Program with two years of acceptable work experience are eligible for certification as technologists by the Association of Engineering Technicians and Technologists of Newfoundland.

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
DR2100	Architectural Drawing	4	2	6
EG1200	Engineering Graphics	5	3	6
HY1400	Architectural History	2	4	0
SU1220	Surveying	3	4	4
Semester 4		**Cr**	**Le**	**La**
BU2200	Architectural Building Services I	3	2	4
BU2300	Architectural Building Codes I	2	2	0
BU2400	Building Science I	2	2	0
CF2600	Building Materials I	4	4	0
DR3100	Architectural Working Drawings I	6	4	6
LW1610	Management Construction Law	2	2	0
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
BU2201	Architectural Building Services II	3	2	4
BU2301	Architectural Building Codes II	2	2	0
BU2401	Building Science II	3	3	0
CF2601	Building Materials II	3	3	0
CM2200	Oral Communications	2	2	0
CM2300	Written Communications	2	2	0
DR3101	Architectural Working Drawings II	6	4	6
EG2200	Graphics Presentation	2	2	0
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
PR2300	Major Technical Project	5	0	25
Semester 7		**Cr**	**Le**	**La**
BU3200	Architectural Building Services III	3	2	4
BU3300	Building Specifications	3	3	1
CF2500	Strength of Materials I	4	3	2
CF3600	Building Materials III	4	4	0
CG3200	Business Project	4	4	0
DR4100	Architectural Working Drawings III	4	2	6
Semester 8		**Cr**	**Le**	**La**
BU3201	Architectural Building Services IV	3	2	3
CF3420	Structural Design	3	2	2
CG3300	Architectural Cost Analysis	3	2	3
DR3200	Advanced CADD	3	1	3
DR4101	Architectural Working Drawings IV	4	2	6
PR2211	Technical Thesis	3	0	3

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk

Semesters 1 and 2 - Refer to ET (First Year)

Semester 3 (Intersession I)		Cr	Le	La
DR1210	Cadd Drawing	2	0	9
DR1211	Engineering Drawing	3	0	11
SU1200	Plane Surveying	3	2	9

Semester 4		Cr	Le	La
CF2500	Strength of Materials	4	3	2
CF2700	Materials & Testing I	4	3	2
EH1200	Earth Science	4	3	2
MA2100	Mathematics	5	5	0
SU1210	Construction Surveying	4	2	3
WA1100	Hydraulics	4	3	2

Semester 5		Cr	Le	La
BU2110	Building Systems & Codes	4	3	2
CA2800	Soil Mechanics	4	3	2
CF2501	Strength of Materials II	4	3	2
CM2200	Oral Communications	2	2	0
CM2300	Written Communications	2	2	0
EC1700	Engineering Economics	2	2	0
MA1670	Statistics	4	4	1
WA1200	Hydrology	4	3	2

Semester 6 (Intersession II)		Cr	Le	La
CB2420	Construction Methods	4	6	5
CF2421	Construction Materials II	4	6	5
FT1330	Construction Camp	2	0	9

Semester 7		Cr	Le	La
CA2100	Structural Design I	4	3	2
CA2500	Highways Design	4	3	2
CG2100	Urban Planning	4	3	2
CG2340	Construction Cost Estimating and Planning I	4	3	2
EN3100	Environmental Engineering	4	3	2
LW1600	Construction Law	3	3	0
PR2200	Technical Thesis (Seminar)	0	1	0

Semester 8		Cr	Le	La
CA2101	Structural Design II	4	3	2
CA2300	Urban Services Design	4	3	2
CG2341	Construction Cost Estimating and Planning II	4	3	2
CG3100	Construction Management	3	3	0
EN2420	Environmental Management	4	3	2
HR2130	Industrial Relations	3	3	0
PR2201	Technical Thesis	3	0	3

ENGINEERING TECHNOLOGY

Civil Engineering Technology

The construction industry plays an essential role in all aspects of the development of Newfoundland and Labrador through its capability and readiness to provide a wide variety of services. Such services include domestic, commercial and industrial buildings; harbour, wharves and breakwater improvements; airports, roads and other transportation facilities and municipal infrastructure.

Encompassing all of these areas, offshore oil development projects will create opportunities heretofore unknown in the history of the Province and with the other growing sectors will create a continuing and demanding need for personnel trained in the area of Civil Engineering.

The newly revised and expanded three year Civil Engineering Technology Program is designed to enable the graduate to play an important supporting role in the professional team which is responsible for the translation of ideas into the finished product and to ensure that construction projects are conceived, planned and executed in a manner that is cost effective and efficient and meets the needs of the construction industry.

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

OBJECTIVES

The main objective of the program is:

1. To produce students who can function in the Civil Engineering environment at the technologist level to:
   a. Become estimators of construction costs.
   b. Become job site superintendents.
   c. Become engineering assistants in the areas of:
      i. structural design in wood, steel and concrete.
      ii. the testing of soils
      iii. measurement and inspection of construction works.
   d. Become administrators and managers in the design and construction fields.

CURRICULUM

The objective to be achieved by a broadened curriculum is to make the graduate initially and progressively employable. Topics to be covered include construction, design, and maintenance of structures for both on-shore and off-shore development; destructive and nondestructive testing of a wide variety of engineering components using modern testing equipment and computer techniques, construction surveying, engineering drafting, water and sewerage systems and transportation technology; and a balanced grounding in the academic subjects of Mathematics, English and Physics; and computer instruction in word processing, spreadsheets and Application programs as applied to solving engineering problems.

EMPLOYMENT OPPORTUNITIES

The student, upon graduation, may find employment with contractors, consultants, house builders, manufacturers, suppliers, town councils, provincial and federal governments and their agencies, and many others involved in such things as design and construction of both on-shore and off-shore structures and facilities, testing and inspection of structural components, estimating, sales, and supervision to name a few.

Civil Engineering Technology

The field of civil design and construction plays a central role in the economic viability of many industries and the province as a whole. The civil field includes such areas as residential, commercial and industrial buildings; harbour wharves, and breakwater improvements; airports, roads, and other transportation facilities and municipal infrastructure.

Encompassing all of these areas, natural resource development projects will create a diversity of employment opportunities and with the other growing sectors will create a continuing and demanding need for personnel trained in the area of Civil Engineering. The newly revised and expanded three year Civil Engineering Technology Program is designed to enable the graduate to play an important supporting role in the professional team which is responsible for the translation of ideas into the finished product. The program is also designed to ensure that construction projects are conceived, planned and executed in a manner that is cost effective and efficient and meets the needs of the construction industry.

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

OBJECTIVES

The main objectives of the program is: to produce students who can function in the Civil Engineering environment at the technologist level and:

1. Estimate construction costs on a variety of Civil related projects.
2. Supervise job sites as superintendents of construction companies or representatives of consulting engineering firms.
3. Assist engineers in the areas of:
   a. structural design in wood and steel and concrete;
   b. the testing of soils, concrete, and asphalt;
   c. measurement and inspection of construction works.
4. Administrate and manage in the design and construction fields.
5. Advise engineers and contractors of environmental considerations needed on any construction or maintenance project.

FUTURE OPPORTUNITIES

The student, upon graduation, may find employment with contractors, consultants, house builders, manufacturers, suppliers, town councils, provincial and federal governments and their agencies, and many others involved in such things as design and construction of both on-shore and off-shore structures and facilities, testing and inspection of structural components, estimation, sales, and supervision.

SPECIAL REQUIREMENT

Graphics Calculator

DIPLOMA

- **Three years**
- **September start**
- **Corner Brook Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
DR1211	Engineering Drawing	3	0	11
MA2100	Mathematics	5	5	0
SU1200	Plane Surveying	3	2	9
Semester 4		**Cr**	**Le**	**La**
CF2500	Strength of Materials I	4	3	2
CF2700	Materials & Testing	4	3	2
HR2130	Industrial Relations	3	3	0
MA1670	Statistics	4	4	1
SU1210	Construction Surveying	4	3	2
WA1200	Hydrology	4	3	2
Semester 5		**Cr**	**Le**	**La**
BU2110	Building Systems & Codes	4	3	2
CF2501	Strength of Materials II	4	3	2
CF2701	Materials & Testing II	4	3	2
CM2300	Written Communications	2	2	0
DR1210	Cadd Drawing	3	0	9
EC1720	Construction Economics	3	2	2
WA1100	Hydraulics	4	3	2
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
CB2420	Construction Methods	4	6	4
FT1320	Survey Camp	3	1	9
Semester 7		**Cr**	**Le**	**La**
CA2100	Structural Design I	4	3	2
CA2300	Urban Services	4	3	2
CA2500	Highway Design	4	3	2
CA2650	Marine Construction	4	3	2
CA2800	Soil Mechanics I	4	3	2
CG2340	Construction Estimating and Planning I	4	3	2
PR2200	Technical Thesis (Seminar)	0	1	0
Semester 8		**Cr**	**Le**	**La**
CA2101	Structural Design II	4	3	2
CA2801	Soil Mechanics II	4	3	2
CG2100	Urban Planning	4	3	2
CG2341	Construction Estimating and Planning II	4	3	2
LW1600	Construction Law	3	3	0
OJ1400	Work Term	3wks		
PR2201	Technical Thesis	3	0	3

DIPLOMA

- **Three years**
- **September start**
- **Burin Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AE1200	Electronic Devices	5	7	4
CI1300	Fabrication Techniques	2	0	9
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
AE2300	Analog Electronics	4	3	3
DP1100	Digital Electronics	4	3	2
DR2300	Advanced CADD	1	0	6
FM2200	Mechanics	3	3	1
MA2100	Mathematics	5	5	0
PE1500	Electrical Machines	4	3	2
Semester 5		**Cr**	**Le**	**La**
AE2301	Analog Electronics	4	3	3
CT1120	Procedural Program in C++	4	3	3
FM2100	Fluid Mechanics	3	3	1
MA2101	Mathematics	5	5	0
PE2120	Electrical Practices	4	3	2
XD2300	Electromechanical Motor Control	4	3	2
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
CM2300	Written Communications	2	2	0
FM2201	Mechanics	3	3	1
XD1810	Solid State Motor Controls	4	6	4
Semester 7		**Cr**	**Le**	**La**
CI2800	Process Measurement I	3	2	2
CI2810	Process Control I	3	2	2
DP2400	Digital Microprocessors	4	3	2
EC1700	Engineering Economics	2	2	0
FM3100	Fluids (Hydraulics/Pneumatics)	3	3	1
MA1670	Statistics	4	4	1
XD2500	Programmable Controllers I	4	3	2
Semester 8		**Cr**	**Le**	**La**
CG3400	Engineering Management	3	3	0
CI2801	Process Measurement II	4	3	3
DP2150	Microprocessor Interfacing & Microcontrollers	4	3	2
DP2340	Robotics & CAM	4	3	2
PR2721	Technical Thesis	3	0	3
XD2900	Programmable Controllers II	4	3	2
XD1350	Environment & Ethics	2	2	0

ENGINEERING TECHNOLOGY

Electrical Engineering Technology (Industrial Controls)

A three-year Electrical Engineering Technology program with specialization in industrial control.
The Industrial Control Technologist may be responsible for designing, installing, commissioning, maintaining, and troubleshooting various industrial control systems ranging from simple motor controls to complicated automated systems.
This program trains students in the theoretical and practical skills of AC/DC machines and their control systems; industrial analog/digital electronics; microprocessors; programmable logic controllers; industrial instrumentation; pneumatic/hydraulic systems; and robotics.
Graduates of this program will receive a Diploma in Electrical Engineering Technology (Industrial Control). Graduates may be eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland and Labrador (AETTN), and following two years of recognized post graduate experience may receive the designation of Certified Engineering Technologist (CET).

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

OBJECTIVES

1. To develop a high level of skill and knowledge in the area of industrial control technology.
2. To provide a knowledge of modern electrical and electronic equipment.
3. To provide an engineering systems approach to problem solving so that graduates can readily upgrade their knowledge and skills.
4. To develop an awareness of and concern for good safety practices and procedures in the workplace.
5. To develop an awareness of and concern for environmental and ethical issues that confront the practising technologists in the workplace.

FUTURE OPPORTUNITIES

As engineering technologists, graduates of this program will have the knowledge and skills that will allow them to quickly progress to a level where they will be able to:

- design, install, commission, maintain and troubleshoot industrial control systems
- work and communicate as a member of a team with other professionals, as well as supervise the work of skilled technicians, trade persons, and non-technical persons
- think and work independently.

CURRICULUM

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

Extensive training in the theory and principles of Industrial Electronics; Industrial Electrical Power Distribution Systems; Electrical Machines, Fluid Power; Advanced Autocadd; Engineering Economics; and Engineering Management.

Specialized training in Industrial Motor Control Systems; Variable Speed Motor Drives; Programmable Logic Controllers; Microprocessors and Microcontrollers; Robotics and Computer Aided Manufacturing; and Industrial Instrumentation.

A large portion of the training includes practical skills and specific techniques. Projects are designed to reflect industrial work situations.

EMPLOYMENT OPPORTUNITIES

Program graduates can find employment with a large variety of companies. Typical employers would come from the following areas: marine, mining, paper mills, oil refineries, offshore production, petro-chemical plants, utilities, consulting engineering, provincial and federal government departments, food packaging and processing, and the service sector. Positions of employment range from engineering design to maintenance and support personnel.

Electrical Engineering Technology (Power & Controls) Co-op

The Electrical Engineering Technology program is a three-year cooperative education program in the heavy electrical discipline with emphasis on electrical power systems, electrical design and control systems. This program has a strong practical component to complement the theoretical aspect and students will gain valuable experience in Electrical Workshop practices.

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

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

OBJECTIVES

1. Design, analyse and maintain electrical systems.
2. Install, troubleshoot and maintain heavy electrical equipment, including transformers, motors, generators and related control and protective equipment.
3. Use specific computer software in the design of building electrical systems.

CURRICULUM

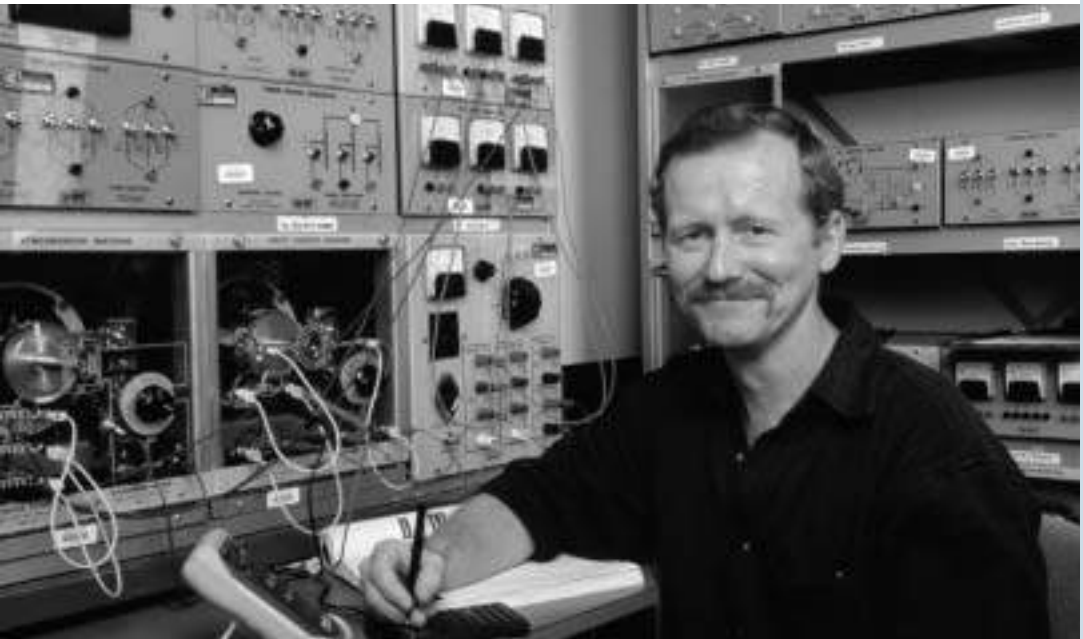
General Education consisting of English (Oral and written), Mathematics, and Physics, Chemistry, Electrotechnology, Computers and Engineering Graphics.

Specific education in various aspects of the Power Electrical Discipline including electrical design, control systems, basic instrumentation and power systems analysis.

Practical education in aspects of the Electrical Workshop including electrical wiring, installation and maintenance of electrical equipment and correct application of the Canadian Electrical Code.

EMPLOYMENT OPPORTUNITIES

The graduate of the Electrical Technology program can find employment with a large variety of companies involved in the electrical industry. Typical employers are Power Utilities, Consulting Engineering Companies, Oil and Gas Exploration and Production companies, Pulp and Paper Mills, Electrical sales and service, Manufacturing, Shipyards and Provincial and Federal Government Departments.



DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AE1200	Electronic Devices	5	7	4
CI1300	Fabrication Techniques	2	0	9
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
DP1300	Digital Fundamentals	4	3	3
MA2100	Mathematics	5	5	0
MP2300	AC Circuits	4	3	3
MP2900	EMD I (DC Machines)	4	3	3
PE2500	Electrical Practice (Main & Des)	2	1	3
PH2400	Analytical Mechanics	3	3	0
Semester 5		**Cr**	**Le**	**La**
CM2300	Written Communications	2	2	0
DP2500	Programmable Controllers	4	3	2
MA2101	Mathematics	5	5	0
MP2350	Transformers	4	3	3
MP2901	EMD I (AC Machines)	4	3	3
PE2501	Electrical Practices (Main & Des)	2	1	3
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
AE2250	Power Electronics	2	3	3
CM2200	Oral Communications	2	2	0
DR2300	Advanced Auto CADD	2	1	2
PE3100	Electrical Practices	3	3	6
PR2500	Technical Thesis (Seminar)	0	3	0
Semester 7		**Cr**	**Le**	**La**
WC1200	Work term I	5	0	0
Semester 8		**Cr**	**Le**	**La**
CI1210	Instrumentation Controls & Automation	3	2	2
EC1700	Engineering Economics	2	2	0
MA1670	Statistics	4	4	1
MP3100	Motor Control Systems	4	3	3
MP3210	Power Transmission & Distribution	4	3	3
PE3101	Electrical Practices	4	3	3
PR2510	Technical Thesis (Project Analysis)	0	0	1
Semester 9		**Cr**	**Le**	**La**
WC1201	Work term II	5	0	0
Semester 10		**Cr**	**Le**	**La**
CG3400	Engineering Management	3	3	0
CI3600	Industrial Process Control	4	3	3
MP3150	Power Devices & Motor Drives	4	3	3
MP3201	Power Transmission & Distribution	4	3	3
PE4100	Electrical Practices	4	3	3
PR2511	Technical Thesis	3	0	3

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AE1200	Electronic Devices	5	7	4
CI1300	Fabrication Techniques	2	0	9
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
AE2300	Analog Electronics	4	3	3
CI1100	Electronic Instrumentation	3	2	2
CM2300	Written Communications	2	2	0
CT2300	Applied Programming	4	3	2
DP1100	Digital Electronics	4	3	2
DR2410	Electronic CADD I	2	1	2
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
AE2301	Analog Electronics	4	3	3
CE2250	Electronic Analog Communication	4	3	3
CE2700	Antennas, Transmission, Lines & Propagation	4	3	3
DP2400	Digital Microprocessing	4	3	2
EC1700	Engineering Economics	2	2	0
MA2101	Mathematics	5	5	0
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
AE2210	Power Control Devices	3	3	6
AE2400	Problem Solving & Troubleshooting	2	0	4
CM2200	Oral Communications	2	5	0
DR2411	Electronic CADD II	2	3	5
Semester 7		**Cr**	**Le**	**La**
AE3100	Analog IC's	4	3	3
BL1300	Anatomy & Physiology	3	3	0
CG1200	Health Care & Safety I	2	1	2
CG3400	Engineering Management	3	3	0
CI3400	Biomedical Instrumentation I	4	3	4
DP3300	Microprocessors (Interfacing)	4	3	3
PR2610	Technical Thesis (Seminar)	0	1	0
Semester 8		**Cr**	**Le**	**La**
CG1201	Health Care & Safety II	3	2	2
CH2400	Biochemistry	4	3	2
CI3401	Biomedial Instrumentation II	6	4	6
CI3500	Medical Imaging	4	3	2
DP3200	Embedded Controller Applications	4	3	2
PR2611	Technical Thesis	3	0	3
Semester 9 (Intersession III)		**Cr**	**Le**	**La**
WT1700	Biomedical Practicum	P/F		

Electronics Engineering Technology (Biomedical)

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

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

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

OBJECTIVES

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

EMPLOYMENT OPPORTUNITIES

The graduates of this program may enter the work force in the employment of hospital biomedical engineering departments, with manufacturers and distributors of biomedical instrumentation, as well as independent sales and service organizations. Employment may include design and development of medical instrumentation, as well as purchase evaluation, acceptance testing, preventive and demand maintenance and operator training.

Electronics Engineering Technology (Communications)

The Electronics Engineering Technology (Communications) Program is an option available in the three-year Electronics Engineering Technology Program. The program is designed to provide graduates with the skills and knowledge to work in modern communication systems using digital and fibre-optics principles. Graduates will have hands-on experience in maintaining and aligning communications systems as well as being able to design systems using established methods. Graduates of this three-year program receive the Diploma of Electronics Engineering Technology.

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

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

OBJECTIVES

1. To develop an awareness of and concern for good safety practices and procedures in the workplace.
2. To provide a basic knowledge of modern equipment, instrumentation techniques and electronic devices, associated with the general field of electronics.
3. To develop a high level of skill and knowledge in the application of basic electronic principlesCthe operation, testing and maintenance of elec-tronic equipment.

CURRICULUM

General Education consisting of English (oral and written), Mathematics, and Physics, Chemistry, Electrotechnology, Computers, Engineering Graphics and Student Success.

Extensive training in the theory and principles of electronics.

Specialized training in the field of software engineering. Laboratory and field experience in the application of all facets of electronics.

EMPLOYMENT OPPORTUNITIES

The graduate of this program may obtain employment in a variety of settings with provincial and federal government agencies, industrial communications companies, industrial electronics firms, radio and television stations, computer companies. Many opportunities in these fields exist within the province.

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AE1200	Electronic Devices	5	7	4
CI1300	Fabrication Techniques	2	0	9
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
AE2300	Analog Electronics	4	3	3
CI1100	Electronic Instrumentation	3	2	2
CM2300	Written Communications	2	2	0
CT2300	Applied Programming	4	3	2
DP1100	Digital Electronics	4	3	2
DR2410	Electronic CADD I	2	1	2
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
AE2301	Analog Electronics	4	3	3
CE2250	Electronic Analog Communication	4	3	3
CE2700	Antennas, Transmission Lines & Propagation	4	3	3
DP2400	Digital Microprocessing	4	3	2
EC1700	Engineering Economics	2	2	0
MA2101	Mathematics	5	5	0
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
AE2210	Power Control Devices	3	3	6
AE2400	Problem Solving & Troubleshooting	2	0	4
CM2200	Oral Communications	2	5	0
DR2411	ElectronicCADD II	2	3	5
Semester 7		**Cr**	**Le**	**La**
AE3100	Analog IC's	4	3	3
CI3300	System Modelling	3	3	0
DP3300	Microprocessors (Interfacing)	4	3	3
DP3400	Digital Communications	4	3	2
MP2400	Network Analysis	5	5	0
PR2600	Technical Thesis (Seminar)	0	0	1
Elective				
Semester 8		**Cr**	**Le**	**La**
CE3200	Analog and Digital Telephony	4	3	2
CE3300	Fibre Optic Communication	2	1	2
CG3400	Engineering Management	3	3	0
CI3100	Automatic Control Systems	4	3	3
PR2601	Technical Thesis	3	0	3
Elective				
Electives		**Cr**	**Le**	**La**
CE3100	Communication Systems	4	3	2
CE3400	Local Area Networks	4	3	3
CE3500	Microwave Circuit Design	4	3	3
DP3200	Embedded Controller Applications	4	3	2

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
CP1150	Visual Basic	4	4	6
CP2600	Computer Hardware Fundamentals	4	4	1
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
AE2320	Analog Electronics	5	4	3
CM2300	Communications	2	2	0
CT2330	Applied Programming	4	3	2
DP1100	Digital Electronics	4	3	2
DP3430	Data Communications	4	3	2
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
AE2321	Analog Electronics	5	4	3
CE3400	LANS	4	3	3
CI1100	Electronic Instrumentation	3	2	2
CT1125	Programming in C++	4	3	2
DP2400	Digital/Microporcessors	4	3	2
MA2101	Mathematics	5	5	0
Semester 6		**Cr**	**Le**	**La**
WC1700	Work Term I	5	0	0
Semester 7		**Cr**	**Le**	**La**
CE3430	Network Cabling	4	3	3
CT2400	Systems Analysis & Design	4	4	0
CT3510	Database Programming	4	3	3
DP3200	Embedded Controller Applications	4	3	2
DP3300	Microprocessors Interfacing	4	3	3
EC1700	Engineering Economics	2	2	0
PR2630	Technical Thesis (Seminar)	0	1	0
Semester 8		**Cr**	**Le**	**La**
WC1701	Work Term II	5	0	0
Semester 9		**Cr**	**Le**	**La**
AE3100	Analog IC's	4	3	3
CE3420	Internets and Intranets	4	3	3
CG3400	Engineering Management	3	3	0
CT2500	Operating Systems	4	4	0
CT3130	Programming Language	4	3	3
PR2631	Technical Thesis	3	0	3

ENGINEERING TECHNOLOGY

Electronics Engineering Technology (Computers & Information Technology) Co-op

The Electronics Engineering Technology (Computers and Information Technology) Program is an option available in the three year Electronics Engineering Technology Program. The program is designed to provide graduates with the skills and knowledge to work in the field of software engineering. Graduates will have a sound background in electronics as well as specialized skills in the systems analysis and design of software solutions and equipment interfacing problems. Graduates of this three-year program receive the Diploma of Electronics Engineering Technology.

OBJECTIVES

1. To develop an awareness of and concern for good safety practices and procedures in the workplace.
2. To provide a basic knowledge of modern equipment, instrumentation techniques and electronic devices, associated with the general field of electronics.
3. To develop a high level of skill and knowledge in the field of software engineering.

CURRICULUM

General Education consisting of English (oral and written), Mathematics, and Physics, Chemistry, Electrotechnology, Computers, Engineering Graphics and Student Success.

Extensive training in the theory and principles of electronics.

Specialized training in the field of software engineering.

Laboratory and field experience in the application of all facets of electronics.

EMPLOYMENT OPPORTUNITIES

The graduate from the program will be a technologist who specializes in integrating computer technology into consumer and industrial products and would be the technology partner to the computer scientist. The graduate may be titled Computer Support Specialist or Software Engineer or any number of other titles. Graduates would typically find employment in companies like Instrumar, Newfoundland Telephone and other hi-tech companies that are using computers in new and innovative ways. These people will usually become part of a design team developing product prototypes. While not focused on the retail marketplace, nonetheless some students will elect to enter this area, repairing microcomputers and related peripherals. More likely they would qualify as service personnel for large computer and communications companies.

Electronics Engineering Technology (Instrumentation)

Instrumentation involves automation in the production of various commodities. Complex process control and measurement systems such as those found in the oil and gas industries, chemical plants, food processing operations, power generating, and the pulp and paper industry require sensitive, accurate instruments. Recent technical developments in measuring and controlling process variables like pressure, temperature, flow and composition have increased the quality of products and cut operating costs. Today conventional pneumatic and electronic controls are being rapidly replaced by computer-based systems. These advances in technology demand qualified personnel trained in the field of industrial instrumentation.

OBJECTIVES

1. The objectives of this program are to provide students with sound training in the principles of operation and maintenance of pneumatic devices, control valves, electronic instruments, digital logic devices and the design of computer-based process controls.
2. Extensive theoretical and practical training in personal computer applications in instrumentation, process control systems design, distributed control system design and actual interfacing of industrial microcomputer control systems with real processes.
3. Laboratory facilities are designed to provide a modern industrial setting including pilot scale version of processes found in various industries.
4. A control room with distributed computer control systems, industrial microprocessors, personal computers and programmable controllers is available for instruction.

EMPLOYMENT OPPORTUNITIES

Areas of employment open to graduating students include: plant maintenance, engineering design and construction, instrument/control systems technical services and sales, engineering consulting

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AE1200	Electronic Devices	5	7	4
CI1300	Fabrication Techniques	2	0	9
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
AE2300	Analog Electronics	4	3	3
CI1100	Electronic Instrumentation	3	2	2
CM2300	Written Communications	2	2	0
CT2300	Applied Programming	4	3	2
DP1100	Digital Electronics	4	3	2
DR2410	Electronic CADD I	2	1	2
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
AE2301	Analog Electronics	4	3	3
CI2800	Process Measurement I	3	2	2
CI2810	Process Control I	3	2	2
DP2400	Digital/Microprocessors	4	3	2
MA2101	Mathematics	5	5	0
MP2100	Electrical Machines & Devices	4	3	3
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
CI2240	Instrumentation (Hydraulics & Pneumatics)	2	3	3
CI1500	Introduction to Process Analysis	4	5	3
CM2200	Oral Communications	2	2	0
PE2700	Instrumentation Practical	2	0	9
Semester 7		**Cr**	**Le**	**La**
CE2800	Industrial Communication Systems	4	3	2
CG3400	Engineering Management	3	3	0
CI2801	Process Measurement II	4	3	3
CI2811	Process Control III	4	3	3
CI3100	Automatic Control Systems	4	3	3
MP3130	Industrial Electronics & Power Systems	4	3	2
PR2620	Technical Thesis (Seminar)	0	1	0
Semester 8		**Cr**	**Le**	**La**
CI3820	Process Analyzers	4	3	3
CI3830	Computer Control Systems	4	3	3
CE2900	Human Machine Interface Development	4	3	2
DP3100	Programmable Logic Control	4	3	3
EC1700	Engineering Economics	2	2	0
PR2632	Technical Thesis	3	0	3

DIPLOMA

- **Three years**
- **September start**
- **Corner Brook Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AE1200	Electronic Devices	5	7	4
CI1300	Fabrication Techniques	2	0	9
ET2100	Electrotechnology	3	5	3
Semester 4		**Cr**	**Le**	**La**
AE2300	Analog Electronics	4	3	3
CE2700	Antennas & Microwaves	4	3	3
CT2300	Applied Programming	4	3	2
DP1100	Digital Electronics	4	3	2
DR2410	Electronic CADD I	2	1	2
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
AE2301	Analog Electronics	4	3	3
CE2250	Analog Communications	4	3	3
CI1100	Electronic Instrumentation	3	2	2
CM2300	Written Communications	2	2	0
DP2400	Digital Microprocessors	4	3	2
DR2411	Electronic CADD II	2	1	2
MA2101	Mathematics	5	5	0
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
AE2210	Power Control Devices	3	3	6
AE2400	Problem Solving/Troubleshooting	2	0	4
CM2200	Oral Communications	2	2	0
EC1700	Engineering Economics	2	5	0
Semester 7		**Cr**	**Le**	**La**
AE3100	Analog IC's	4	3	3
AE3300	Industrial Control	4	3	2
CE3600	Digital Communications	4	3	3
DP3300	Microprocessor Interfacing	4	3	3
MP2400	Network Analysis	5	5	0
PR2650	Technical Thesis (Seminar)	0	1	0
Semester 8		**Cr**	**Le**	**La**
AE3301	Industrial Electronics II	4	3	3
CE3601	Digital Communications II	4	3	3
CG3400	Engineering Management	3	3	0
CP1150	Visual Basic	4	3	3
CP2170	Windows Server	4	3	3
CT3120	PC Configuration	4	3	3
PR2651	Technical Thesis (Project)	3	2	3

ENGINEERING TECHNOLOGY

Electronics Engineering Technology

The three year Electronics Engineering Technology Program follows the guidelines set by the Canadian Technology Accreditation Board has recently been awarded national level accreditation for the maximum five year term. The program is general in nature to ensure the graduate will have access to job opportunities in a variety of specialty areas. They include analog and digital communication systems, computer design, programming, configuration and networking, computer aided design and industrial instrumentation and process control.

Graduates completing this program are automatically eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland (AETTN), as well as any similar association in Canada. In addition, graduates can apply to Lakehead University and if accepted, receive full credit toward an engineering degree.

OBJECTIVES

The student will be able to:

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

EMPLOYMENT OPPORTUNITIES

The Electronics Engineering Technology program is designed to produce a well rounded student who will be capable of working in a variety of electronic related fields. Past graduates have attained employment in the areas of telecommunications, pulp and paper, computer sales, service and support, provincial agencies, federal agencies, consulting firms, business equipment servicing, school boards, industrial sales, Transport Canada, R & D and power companies.

SPECIAL EQUIPMENT REQUIRED

Graphics Calculator (Specifications available from the Registrar)
Standard Electronic Toolkit
Personal computer is strongly recommended

Geomatics Engineering Technology Co-op

Geomatics is the art and science of acquiring, analyzing, presenting, and managing geographical and spatial data. Geomatics includes the traditional surveying and mapping sciences together with new study areas such as Geographical Information Systems (GIS) and the satellite controlled positioning system the Global Positioning Systems (GPS). With the development of off-shore petroleum, management of the fishery, infrastructure and hydro development and the resulting expansion in the construction industry, the need for more and better trained Geomatics Engineering Technologists becomes apparent.

The three-year diploma level Geomatics Engineering Technology program is a cooperative education program. It is designed to train persons who will become the senior field members of land, hydrographic, geodetic or engineering survey teams or supervisors in digital data management, analysis and presentation.

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

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

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.

OBJECTIVES

1. To train the student for the Geomatics and construction industries at technologist level.
2. To develop an acceptable degree of competence in general surveying techniques.
3. To introduce the student to the developing branches of the Geomatics industry.
4. To prepare the student for further studies in preparation for certification as a Newfoundland and Labrador Land Surveyor.

CURRICULUM

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

Specific Education in all aspects of geomatics.

Extensive field training to provide experience with instrumentation.- & software, Surveying Camps.

EMPLOYMENT OPPORTUNITIES

Graduates generally find employment with various departments of the federal and provincial government, crown corporations, utility, construction engineering, oil exploration and surveying companies. For graduates who desire to further their careers in Geomatics, the University of New Brunswick awards a number of credits for this program toward a Bachelors Degree in Surveying Engineering.

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
EN1100	Environmental Science	2	3	2
SD1520	The Technologist & the Workplace	2	3	0
SU1310	Plane Surveying Basic	5	6	8
SU1500	Cartography	3	4	4
Semester 4		**Cr**	**Le**	**La**
CP1130	Computer Programming	2	1	2
EC1700	Engineering Economics	2	2	0
FT1240	Survey Field Camp	1	0	0
MA2100	Mathematics	5	5	0
SU1311	Plane Survey	4	4	6
SU1530	Digital Mapping	3	2	3
SU2500	Photogrammetry	4	3	2
Semester 5		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
CM2300	Written Communications	2	2	0
MA2120	Mathematics	4	3	2
SU1440	GIS I	3	2	3
SU1540	Hydrography I	4	3	3
SU2320	Geodetic Surveying	4	3	3
SU2530	Cadastral	4	3	2
Semester 6		**Cr**	**Le**	**La**
WC1300	Work term I	5	0	0
Semester 7		**Cr**	**Le**	**La**
CA2900	Municipal Engineering	3	2	3
CG3400	Engineering Management	3	3	0
GE1200	Geology	4	3	2
MA3120	Advanced Survey Mathematics	3	3	0
PR2230	Technical Thesis (Seminar)	0	1	0
SU1441	GIS II	4	3	3
SU2570	GPS & Remote Referencing	4	3	3
Semester 8		**Cr**	**Le**	**La**
WC1301	Work term II	5	0	0
Semester 9		**Cr**	**Le**	**La**
FT1250	Hydrographic Camp	1	0	0
PR2231	Technical Thesis	3	0	6
SU1541	Hydrography II	4	3	3
SU1570	Remote Sensing	3	2	2
SU3300	Geodesy & Map Project	4	3	3
SU3500	Adjustments	4	3	3

DIPLOMA

- **40 Months**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
CG1500	Work Methods & Measurement	4	6	4
EG1101	Engineering Graphics	2	2	3
SP2400	Safety Engineering	5	5	0
SP1200	Machine Shop Practice	1	0	5
Semester 4		**Cr**	**Le**	**La**
CF1100	Materials & Processes	3	3	1
CF2540	Mechanics of Solids	3	3	1
MA2100	Mathematics	5	5	0
SE1070	Human Factors Engineering	3	3	1
SP1700	CNC Machining I	3	2	2
SP2300	Quality Assurance	3	3	0
SP2510	Plant & Facility Layout	4	3	2
Semester 5		**Cr**	**Le**	**La**
WC1400	Co-op Work Term I	5	0	0
Semester 6		**Cr**	**Le**	**La**
CG3400	Engineering Management	3	3	0
CI1210	Instrumentation & Controls	3	2	2
DE1110	Applied Research	3	3	0
MA1670	Statistics	4	4	1
PS1330	Organizational Behaviour	4	4	0
SP2301	Quality Control	3	3	0
TD2100	Thermodynamics	3	3	1
Semester 7		**Cr**	**Le**	**La**
WC1401	Co-op Work term II	5	0	0
Semester 8		**Cr**	**Le**	**La**
CF1120	Materials and Processes	3	3	1
DE1200	Operations Research	3	3	0
EC1700	Engineering Economics	2	2	0
FM3100	Hydraulics and Pneumatics	3	3	1
FM3200	Machine Design	3	3	1
MA2130	Applied Mathematics	5	5	0
SP1400	Facilities Engineering	3	2	2
Semester 9		**Cr**	**Le**	**La**
WC2400	Co-op Work term III	5	0	0
Semester 10		**Cr**	**Le**	**La**
AC2280	Accounting	4	4	0
CG3500	Production Planning	3	3	0
DE3300	Information Systems Design	3	2	2
DE3410	Computer Integrated Manufacturing	4	3	2
FM2201	Mechanics (Dynamics)	3	3	1
LW1500	Law & Ethics	3	3	0
PR3711	Technical Thesis	4	1	2

Industrial Engineering Technology Co-op

Industrial Engineering Technologists rely on strong technical ability, good business judgement, 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. The program is a 40 month CAFCE (Canadian Association for Co-op Education) and CTAB (Canadian Technology Accreditation Board) accredited program.

OBJECTIVES

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

CURRICULUM

General Education consisting of Communication Skills, Math, Physics, Chemistry, Electrotechnology, Computers, and Engineering Graphics (CAD).

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

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

EMPLOYMENT OPPORTUNITIES

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

Manufacturing Operations Technology

The automation currently taking place in processing industries has major implications for prospective employees. Entry-level employees wishing to pursue a career in "Manufacturing Operations" will be required to have a more advanced entry-level education and training than was required of employees in the past.

The Manufacturing Operations Technology program is designed to provide graduates who will be equipped with the broad base of knowledge and skills needed to optimize manufacturing processes, improve product quality, and reduce costs. Typically, the graduates will work as process operators, technicians and managers in the process operations and production side of a variety of large scale industries, including pulp and paper, mineral processing, and petroleum refining. The skill set obtained by graduates from this program will also enhance the overall availability for expertise required in the small scale manufacturing industry sector, especially as these operations adapt automated processes.

The Manufacturing Operations Technology program has a strong Process Optimization and Quality Management focus relating to a concentration of manufacturing processes; specifically: pulp and paper manufacturing, mineral processing and petroleum refining. This core curriculum is supported and enhanced by courses which being together technological concepts and competencies from the fields of process control, automation, chemical and environmental engineering, mechanical systems, information technology, and electrical/electronics technology.

OBJECTIVES

1. To provide students with a general knowledge and understanding of processing industries, and with an academic and technical foundation from which to pursue technological expertise.
2. To provide students with technical competence in process manufacturing and with technical knowledge in the application, operation of machinery
3. To provide students with knowledge and understanding of the principles of process control, the applications of process control technology in general, and the overall relationship to quality control.
4. To provide students with a knowledge, understanding and some technical competence in environmental protection, balanced by an appreciation of mar-ket forces, cost control and accounting principles.
5. To provide students with knowledge and understanding of human relations in industrial settings and of modern organizational development principles, and to give them opportunities to develop and demonstrate interpersonal skills through written and oral communication.
6. To encourage students to work and communicate as a member of a team with other professionals, as well as supervise the work of technical and non-technical persons.
7. To train students to think and work independently.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum.
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.
   Note: Although all of the above High School Science courses are acceptable for entrance to Engineering Technology programs, the Physics and/or Chemistry streams are strongly recommended.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics ... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

DIPLOMA

- **Three years**
- **September start**
- **Corner Brook Campus**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
CH1120	Chemistry	4	3	2
CM1400	Communication Skills	3	3	0
ET1100	Electrotechnology	4	3	2
MA1100	Mathematics*	5	4	2
CT1150	Computer Fundamentals	3	2	3
PH1100	Physics	4	3	2

*Admission into the appropriate Mathematics course will be decided by the grade in high school math.
EITHER
Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1100
OR
Students who received a combined average of 70% in 2204 and 3204, or a pass in both of 2205 and 3205 can be exempted from MA1100.
The student must apply for the exemption.

		Cr	Le	La
Semester 2				
CH1121	Chemistry	4	3	2
CM1401	Communication Skills	3	3	0
EG1100	Engineering Graphics	3	2	3
ET1101	Electrotechnology	4	3	2
MA1101	Mathematics	5	5	0
PH1101	Physics	4	3	2
Semester 3 (Intersession I)				
ES1300	Manufacturing Processes I	4	6	6
MA1670	Statistics	4	8	0
SP2400	Safety Engineering	5	5	0
Semester 4				
CI1400	Industrial Controls I	3	2	2
EN2600	Environmental Abatements (Air)	3	3	0
FM2320	Fluid Mechanics	4	3	2
MA2100	Mathematics	5	5	0
MT2400	Mineral Processing I	2	2	0
PE2430	Plant Electrical Systems	3	2	3
TD2100	Thermodynamics I	3	3	1
Semester 5				
CH2720	Chemistry Analytical	3	2	2
CI1210	Instrumentation Controls and Automation	4	2	2
EN2220	Solid Waste Management	4	3	2
ES1301	Manufacturing Processes II	4	4	0
PE2800	Industrial Mechanical Systems	3	3	2
SI2300	Materials Science	4	3	1
TD3110	Thermodynamics II	3	3	0
Semester 6 (Intersession II)				
ES2300	Manufacturing Processes III	4	6	6
ES2301	Manufacturing Processes IV	4	6	6
Semester 7				
CI1401	Industrial Controls II	4	3	2
CI2520	Process Control Operations	4	3	3
EN2601	Environmental Abatements II (Water)	4	3	2
ES3300	Manufacturing Processes V	4	4	0
MT2401	Mineral Processing II	4	4	2
PR2680	Technical Thesis	3	0	3
SP2300	Quality Assurance	4	3	2
Semester 8				
AC2270	Managerial Accounting	3	3	0
CI2610	Process Optimization	3	2	3
CR1340	Computer Networking Operations	4	4	0
PR2681	Technical Thesis	3	2	3
PS2340	Organizational Behaviour	4	4	0
SP2301	Quality Control	3	3	0

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2- Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
EG1101	Engineering Graphics	2	2	3
MH1110	Mechanical Systems	4	8	2
SP2400	Safety Engineering	5	5	0
SP1200	Machine Shop Practice	1	0	5
Semester 4		**Cr**	**Le**	**La**
CF1100	Materials and Processes	3	3	1
CF2540	Mechanics of Solids	3	3	1
EC1700	Engineering Economics	2	2	0
MA2100	Mathematics	5	5	0
MH2310	Power Plant Components	5	5	1
SP1700	CNC Machining I	3	2	2
TD2100	Thermodynamics	3	3	1
Semester 5		**Cr**	**Le**	**La**
CF1120	Materials and Processes	3	3	1
FM2100	Fluid Mechanics	3	3	1
FM3100	Hydraulics and Pneumatics	3	3	1
MA2130	Applied Mathematics	5	5	0
MH2800	Process Systems	3	3	1
MH2801	HVAC Systems	3	3	1
SP1400	Facilities Engineering	3	2	2
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
WT1460	Work Placement	5	0	0
Semester 7		**Cr**	**Le**	**La**
CF2511	Strength of Materials	3	3	1
CI1210	Instrumentation & Controls	3	2	2
FM2201	Mechanics (Dynamics)	3	3	1
MH3310	Power Plant Systems	4	4	1
MH3320	Building System Design	4	4	1
SP2300	Quality Assurance	3	3	0
TD2120	Thermodynamics	3	3	1
Semester 8		**Cr**	**Le**	**La**
CG3400	Engineering Management	3	3	0
CI1211	Instrumentation & Controls	3	2	2
FM3200	Machine Design	3	3	1
MH4400	Refrigeration Systems	3	3	1
MH4500	Prime Movers	3	4	1
MH4600	Plant Systems Design	3	3	0
PR3711	Technological Thesis	4	1	2
TD3100	Applied Thermodynamics	3	3	1

ENGINEERING TECHNOLOGY

Mechanical Engineering Technology

Mechanical Engineering Technologists develop a diverse technical background, good "hands-on" aptitude, 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.

This program is nationally accredited by the Canadian Technology Accreditation Board and graduates are eligible for membership in the Association of Engineering Technicians and Technologists of Newfoundland. The designation Certified Engineering Technologist (CET) may be received after completion of two years of approved post graduate work experience. Graduates are also eligible for 3rd class power engineering certification.

OBJECTIVES

1. Through this program of study, graduates are equipped with the technical knowledge and "hands-on" skills required for:
2. The design, implementation, installation, operation, maintenance, and management of power generation systems, Heating Ventilation and Air Conditioning (HVAC) systems, and general mechanical support systems that are required for petroleum production systems, petroleum refineries, processing plants, office buildings and other residencies.
3. The development of mechanical working drawings and computer based models of mechanical systems using AutoCAD and related engineering analysis software.

CURRICULUM

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

An Intermediate and Advanced curriculum in the second and third years of study which consists of discipline specific courses such as Mechanics, Strengths, Thermodynamics, Materials and Processes, Machine Design, Engineering Graphics, Hydraulics and Pneumatics, Economics, Engineering Management, Quality Assurance, Maintenance, Machine Shop, Computer

Numerical Control (CNC), Machining Process Controls and Technological Thesis (Design Project).

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

EMPLOYMENT OPPORTUNITIES

The 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. Previous graduates have been successful in obtaining employment relevant to their field with such companies as HMDC, Syncrude, Schlumberger, Haliburton Services Ltd., J.B. Irving, the Iron Ore Company of Canada, INCO, Johnson Controls, and BFL Consultants.

Mechanical Engineering Technology (Manufacturing) Co-op

Mechanical Engineering Technologists, who complete a studies focus in manufacturing, are proficient in the specification, implementation, operation, maintenance and supervision of manufacturing systems and personnel. These technologists are prepared to assume the role of decision maker early in their careers in both the traditional and advanced manufacturing sectors. The knowledge of core mechanical engineering principles, above average problem solving ability, and superior "hands-on" skills also make these graduates well suited to employment in related industries.

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

Graduates are eligible for membership with the Association of Engineering Technicians and Technologists of Newfoundland (AETTN) and may receive designation as Certified Engineering Technologist (CET) following two years of approved post graduate experience.

CURRICULUM

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

An Intermediate and Advanced curriculum in the second and third years of study which consists of discipline specific courses such as Mechanics, Strengths, Materials and Processes, Machine Design, Hydraulics and Pneumatics, Engineering Management, Quality Assurance, Maintenance, Computer Numerical Control (CNC), Tool Design, and Computer Integrated Manufacturing.

EMPLOYMENT OPPORTUNITIES

Career opportunities for graduates of this program exist with consulting firms,

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

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
CG1500	Work Methods & Measurement	4	6	4
EG1101	Engineering Graphics	2	2	3
SP1200	Machine Shop Practice	1	0	5
SP2400	Safety Engineering	5	5	0
Semester 4		**Cr**	**Le**	**La**
CF1100	Materials and Processes	3	3	1
CF2540	Mechanics of Solids	3	3	1
EC1700	Engineering Economics	2	2	0
MA2100	Mathematics	5	5	0
SP1700	CNC Machining I	3	2	2
SP1800	Precision Metrology	4	3	2
SP2300	Quality Assurance	3	3	0
Semester 5		**Cr**	**Le**	**La**
CF1120	Materials and Processes	3	3	1
FM2100	Fluid Mechanics	3	3	1
FM3100	Hydraulics and Pneumatics	3	3	1
FM3200	Machine Design	3	3	1
MA2130	Applied Mathematics	5	5	0
SP1400	Facilities Engineering	3	2	2
SP1701	CNC Machining II	4	3	3
Semester 6		**Cr**	**Le**	**La**
WC1900	Co-op Work Term I	5	0	0
Semester 7		**Cr**	**Le**	**La**
CG3500	Production Planning	3	3	0
DE3410	Computer Integrated Manufacturing	4	3	2
DR3710	Tool Design	3	3	2
DR3810	Advanced Processes	3	2	3
EG2110	Engineering Graphics	3	2	2
FM2201	Mechanics (Dynamics)	3	3	1
LW1500	Law and Ethics	3	3	0
Semester 8		**Cr**	**Le**	**La**
WC1901	Co-op Work Term II	5	0	0
Semester 9		**Cr**	**Le**	**La**
CG3400	Engineering Management	3	3	0
CI1210	Instrumentation and Controls	3	2	2
FM3220	Machine Design	3	3	1
MA1670	Statistics	4	4	1
PR3711	Technological Thesis	4	1	2
SP2301	Quality Control	3	3	0
TD2100	Thermodynamics	3	3	1

DIPLOMA

- **Three years**
- **September start**
- **Ridge Road Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semesters 1 and 2 - Refer to ET (First Year)				
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
CG3400	Engineering Management	3	6	0
CH2330	Petroleum Chemistry I	3	5	3
DR2520	Mechanical Drafting	3	3	7
GE1500	Petroleum Geology I	2	3	3
Semester 4		**Cr**	**Le**	**La**
CF2520	Strength of Materials	4	3	2
CH2331	Petroleum Chemistry II	4	3	3
CM2200	Oral Communications	2	2	0
CM2300	Written Communications	2	2	0
FM2300	Fluid Mechanics	3	2	2
GE1501	Petroleum Geology II	4	3	3
MA2100	Mathematics	5	5	0
Semester 5		**Cr**	**Le**	**La**
CI1210	Instrumentation Controls and Automation	3	2	2
EC2600	Exploration Economics	2	2	0
FT1600	Drilling Camp	P/F		
GE2500	Petroleum Geology III	4	3	3
MA2110	Applied Mathematics	4	4	0
PM2100	Drilling Technology I	3	2	3
PM2500	Facilities Engineering	4	3	2
TD2110	Thermodynamics	3	3	1

Drilling Camp
At the end of Semester 5, students will complete a one week drilling camp during which they will apply learned theory through practical "hands-on" exercises using an actual drilling system.

Semester 6 (Intersession II)		**Cr**	**Le**	**La**
WT1400	Work term	5	0	0
Semester 7		**Cr**	**Le**	**La**
PH3100	Geophysics	3	2	2
PM2101	Drilling Technology II	3	2	3
PM2200	Petroleum Production I	5	4	3
PM2300	Reservoir I	3	2	3
PM2501	Facilities Engineering	4	3	2
PR2800	Technological Thesis (Seminar)	1	1	0
TD3200	Petroleum Thermodynamics	3	2	2
Semester 8		**Cr**	**Le**	**La**
EN1300	Environmental Technology	3	3	0
PM2201	Petroleum Production II	5	4	2
PM2301	Reservoir II	5	4	3
PM2400	Logging and Formation Evaluation	5	4	3
PM3100	Drilling Technology III	2	0	4
PR2801	Technological Thesis (Project Analysis)	3	3	0
Semester 9 (Intersession III)		**Cr**	**Le**	**La**
PM2401	Production Logging & Applications	2	3	3
PM3200	Petroleum Production III	3	5	0
PR3800	Technological Thesis	6	0	12
SP2410	Safety Engineering Technology	2	5	0

Petroleum Engineering Technology

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 discoveries of new oil and gas resources, particularly along the east coast and in the Arctic regions, and with proper management and development policies, this goal may be attainable. Recent 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.

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

OBJECTIVES

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

CURRICULUM

General education consisting of English (written and oral), Mathematics, Physics, Chemistry, Electrotechnology, Computers, Engineering Graphics and Student Success. Specialized training in all subjects directly related to the petroleum industry. Extensive field (industry) experience to support and enhance the on-campus phases of training.

EMPLOYMENT OPPORTUNITIES

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

NOTICE

The following conditions apply to work term WT1400:

Sequence
The work term must be completed in the sequence indicated in the College Calendar. Any variation from this sequence must be approved by the Campus Administrator. The deadline for receipt of requests documenting reasons for departure from this norm must be submitted to the Campus Administrator of the Ridge Road Campus not later than the last working day in January. Students will receive a failing grade if they do not comply with the above.

Eligibility
In order to be eligible for WT1460 work term a student must meet the following criteria:
- Attain 100% credits in all subjects from the first four semesters.
- Attain a cumulative G.P.A. of 2.00 or higher.

Students not meeting these criteria may apply for special permission to complete the work term. Application must be made to the Campus Administrator not later than the last working day of January for consideration under this clause.

It is the responsibility of each student to obtain suitable employment for the work term. The College will assist with contacts and information as much as possible; however, the onus is on the student to obtain employment.

All work term employment must be approved by the work term coordinator prior to the commencement of employment.

A student will be exempted from the work term only for medical or exceptional circumstances. Evidence to support such exemptions must be presented to the work term coordinator prior to commencement of the work term. Exemptions from the work term requires approval of the Campus Administrator.

A report must be submitted for each work term -- detail and content of the report to be outlined by the work term coordinator in conjunction with the Petroleum Engineering Technology section. This report must be submitted to the appropriate instructors on or before the deadline date. In special circumstances, permission to submit a late report may be granted by the work term coordinator. Late reports will not be graded unless prior permission is obtained.

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

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

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

Welding Engineering Technician

This program is designed to develop the skills and knowledge required to ensure that welding processes, procedures, and weldments conform to engineering specifications and related codes.

The program is supported by modern shop and laboratory facilities for instruction in Welding, Materials, Science, Nondestructive Testing and Computer Aided Design/Computer Aided Manufacturing (CAD/CAM).

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

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from: 3101, 3102, 3103, 3112. 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290, (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212. 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.
   Note: Although all of the above High School Science courses are acceptable for entrance to Engineering Technology programs, the Physics and/or Chemistry streams are strongly recommended.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics ... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

EMPLOYMENT OPPORTUNITIES

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

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

DIPLOMA

- **Two years**
- **September start**
- **Burin Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CH1120	Chemistry	4	3	2
CM1400	Communication Skills	3	3	0
ET1100	Electrotechnology	4	3	2
MA1100*	Mathematics	5	4	2
CT1150	Introduction to Computers for Technology	3	2	3
PH1100	Physics	4	3	2

*Admission into the appropriate Mathematics course will be decided by the grade in high school math.
EITHER
Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1100
OR
Students who received a combined average of 70% in 2204 and 3204, or a pass in both of 2205 and 3205 can be exempted from MA1100.
The student must apply for the exemption.

Semester 2		**Cr**	**Le**	**La**
CF1100	Materials & Processing I	3	3	1
CM1401	Communication Skills	3	3	0
EG1100	Engineering Graphics	3	2	3
ET1101	Electrotechology	4	3	2
MA1101	Mathematics	5	5	0
WD1100	Welding SMAW I	4	2	6

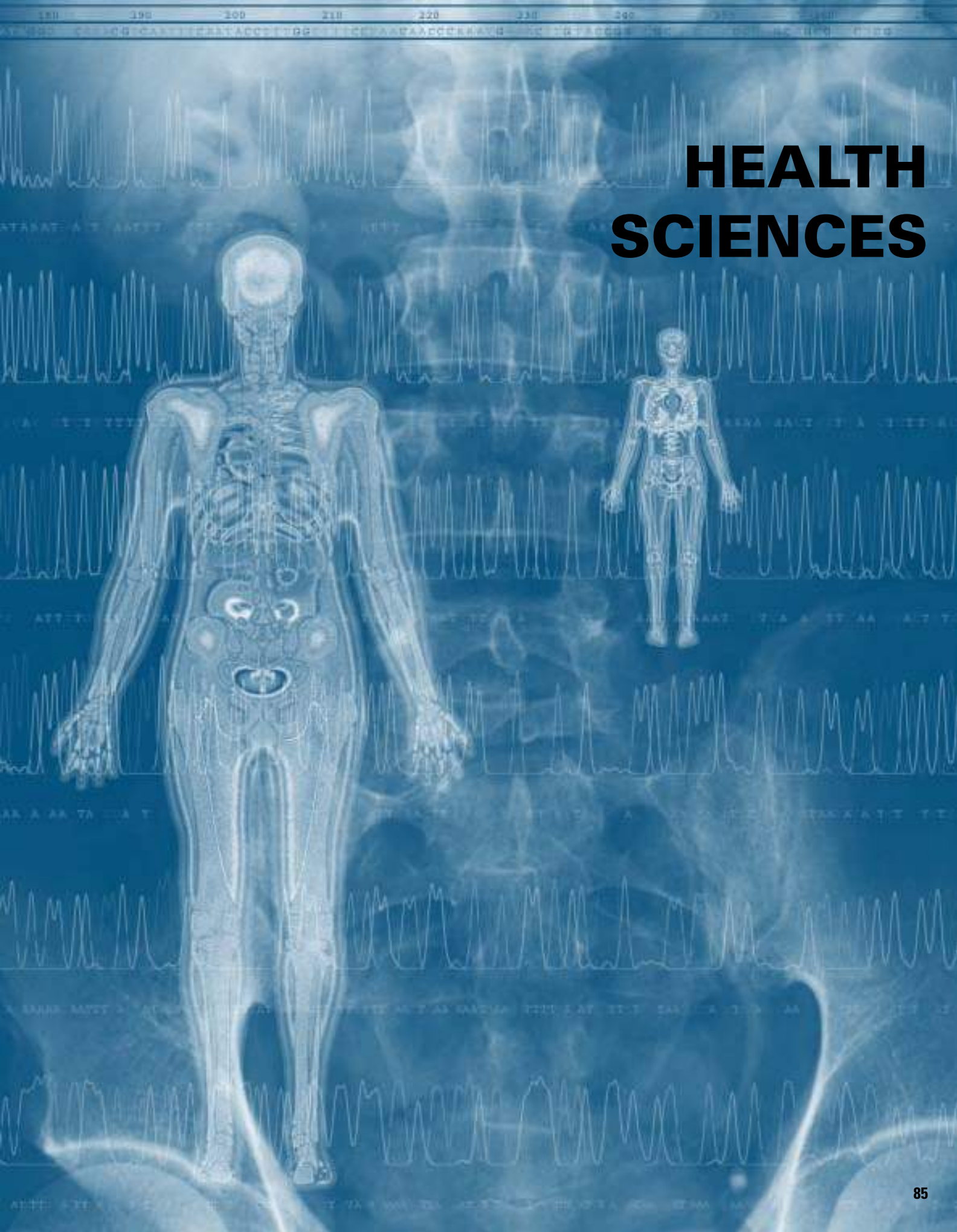
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
MP2700	Electrical Power Sources	2	2	4
SP1300	Radiation Safety	1	2	1
WD1101	Welding Technology and Processes II	4	4	6

Semester 4		**Cr**	**Le**	**La**
CF1101	Materials & Processing II	3	3	1
CF2510	Strength of Materials I	3	3	1
EG1300	Engineering Graphics	2	0	5
MA2100	Mathematics	5	5	0
SP2310	Quality Control & Inspection I	3	2	3
WD2100	Welding GMAW/FCAW	4	2	6

Semester 5		**Cr**	**Le**	**La**
EC1710	Engineering Economics and Supervision	3	3	0
CF2511	Strength of Materials II	3	3	1
SP2311	Quality Control and Inspection II	3	2	3
WD2101	Welding Technology & Processes IV	4	2	6
WD2200	Welding Codes	2	2	0
WD2300	Welding Failure Analysis	3	2	2
WD2400	Welding Metallurgy	4	4	0

Semester 6 (Intersession II)		**Cr**	**Le**	**La**
DR3300	Manufacturing Technology	2	2	6
WD3100	Welding Cost Analysis	4	4	16

HEALTH SCIENCES



Health Sciences Programs

OBJECTIVES

1. To provide education in the Allied Health Sciences as considered necessary by the Government, the College, registering associations and the community.
2. To graduate well trained personnel who can serve their employers and the community with the highest degree of competence.
3. To develop in students the ability to freely communicate with their fellow workers in the allied health professions.
4. To promote professionalism and a high level of responsibility in the student.
5. To impress on students the vital importance of maintaining at all times a high level of competence in the performance of their duties.
6. To foster in students the importance of maintaining up-to-date knowledge in their profession.
7. To provide continuing education programs for graduates.

NOTICE

Prospective students should NOTE CAREFULLY that while the College may admit students to a course of studies in Health Sciences, the right to practice is granted only through the appropriate authority of the Province in conjunction with national registration/ certification bodies. Applicants with prior convictions or offenses, or mental/physical disabilities should communicate with the appropriate organization involved.

DIAGNOSTIC ULTRASONOGRAPHY
The Canadian Society of Diagnostic Medical Sonographers

MEDICAL LABORATORY SCIENCES
The Canadian Society for Medical Laboratory Science

MEDICAL RADIOGRAPHY
The Canadian Association of Medical Radiation Technologists

RESPIRATORY THERAPY
The Canadian Society of Respiratory Therapists

HEALTH SCIENCES PROGRAMS EDUCATION REGULATIONS

Note: Students accepted into programs in the School of Health Sciences must submit an official Pre-admission Physical Examination form and proof of current immunization status prior to registration

Note: The general rules and regulations of the College as stated in the College's Calendar shall govern, except in instances specifically covered by these regulations.

EXAMINATIONS AND PROMOTIONS

1. 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.
2. Students have the right to appeal a decision made with respect to their promotions. Appeals will be heard by the appeals committee of the Academic Council.
3. To be promoted a student must, in addition to obtaining the requisite academic standard, complete and deliver all laboratory, assignment, and work reports as required.
4. Medical Sciences I (General)
   i. The College regulations govern promotionfrom semester 1 to semester 2.
   ii. Students must pass all first and second semester courses (minimum of 50%) and have a minimum G.P.A. of 2.00 to be eligible for promotion from second semester to third semester.
   iii. 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.
5. Medical Sciences I (General)
   Promotion from semester 2 to semester 3 will be governed by the following:
   i. Students will compete for places in the third semester of the programs.
   ii. Competition will be based on academic standing in semesters 1 and 2 of the program.
   iii. The student's weighted average at the end of the second semester will be used to calculate academic standing for purposes of competition.
   iv. In the case of students who have been exempted from courses in the first and second semester, the mark obtained in the course completed by the student at another post-secondary institution or other College program will be used in calculating the weighted average as if the course had been completed as part of the Medical Sciences I (General) program.
6. Course Pass Mark
   i. Medical Sciences I (General) -50%
   ii Diagnostic Ultrasonography, Medical Laboratory Sciences II and III, Medical Radiography II and III, Respiratory Therapy II and III - 60%.
7. Promotion from semester 5 to semester 6.
   i. 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).
8. Students may be required to withdraw from the program at any time if, in the opinion of Academic Council, they are unlikely to profit from continued attendance.
9. Students enrolled in three-year Health Sciences programs will be permitted a maximum of one additional year to complete their program of studies and 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.

Diagnostic Ultrasonography

The rapid growth of ultrasound in the diagnosis of specific disease processes and obstetrical conditions has produced a demand in Newfoundland and Labrador and other provinces for qualified sonographic technologists.

During the one-year program the student will be required to follow a rotation schedule through participating hospitals which will provide a broad exposure to the different sonographic specialties.

OBJECTIVES

1. To familiarize students with the use of all sonographic equipment within the assigned institutions.
2. To provide students with adequate practise to become skilled in all phases of the various ultrasonic examinations.
3. To train students in the recognition of the ultrasonic image characteristics which are diagnostically acceptable.
4. To train students to recognize many of the pathologies and conditions which may appear on the ultrasonic image.

Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland.

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 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 to the Registrar's Office at the College. Students are accepted on a first-come first-served basis provided they meet the entrance requirements.

NOTICE

Prospective students should NOTE CAREFULLY that while the College may admit students to a course of studies in the School of Health Sciences, the right to practice is granted only through the appropriate authority of the Province in conjunction with national registration/certification bodies. Applicants with prior convictions or offenses, or mental/physical disabilities should communicate with the appropriate organization involved.

DIAGNOSTIC ULTRASONOGRAPHY
The Canadian Society of Diagnostic Medical Sonographers

ADVANCED DIPLOMA

- **One year**
- **September start**
- **Prince Philip Drive Campus**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1		**Cr**	**Le**	**La**
UL4100	Ultrasound Physics	4	4	0
UL4300	Basic Scanning I	P/F	0	9
UL4400	Abdomen	6	6	0
Semester 2		**Cr**	**Le**	**La**
UI4200	Obstetrics	6	6	0
UL4220	Gynecology	2	2	0
UL4301	Basic Scanning II	P/F	0	3
UL4600	Clinical Training	P/F	0	21
Semester 3		**Cr**	**Le**	**La**
UI4500	Superficial Structures	2	2	0
UL4601	Clinical Training	P/F	0	35

Practical training will take place at affiliated hospitals of the Health Care Corporation of St. John's. Assessment of the practical abilities will be made on each student at regular intervals during the clinical training period. Graduates of the program will write the examinations set by the American Registry of Diagnostic Medical Sonographers (ARDMS).

Students must possess a valid St. John Ambulance Emergency First Aid Certificate and a Basic Cardiopulmonary Resuscitation Certificate to be eligible for a diploma from the College.

DIPLOMA

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

HEALTH SCIENCES

Medical Laboratory Sciences

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1400	Communications or CM1120 English	3	3	0
MA1700 or MA1100 Mathematics		4	3	2
PH1100 or PH1120 Physics		4	3	2
CH1200 or CH1130 Chemistry		4	3	3
BL1500 or BL1170 Biology		4	3	3

Semester 2		**Cr**	**Le**	**La**
CM1401	Communications or CM1145 English	3	3	0
MA1670	Statistics	4	3	2
PH1200 or PH1121 Physics		4	3	2
CH1201 or CH1131 Chemistry		4	3	3
BL1501	Biology	4	3	3

At the end of the second semester, students will be selected into one of the Health Sciences technology programs. Admission will be competitive and based on the student's weighted average.

Semester 3 (Intersession I)		**Cr**	**Le**	**La**
BL2100	Biology	2	3	3
MC1150	Productivity Tools I	4	6	4
PS1100 or PS1150 Psychology		2	4	0
CH2200 or CH1150 Chemistry		2	3	3

Semester 4		**Cr**	**Le**	**La**
BL2400	Microbiology	4	3	4
CH2320	Organic Chemistry Biochemistry	4	4	0
CH2520	Basic Laboratory Principles	2	1	2
ML1200	Hematology	4	3	3
ML1300	Introduction to Histological Technique	3	2	2
ML2400	Introduction to Blood Group Systems	3	2	2

Semester 5		**Cr**	**Le**	**La**
BL2401	Clinical Microbiology	4	3	4
CH2511	Clinical Chemistry	4	3	2
ML1211	Hematology	3	2	2
ML1310	Introduction to Biological Staining	3	2	2
ML1500	Introduction to Transfusion Science	3	3	2
SD1630	Working in Health Care	3	3	0

Semester 6 (Intersession II*)		**Cr**	**Days**
BL3410	Clinical Microbiology	2	7
CH3510	Clinical Chemistry	2	7
ML2210	Hematology	2	7
ML2310	Histology	2	7
ML2510	Transfusion Science	2	7

*Courses will be taught in block format (7 days per course)

Semester 7		**Cr**	**Wks**
BL3411	Clinical Microbiology	3	3
CH3511	Clinical Chemistry	3	3
ML2211	Hematology	3	3
ML2311	Histology	3	3
ML2511	TransfusionScience	3	3

Courses will be taught in block format (3wks per course)

Semester 8		**Cr**	**Wks**
BL4410	Clinical Microbiology	3	3
CH4510	Clinical Chemistry	3	3
ML3210	Hematology	3	3
ML3310	Histology	3	3
ML3510	TransfusionScience	3	3

Courses will be taught in block format (3wks per course)

Students in the eighth semester of the program will be assigned to one of the affiliated hospitals: Health Care Corporation of St. John's, Carbonear General Hospital, James Paton Memorial Hospital, Central Newfoundland Regional Health Centre, Western Memorial Hospital.

The program is designed to train medical laboratory technologists. As a member of the health care team the technologist performs the laboratory procedures which are used by physicians as important aids to the diagnosis and treatment of the patient. Laboratory screening programs are being developed to alert the physician to disease processes which, though not yet clinically evident, are nonetheless pre-sent in the patient. The increasing use of sophisticated and new laboratory procedures and the rising demand for health services has created a need for highly trained Medical Laboratory Technologists.

Note: Applicants wishing to pursue a career in Medical Laboratory Sciences, Medical Radiography or Respiratory Therapy will be considered for admission to a common two-semester program. Selection to the third semester (first Intersession) will be competitive and will occur at the end of the second semester.

OBJECTIVES

1. To provide the basic knowledge and skills necessary to perform clinical laboratory procedures.
2. To develop the ability to communicate effectively with the patient and with other members of the health team.
3. To maintain a high level of professional conduct in the performance of duty.

CURRICULUM

The curriculum for this program is designed to encompass three years of training. The first two years are spent at the College and the emphasis is placed on academic and theoretical training whereby the general and specialized subject matters are integrated, as much as possible.

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 may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland.

Semester 9 (Intersesstion III)		**Cr**	**Le**	**La**
SD2610	Interdisciplinary Studies*	5	5	

*One week per discipline

Students must possess a valid St. John Ambulance Emergency First Aid Certificate and Basic Cardiopulmonary Resuscitation Certificate to be eligible for a diploma from the College.

ENTRANCE REQUIREMENTS

Health Sciences -Effective Sept. 1, 2001

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) chosen from two of:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream with an overall 60% average including the following courses:

Communication Skills .... from one of the following:

a. Communications (minimum of 60%) IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222.
b. Mathematics (minimum of 60%) from one of the following sections:
   i. IM3212, IM3213 and IM3216
   ii. IM3219
c. Science - from two of the following sections:
   i. Biology IB3113, IB3214, IB3115, IB3316
   ii. Chemistry IH3215, IH3116, IH3117, IH3118
   iii. Physics IP3111, IP3112, IP3215, IP 3216
   iv. Earth Sciences IS3212, or IS3213 or IP3214

OR

Applicants who do not meet the entrance requirements, and are 19 years of age or older, may be considered on an individual basis under the Mature Student Clause.

NOTICE

Prospective students should NOTE CAREFULLY that while the College may admit students to a course of studies in the School of Health Sciences, the right to practice is granted only through the appropriate authority of the Province in conjunction with national registration/certification bodies. Applicants with prior convictions or offenses, or mental/physical disabilities should communicate with the appropriate organization involved.

MEDICAL LABORATORY SCIENCES

The Canadian Society for Medical Laboratory Science

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

Medical Radiography

Modern medical technology utilizes many applications of x-rays in the diagnosis and treatment of diseases. In keeping with the demands for these applications in a rapidly changing technological world, it is essential that high standards in the training of radiography technologists be maintained.

The radiography technologist is a valued member of the paramedical profession and as such becomes an important member of the staff in a hospital, clinic or research centre. The radiography technologist is responsible for the production and development of radiographs while providing quality care for patients entrusted to his/her care during radiological procedures. These radiological procedures may include a variety of examinations from the more simple basic examinations to those which are more complex requiring the use of highly specialized, sophisticated, and computerized equipment.

The techniques required in medical radiography dictate a high degree of skill and the qualified technologist plays an important role in the early diagnosis, control and treatment of diseases. The radiography technologist will be a person having a keen sense of responsibility, a high degree of integrity, compassion and empathy for the sick, combined with desire to serve towards the prevention and treatment of human diseases. The program is conducted at both the College and at the Health Care Corporation of St. John's. During the training the student will receive intensive theoretical instruction supplemented with practical training in the hospitals.

Note: Applicants wishing to pursue a career in Medical Laboratory Sciences, Medical Radiography or Respiratory Therapy will be considered for admission to a common two-semester program. Selection to the third semester (first Intersession) will be competitive and will occur at the end of the second semester.

OBJECTIVES

1. To provide technical proficiency in all aspects of medical radiography.
2. To develop a sense of professionalism and responsibility.
3. To provide comprehensive knowledge of the hazards involved and appropriate protection methods.
4. To provide the community with trained personnel who can serve their employers and the patient with the highest degree of competence.

CURRICULUM

The first year of the program is academic, combining general and specialized subject material. The second year is specialized with emphasis upon Medical Radiography. Classroom and laboratory sessions are supplemented by weekly assignments at the Health Care Corporation of St. John's.

The clinical phase of the program is designed to train the student in all the 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 aims of this portion of the program are:

1. To ensure that the student can accurately and confidently perform the many and 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 three semesters of training. The program is conducted at sites of the Health Care Corporation of St. John's. Students will be assigned to rotate through the four sites.

Students will receive instruction by the clinical instructors in radiographic procedures which can best be demonstrated and observed under clinical conditions, will receive review lectures, and will be evaluated academically and clinically to determine the students eligibility to write national examinations.

Students will follow a rotation schedule designed to provide broad clinical exposure to the different radiographic specialties. The aim of this rotation is to expand the students practical knowledge relative to radiographic procedures and techniques which are not normally performed in any one particular site.

Note: Students who graduate before January 1, 2005, will receive a diploma from the College and will be considered eligible to write the examinations set by the Canadian Association of Medical Radiation Technologists for national certification. Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland. Completion of the degree program will be mandatory effective January 1, 2010.

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DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1400	Communications or CM1120 English	3	3	0
MA1700 or MA1100	Mathematics	4	3	2
PH1100 or PH1120	Physics	4	3	2
CH1200 or CH1130	Chemistry	4	3	3
BL1500 or BL1170	Biology	4	3	3
Semester 2		**Cr**	**Le**	**La**
CM1401	Communications or CM1145 English	3	3	0
MA1670	Statistics	4	3	2
PH1200 or PH1121	Physics	4	3	2
CH1201 or CH1131	Chemistry	4	3	3
BL1501	Biology	4	3	3

At the end of the second semester, students will be selected into one of the Health Sciences technology programs. Admission will be competitive and based on the student's weighted average.

Semester 3 (Intersession I)		**Cr**	**Le**	**La**
BL2100	Biology	2	3	3
MC1150	Productivity Tools I	4	6	4
PS1100 or PS1150	Psychology	2	4	0
PH1201	Physics	2	4	2
Semester 4		**Cr**	**Le**	**La**
MX2100	Radiographic Anatomy	3	3	0
MX2110	Radiographic Technique	5	4	2
MX2200	Image Recording	4	3	2
MX2310	Apparatus & Accessories	3	3	0
MX2400	Patient Care	3	3	0
PH2200	Radiation Physics	3	3	0
SD1620	Clinical Orientation	0	0	3
Semester 5		**Cr**	**Le**	**La**
MX2101	Radiographic Anatomy	3	4	0
MX2120	Radiographic Technique	5	4	2
MX2201	Image Recording	4	3	2
MS2301	Apparatus & Accessories	5	4	4
MX2500	Radiation Protection & Radiobiology	3	3	0
SD1621	Clinical Orientation	0	0	3
Semester 6, 7, and 8*		**Cr**	**Wks**	
MX3200	Clinical Radiography I	16	16	
MX3210	Clinical Radiography II	16	16	
MX3220	Clinical Radiography III	16	16	

*Students rotate through the sites of the Health Care Corporation of St. John's.

Students must possess a valid St. John Ambulance Emergency First Aid Certificate and Basic Cardiopulmonary Resuscitation Certificate to be eligible for a Diploma from the College.

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ENTRANCE REQUIREMENTS

Health Sciences – Effective Sept. 1, 2001

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) chosen from two of
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream with an overall 60% average including the following courses:

Communications Skills …. from one of the following:

a. Communications (minimum of 60%) IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222.
b. Mathematics (minimum of 60%) from one of the following courses:
   i. IM3212, IM3213 and IM3216
   ii. IM3219
c. Science – from two of the following sections:
   i. Biology IB3113, IB3214, IB3115, IB3316
   ii. Chemistry IH3215, IH3116, IH3117, IH3118
   iii. Physics IP3111, IP3112, IP3215, IP3216
   iv. Earth Sciences IS3212, or IS3213 or IS3214

OR

Applicants who do not meet the entrance requirements, and are 19 years of age or older, may be considered on an individual basis under the Mature Student Clause.

NOTICE

Prospective students should NOTE CAREFULLY that while the College may admit students to a course of studies in the School of Health Sciences, the right to practice is granted only through the appropriate authority of the Province in conjunction with national registration/certification bodies. Applicants with prior convictions or offenses or mental/physical disabilities should communicate with the appropriate organization involved.

MEDICAL RADIOGRAPHY

The Canadian Association of Medical Radiation Technologists.

Occupational Therapist Assistant/ Physiotherapist Assistant

The Occupational Therapist Assistant and Physiotherapist Assistant Programs prepare graduates for work in acute care, long term care, and community care settings. The Occupational Therapist Assistant and the Physiotherapist Assistant work under the direction of either an Occupational Therapist or Physiotherapist. They function as members of multi disciplinary teams and assist with implementing treatment programs to restore, maintain and/or enhance an individual's level of functional independence. The programs are offered through the College's Distributed Learning Service. Each program consists of thirteen courses available on the Internet plus a nine week field placement. The Distributed Learning format enables learners to take part in education without the restraints of geography and 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.

OBJECTIVES

1. To understand the scope of practice and the responsibilities inherent in the role of an assistant to Occupational Therapists and/or Physiotherapists,
2. To understand and apply the principles of rehabilitation in the performance of their duty,
3. To implement the components of the treatment plan as delegated by the Occupational Therapists and/or Physiotherapists,
4. To perform delegated therapeutic skills safely and effectively under the supervision of the Occupational Therapist or Physiotherapist,
5. To observe and report change, to use sound judgements, and problem-solving skills in the performance of their duty,
6. To develop skills so that the assistant will be able to work in an Occupational Therapy or Physiotherapy service in a community and/or institutional setting,
7. To participate as a member of the multidisciplinary health care team through the use of effective communication and the development of positive working relationships.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (2 credits) chosen from
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Environmental Science: 3213, 3209
4. Electives (2 additional credits) chosen from any of the remaining 3000 level courses offered in the Senior High School Program.

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream with an overall 60% average including the following courses:
Communication Skills .... from one of the following:

a. Communications (minimum of 60%) IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222.
b. Mathematics (minimum of 60%) from one of the following sections:
   i. IM3212, IM3213 and IM3216
   ii. IM3219
c. Science - from one of the following sections:
   i. Biology IB3113, IB3214, IB3115, IB3316
   ii. Chemistry IH3215, IH3116, IH3117, IH3118
   iii. Physics IP3111, IP3112, IP3215, IP 3216
   iv. Earth Sciences IS3212, or IS3213 or IP3214

OR

Applicants who do not meet the entrance requirements, and are 19 years of age or older, may be considered on an individual basis under the Mature Student Clause.

CERTIFICATE

- **Length of program varies**
- **September start**
- **Prince Philip Drive through @College Distributed Learning Service**

COURSES

The programs consist of thirteen courses plus a nine week field placement.

CODE	TITLE	Hrs/wk Cr Le La
BL1320	Anatomy and Physiology	4
CM1230	Communications for Rehabilitation Assistants	3
MC1150	Productivity Tools I	4
PS2220	Developmental Phychology	3
SD1630	Working in Health Care	3
TA1110	Orientation to Rehabilitation	4
TA1210	Normal Functional Movement	5
TA1310	The Health Care System	2
TA1510	Gerontology	2
TA2110	Disabling Conditions	4
TA2210	Communication Disorders in Rehabilitation	2
TA2510	Psychiatric Disorders	2

Discipline Specific Courses

OCCUPATIONAL THERAPIST ASSISTANT

TA2420	Therapeutic Skills for OTA	7
TA2720	OTA Practical Experience	P/F 9wks

PHYSIOTHERAPIST ASSISTANT

TA2620	Therapeutic Skills for PTA	7
TA2730	PTA Practical Experience	P/F 9wks

Courses are offered as follows. Students should refer to course descriptions for prerequisites.

September - December
BL1320, SD1630, TA1110, TA1310, TA1510, TA2720, TA2730, MC1150

January - April
PS2220, TA1210, TA2110, TA2210, TA2510, MC1150

May - June
CM1230, MC1150, TA2420, TA2620

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1400	Communications or CM1120 English	3	3	0
MA1700 or MA1100	Mathematics	4	3	2
PH1100 or PH1120	Physics	4	3	2
CH1200 or CH1130	Chemistry	4	3	3
BL1500 or BL1170	Biology	4	3	3
Semester 2		**Cr**	**Le**	**La**
CM1401	Communications or CM1145 English	3	3	0
MA1670	Statistics	4	3	2
PH1200 or PH1121	Physics	4	3	2
CH1201 or CH1131	Chemistry	4	3	3
BL1501	Biology	4	3	3

At the end of the second semester, students will be selected into one of the three technology programs. Admission will be competitive and based on the student's weighted average.

Semester 3 (Intersession I)		**Cr**	**Le**	**La**
BL2100	Biology	2	3	3
MC1150	Productivity Tools I	4	6	4
PS1100 or PS1150	Psychology	2	4	0
CH2200 or CH1150	Chemistry	2	3	3
Semester 4		**Cr**	**Le**	**La**
BL2320	Cardiopulmonary Physiology	6	6	0
BL2410	Microbiology	3	3	0
RT2200	Gas Supply & Control	5	4	3
RT2300	Pharmacology	3	3	0
RT2450	Respiratory Therapy Procedures	3	2	2
SD1610	Clinical Orientation	0	0	3
Semester 5		**Cr**	**Le**	**La**
RT2230	Mechanical Ventilators	4	3	3
RT2220	Mechanical Ventilation	3	3	3
RT2310	Anesthesia	3	3	0
RT2440	Neonatal/Pediatric Respiratory Care	2	2	0
RT2500	Cardiopulmonary Diagnostics	3	3	0
SD1630	Working in Health Care	3	3	0
SD1611	Clinical Orientation	0	0	3
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
RT2600	Advanced Life Support	4	3	6
RT3400	Comprehensive Respiratory Care	9	3	16

Semester 7 and 8		**Cr**	**Wks**
RT2800	Adult Care I	13	13
RT2801	Adult Care II	13	12
RT2900	Pediatric Neonatal Care	13	13
RT3100	Clinical Elective/Review	P/F	2

During the third year of the program students will rotate through training sites of the Health Care Corporation of St. John's.

Students must possess a valid St. John Ambulance Emergency First Aid Certificate and a Basic Cardiopulmonary Resuscitation Certificate to be eligible for Diploma from the College.

HEALTH SCIENCES

Respiratory Therapy

The Respiratory Therapist will, under the supervision of a physician, assist in the diagnosis, treatment and management of cardiopulmonary and associated disorders, and is employed in active treatment health care facilities as an integral part of the health care team.

Note: Applicants wishing to pursue a career in Medical Laboratory Sciences, Medical Radiography or Respiratory Therapy will be considered for admission to a common two-semester program. Selection to the third semester (first Intersession) will be competitive and will occur at the end of the second semester.

OBJECTIVES

1. Explain clearly the theory behind all procedures outlined in the Syllabus of Studies of the Canadian Society of Respiratory Therapists.
2. Apply theoretical knowledge to clinical practice.
3. Perform all procedures outlined in the Syllabus.
4. Use all equipment related to procedures outlined in the Syllabus.
5. Demonstrate understanding of the therapists role in health care, and function with responsibility and empathy as members of the health care team.

CURRICULUM

The three-year Respiratory Therapy program combines lectures and laboratories with supervised clinical experience. Program topics include: anatomy, physiology, microbiology, chemistry, physics, medical statistics, pharmacology, patho-physiology, electro-mechanical instrumentation, inhalation therapy, mechanical ventilation, clinical ventilatory care, and patient care. The curriculum will meet the standards which have been set by the Canadian Society of Respiratory Therapists.

Graduates may elect to further their studies and obtain a Bachelor of Technology degree from Memorial University of Newfoundland.

NOTICE

Prospective students should NOTE CAREFULLY that while the College may admit students to a course of studies in the School of Health Sciences, the right to practice is granted only through the appropriate authority of the Province in conjunction with national registration/certification bodies. Applicants with prior convictions or offences, or mental/physical disabilities should communicate with the appropriate organization involved.

RESPIRATORY THERAPY
The Canadian Society of Respiratory Therapists

ENTRANCE REQUIRMENTS

Health Sciences -Effective Sept. 1, 2001
High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60^ minimum in each course)
3. Science (4 credits) chosen from two of
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209

OR
An Adult Basic Education Graduation Certificate indicating completion of the academic stream with an overall 60% average including the following courses:

a. Communication Skills.... from one of the following:
   Communications (minimum of 60%) IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222.
b. Mathematics (minimum of 60%) from one of the following sections:
   i. IM3212, IM3213 and IM3216
   ii. IM3219
c. Science - from two of the following sections:
   i. Biology IB3113, IB3214, IB3115, IB3316
   ii. Chemistry IH3215, IH3116, IH3117, IH3118
   iii. Physics IP3111, IP3112, IP3215, IP 3216
   iv. Earth Sciences IS3212, or IS3213 or IP3214

OR
Applicants who do not meet the entrance requirements, and are 19 years of age or older, may be considered on an individual basis under the Mature Student Clause.

INDUSTRIAL TRADES

CERTIFICATE

- **One year**
- **September start**
- **Gander Campus**

COURSES

CODE	TITLE	
Semester 1		**Hrs**
AF1110	Aircraft Structures and Materials	60
AF1160	Aircraft Structural Repair	60
AF1400	Specialized Processes and Fixtures	60
AF1500	Windshields, Windows, and Lenses	49
GM1150	Basic Maintenance Practices	60
GM1200	Standard Workshop Practices	60
MA1070	Structural Repair Shop Mathematics	30
MC1050	Introduction to Computers	30
SD1710	Job Search Skills	15
TS1520	WHMIS	6
TS1530	First Aid	13
Semester 2		**Hrs**
AF1220	Aircraft Structures – Wood, Tubular, and Fabric	84
AF1230	Advanced Composite Materials	60
AF1250	Stress Skin Repair	60
AF1330	Advanced Composite Repair	60
AF2110	Aircraft Maintenance Fundamentals	66
EG1100	Engineering Graphics	60
GM1510	Corrosion Control	60
Semester 3		**Hrs**
GM1500	Maintenance Regulations	30
GM1520	Sheet Metal Fabrication	66
GM1600	Structural Damage/Repair & Assembly	74

Students will receive Transport Canada credit towards the "S" license upon completion of the program.

INDUSTRIAL TRADES

Aircraft Structural Repair Technician

The Aircraft Structural Repair Technician is responsible for the assessment of damage, control of corrosion, repairs, modifications, and replacement of aircraft structures and structural components using recognized techniques and specialized tools and equipment. Students are trained in the maintenance, repair and fabrication of aircraft structural components. In addition to training with wood, fabric and sheet metal materials, this program includes extensive training in modern composite materials.

OBJECTIVES

1. To develop positive attitudes and behaviors that will enable graduates to become successful in the industry.
2. To expose students to the techniques, standards and practices of Structural repair that conform to Transport Canada guidelines for the occupation.
3. To provide a broad overview of aircraft maintenance and repair functions with specific emphasis on safety practices in the industry.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292.
2. Mathematics (2 credits) chosen from Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum.
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212 3230, 3272, 3282, 3292, 4222
   Geology: 3203 3213, 3223, 3273, 3283, 3293
   Earth Systems 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Math or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics ... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   c. Chemistry IH3215, IH3116, IH3117, IH3118
   d. Physics IP3111, IP3112, IP3215, IP3216
   e. Earth Science IS3212, IS3213, IP3214.

FUTURE OPPORTUNITIES

Graduates may find employment in the following areas:
Aircraft repair stations
Aircraft manufacturing facilities
Composite fabricators
Composite repair stations
Helicopter service centres
Helicopter overhaul facilities
Regional and national airlines.

Autobody Repair

This is a ten-month certificate-level program designed to assist persons in developing sufficient basic skills and knowledge to enter the labour force as an apprenticed Mechanic in Motor Vehicle Repair (Body).

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

1. To develop an awareness of and concern for good safety practices in the work place.
2. To develop basic skills and knowledge required for work as a mechanic in Motor Vehicle Repair (Body).
3. To develop and strengthen related knowledge and skill (technical and general) in subjects that complement and support the trade training.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

The graduate may obtain employment in all phases of the motor vehicle repair (body) trade, especially with garages and service stations. Additional experience and training may lead to self-employment or employment as a shop-foreman, inspector, or claims investigator, as well as to work in the automotive sales and service area.

CERTIFICATE

- **One year**
- **Start date varies**
- **Prince Philip Drive Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
AB1130	Metal Panel Repair	90
AB1140	Glass	60
AB1210	Non Integral Components I	75
AB1211	Non Integral Components II	75
AB1220	Surface Preparation	120
AB1230	Paint I	60
AB1320	Corrosion	45
AB1400	Autobody Fundamentals	75
AB1500	Position Welding (GMAW) for Auto Repair	45
MV1240	Medium Duty Steering and Suspension	45
OT1210	Workplace Exposure	60
WD1130	GMAW Fundamentals	45
WD1210	Oxy-Fuel Cutting And Welding	60
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1210	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
AB1150	Non-Metal Panel Repair	90
AB1180	Estimating and Appraising	45
AB1231	Paint II	90
AB1330	Uni-body & Frame Repair	90
AB1340	Structural Repair Panel	90
AB1410	Mechanical Components	90
MV1400	Body Electrical Circuits	90

CERTIFICATE

- **43 weeks**
- **Start date varies**
- **Bay St. George, Gander, Happy Valley-Goose Bay, and Prince Philip Drive Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
SV1100	Safety in the Shop	15
SV1110	Ozone Depleting Substances	7
SV1120	Gaskets, Seals & Sealers	8
SV1130	Electrical and Electronic Basic Principles	90
SV1140	Hydraulic Basic Principles	30
SV1155	Service Info Systems for Automotive Equipment	30
SV1165	Hand Tools	30
SV1175	Shop Tools & Equipment	30
SV1185	Fasteners, Tubing & Fittings	30
SV1195	Lubrication and Fluid Service	30
SV1215	Wheels and Tires	15
SV1225	Manual Steering	15
SV1255	Suspension	45
SV1285	Drive Lines	30
SV1305	Engine Principles	60
SV1315	Engine Cooling Systems	30
SV1375	Batteries	15
SV1385	Starting Systems	30
SV1395	Charging Systems	30
SV1495	Lighting Systems	30
SV1600	Ignition Systems	30
SV1610	Steering Columns	15
SV1620	Front Wheel Drives	30
SV1630	Brake Systems	90
SV1640	Power Brake Systems	15
SV1650	Fuel Delivery	30
SV1660	Air IntakeSystems	30
SV1670	Exhaust Systems	30
TS1510	Occupational Health and Safety	4
TS1520	WHMIS	6
TS1530	First Aid	16
WD1300	Oxy-Fuel Welding	30
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
SV2000	Instruments and Safety Devices	75
SV2010	Onboard Diagnostic I	30
SV2011	Onboard Diagnostic II	30
SV2020	Power Steering	30
SV2030	Electronic Power Steering	15
SV2040	Wheel Alignment	45
SV2050	Engine Clutches	45
SV2060	Manual Transmissions and Transaxles	45
SV2070	Automatic Transmissions and Transaxles Servicing	30
SV2080	Automatic Transmissions and Transaxles Overhauling	60
SV2090	Electronic Transmissions Control	30
SV2100	Transfer Cases and Hub Assemblies	45
SV2110	Differential and Axle Assemblies	45
SV2120	ABS/Traction Control Systems	45
SV2130	Introduction to Air Brakes	15
SV2140	HVAC Systems	45
SV2150	Power Actuated Accessories	60
SV2160	Air Bag Systems	30
SV2170	Engine Diagnostic and Testing	45
SV2180	Engine Removal and Installation	30
SV2190	Cylinder Head and Valve Trains	30
SV2200	Cylinder Block Assemblies	45
SV2210	Diesel Fuel Systems	30
SV2220	Emission Control Systems	45
SV2230	Fuel Injection Systems	45
SV2240	Fuel Injection Diagnosis	15
SV2250	Alternative and Variable Fuels	15
SV2260	Preventive Maintenance Inspection	15
SV2270	Government Safety Inspection	7
SV2280	Pre-Delivery Inspection	8
SV2680	Basic Motive Power Computers	60
WD2330	MIG Welding	30

INDUSTRIAL TRADES

Automotive Service Technician

The training service is designed to provide trainees with skills and knowledge required for employment in the Automotive Service Technician field. Automotive Service Technicians diagnose problems and make repairs. They examine automobiles for defects, locate the cause of the malfunction, dismantle and overhaul components, repair defects or fit new parts, and reassemble and make final adjustments.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination

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

OBJECTIVES

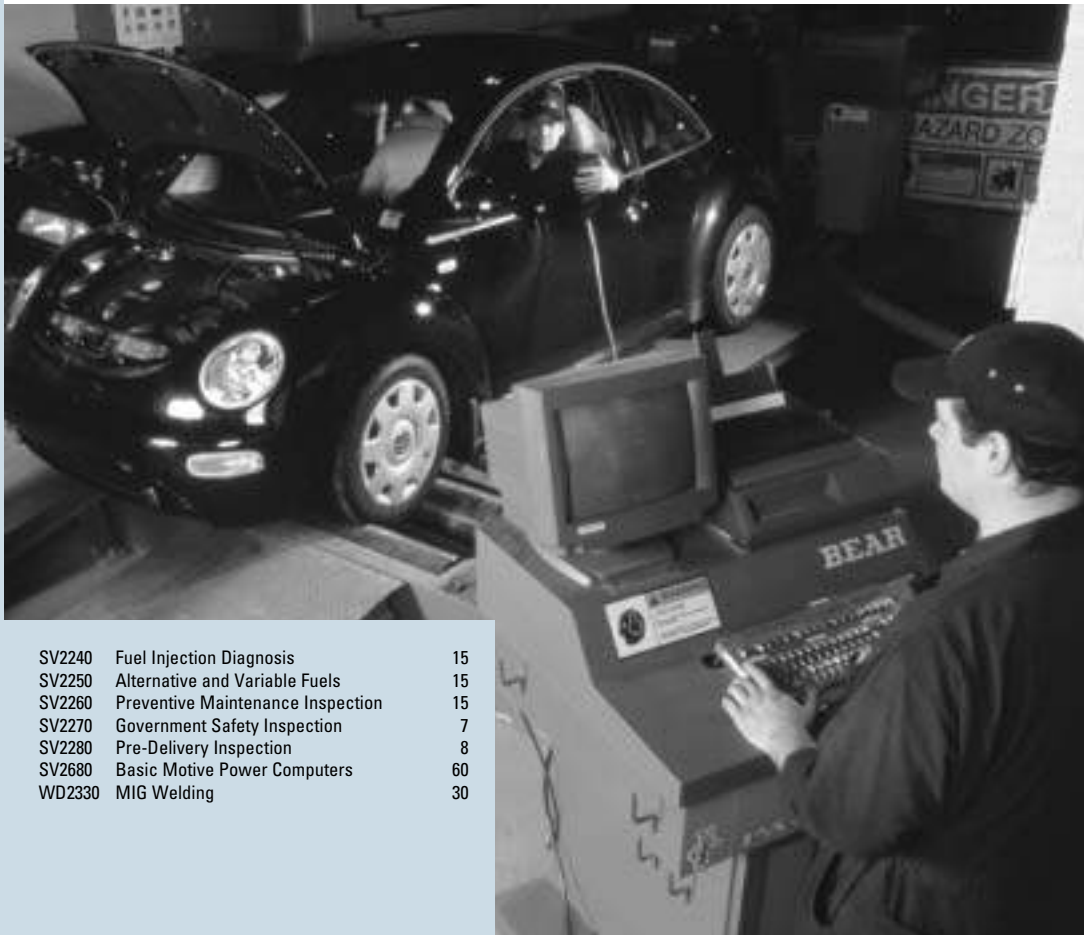
1. To develop good safety habits and the proper use and maintenance of various tools and equipment used in an automotive repair shop.
2. To develop an understanding of and skill in recognizing, servicing, removing, overhauling and installing the various related parts and systems on automobiles.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

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



Commercial Baking

This program provides practical training with supporting theory to enable the successful students to find and maintain employment as a baker's helper or to become bakers in small bakeries, hotels, restaurants or other such establishments. It is also the intent to familiarize the student with the opportunities and working conditions in the baking industry.

The program consists of lectures and demonstrations combined with practical experience in an operational kitchen and dining area. Slides, video cassettes, and 16 mm films, will also constitute a major part of classroom instruction.

OBJECTIVES

1. To teach the proper techniques of sanitation and hygiene.
2. To teach proper skills to develop a high degree of proficiency in the basic skills of the trade.
3. To help students develop desirable attitudes and good work habits.
4. To develop a sense of pride in being a member of the food industry.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

CERTIFICATE

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

COURSES

CODE	TITLE	
Entry Level		**Hrs**
CK1110	Kitchen Fundamentals	75
CK1540	Basic Desserts	45
CK1800	Basic Merchandising	60
CK1810	Basic Cakes	60
CK1820	Basic Pastries	60
CK1830	Basic Cookies, Squares & Quick Breads	45
CK1840	Basic Yeast Raised Products	90
CK1870	Specialty Cakes	60
CK1880	Specialty Pastries and Fillings	60
CK1890	Specialty Cookies, Squares & Quick Breads	45
CK1900	Specialty Yeast Raised Products	60
CK1910	Specialty Cold Desserts	45
CK1920	Specialty Hot Desserts	45
OT1130	Work Exposure	2wks
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance /Quality Control	30

CERTIFICATE

- **One year**
- **Star Date Varies**
- **Bay St. George, Burin, Seal Cove, and Prince Philip Drive Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
CK1110	Kitchen Fundamentals	75
CK1200	Basic Preparation of Fruits & Vegetables	60
CK1300	Meat and Poultry Basics	60
CK1301	Meat and Poultry Preparation Methods	60
CK1410	Basic Preparation of Stocks, Soups and Sauces	75
CK1500	Eggs & Breakfast Items	30
CK1530	Sandwiches	30
CK1540	Basic Desserts	45
CK1550	Preparation of Pasta and Farinaceous Foods	45
CK1600	Basic Preparation of Fish and Shellfish	75
CK1700	Basic Preparation of Salads	60
CK1810	Basic Cakes	60
CK1820	Basic Pastries	60
CK1830	Basic Cookies, Squares & Quick Breads	45
CK1840	Basic Yeast Raised Products	90
OT1130	Workplace Exposure	60
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
CK1201	Cooking and Presentation of Fruits & Vegetables	60
CK1510	Appetizers and Hors d'oeuvres	60
CK1520	Menu Planning	105
Ck1560	Menu Costing	60
CK1570	Presentation of Pasta and Farinaceous Foods	45
CK1601	Fish and Shellfish Presentation Methods	90
CK1701	Salad Presentation Methods	90
Ck1800	Merchandising	60
CK2300	Meat and Poultry Presentation Methods	60
CK2400	Stock, Soup, and Sauce Presentation Methods	120

Commercial Cooking

This program is designed to qualify persons for employment as Junior cooks in the Food Industry.

Students registering in the cooking program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of the entry level courses and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeypersons's Examination.

OBJECTIVES

1. To develop interest and understanding in the preparation of food.
2. To develop an awareness and concern for good standard safety practices in the work place.
3. To develop a sense of pride in being a member of the Food Industry.
4. To develop basic cooking skills and knowledge required to enter the commercial cooking field.
5. To develop and strengthen related knowledge and skill in subjects that complement and support the trade training.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Commercial Transport

CERTIFICATE
- **16 weeks**
- **Start date varies**
- **Bay St. George Campus**

This course offers training in the safe and effective operation of Medium Transports, Tandem Dump Trucks and Tractor Trailer units. Emphasis is placed on preventive maintenance, defensive driving and fuel conservation with students developing the necessary practical skills to enter the work force as qualified drivers.

Students successfully completing Medium Transports maintain a Class 5 licence while those completing Tandem Dump Trucks receive a Class 3, and those completing Tractor Trailer qualify for a Class 1.

Students who have completed the Medium Transports And Tandem Dump Trucks in a previous course may enrol and upgrade their skills to qualify as a tractor trailer driver.

Note: Graduates under the age of 25 should note that they may encounter problems obtaining employment because of the cost and complications of insurance experienced by employers.

OBJECTIVES

1. To provide knowledge of defensive driving techniques, proper economical vehicle operation, and emergency procedures.
2. To provide knowledge of types of trucks, power trains, engines, drive lines, brake systems, tires and trailers.
3. To provide skills training in backing procedures, serpentine, alley dock, right angle parking and overhead clearances.
4. To provide operating techniques where students drive on course roads, through town and on the Trans Canada Highway.
5. To provide knowledge of proper freight handling procedures and methods of preparing and handling documentation connected with transfers of cargo and monies.

ENTRANCE REQUIREMENTS

1. High School Graduation
   OR
   Grade XI Certificate (Public Examinations or equivalent),
   OR
   Adult Basic Education graduation certificate,
   OR
   Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.
2. A valid Newfoundland driver's license - minimum of full Class 5. Must have been held for a min. of 1 year.
3. Must be 18 years of age on or before course completion.
4. Valid medical certificate for Class 1; completed on form required by the Department of Works, Services and Transportation. This form is available from any driver examiner.
5. Drivers abstract with maximum of 4 points and no motor vehicle related criminal code convictions in the last 5 years.

EQUIPMENT REQUIRED FOR TRAINING

Safety boots, safety hat, safety glasses, coveralls and gloves.

SUBJECT DESCRIPTIONS

Trade Theory

This subject includes the study of proper machine care and preventive maintenance; start-up and shutdown procedures; the effects of different temperatures on these procedures; types and characteristics of lubricants; correct procedures involved in the operation of various transmissions; and the interpretation of operation and maintenance manuals with respect to safe operation techniques such as loading and weight restrictions. The Highway Traffic Act, Motor Carrier Act and License and equipment regulations are also covered. Students also complete a First Aid course, and Air Brake course, Professional Driver Improvement Course and Transportation of Dangerous Goods course.

Practical

Students perform pre-trip inspection, actual starting and driving vehicle; hauling of materials; judging for clearance, vertical and horizontal; backing trailer with aid of mirrors; selecting proper speed to coincide with driving conditions. Students must manoeuvre through an obstacle course with a medium transport and later with semi-trailer. This must be accomplished before going on the road. The obstacle course is structured to the Canadian Trucking Association Standards. Students then complete supervised road trips and are rated in accordance with their performance.

Trade Support

This program has a number of co-requisites for which students may be granted exemptions. These courses cover content in Mathematics, Science and Communication Skills which students may have completed in high school or in other programs. Exemptions will be granted upon entry to the program if proof of completion of this content is provided.

CERTIFICATE

- **One year**
- **Start date varies**
- **Clarenville**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
AJ1110	Carpentry Fundamentals	105
AJ1120	Rigging for Carpentry	30
AJ1150	Basic Drawing & Sketching/Drafting	75
AJ1200	Layout & Footings	75
AJ1210	Wall Forms	60
AJ1220	Floor and Wall Framing	75
AJ1230	Exterior Finish	75
AJ1300	Roof Framing Fundamentals	90
AJ1400	Interior Walls and Ceilings	60
AJ1500	Interior Trim	75
AJ1600	Stair Fundamentals	75
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
AJ2220	Structural Formwork	90
AJ2300	Hip and Valley Roof Framing	75
AJ2310	Gambrel, Mansard & Unusual Roof Framing	60
AJ2330	Timber Trusses & Flat Roofs	45
AJ2400	Post and Beam	45
AJ2410	Wood Scaffolds	45
AJ2500	Cabinets and Shelving	105
AJ2600	Interior Finish Stairs	60

INDUSTRIAL TRADES

Construction Carpentry

Carpentry is a program which covers the use, care and operation of basic tools and machinery, building layout, form construction and framing, interior and exterior finish with emphasis on the National Building Code standards and energy efficient concepts.

Students registering in the Carpentry program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of the entry level courses and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeypersons's Examination.

OBJECTIVES

1. To develop the fundamental knowledge and the initial practical skills required as a carpenter in apprentice.
2. To instill in each graduate a responsible attitude toward the duties in the trade.
3. To enable graduates to develop and practice good safety habits.
4. To demonstrate problem solving skills and high standards of craftsmanship.
5. To enable graduates to continue apprenticeship training.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate.,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

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

Construction Industrial/Electrical

Construction/Industrial Electrical is a program which covers basic electrical concepts, residential wiring, commercial installations, service and distribution systems, emergency electrical systems, communication and signaling systems, heating systems, industrial equipment installation and maintenance as well as industrial electronic control devices and systems.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of the entry level program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

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

OBJECTIVES

1. To develop the basic knowledge and practical skills required to meet initial performance standards needed by the electrical industry.
2. To enable graduates to continue apprenticeship training as an industrial or construction electrician.
3. To instill in each student a responsible attitude toward the duties required in the trade.
4. To enable graduates to develop and practice good safety habits.
5. To demonstrate problem solving skills and high standards of craftsmanship.

EQUIPMENT AND SUPPLY FEE

In addition to tuition cost, students will be required to pay an equipment and supply fee. Please refer to "Fees and Charges" section of this calendar for details.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

FUTURE OPPORTUNITIES

Successful graduates may find employment, career opportunities in residential wiring, commercial electrical installation and maintenance, and industrial electrical installation as well as in industrial controls.

INDUSTRIAL Only

ER2150	Analog Devices	15
ER2190	Process Control	90
ER2200	Distributed Control Systems	75
ER2210	Pneumatic Control Systems	30
ER2220	Servomechanism	30
ER2230	Hydraulic Circuits and Controls	15
ER2310	Furnace Control	15
ER2320	Boiler Control	15
ER2330	Heat Pumps	15
ER2340	Energy Management	30
ER2360	Refrigeration and AC Controls	45
ER2370	Precipitator and Dust Collection Systems	30
ER2380	Vibration Analysis	30
ER2390	Fibre Optics	30
ER2400	HVAC Systems	45

CERTIFICATE

- **43 weeks**
- **September start**
- **Bonavista, Corner Brook, and Seal Cove Campuses**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
ER1100	Rigging	30
ER1110	Hand Tools	15
ER1120	Power Tools	30
ER1130	Fasteners	30
ER1140	DC Theory	30
ER1150	Series and Parallel Circuits	30
ER1160	Introduction to Building Codes	30
ER1170	Voltage Drop & Power Loss	30
ER1180	Single Phase Theory	60
ER1190	Three Phase Theory	30
ER1200	Generic Blueprint	30
ER1210	Electrical Blueprint	45
ER1220	Conduit, Tubing, and Fittings	30
ER1230	Conductors and Cables	60
ER1240	ResidentialWiring	60
ER1250	Protective Devices	30
ER1260	Principle of Operations of Transformers	30
ER1270	Single Phase Service Entrance	30
ER1280	Three Phase Service Entrance	30
ER1290	Distribution Equipment	45
ER1300	DC Motors and Controls	30
ER1310	Electric Heating Systems	45
ER1320	Low Voltage Temperature Control	10
ER1340	Conventional Fire Alarms	30
ER1400	Safety Measures in Construction	30
OT1230	Workplace Exposure	60
TS1510	Occupational Health and Safety	6
TS1520	WHMIS	6
TS1530	First Aid	13
TS1540	CPR	14
WD1310	Oxy-Fuel Welding	15
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
ER2000	Raceway, Wireways, and Busways	30
ER2010	Lighting and Controls	45
ER2020	Single Phase Motors	30
ER2030	Three Phase Motors	45
ER2040	Control Devices (Discrete Input)	30
ER2050	Motor Starters & Controllers	60
ER2060	Central Heating Units	15
ER2070	Power Supply & Rectifiers	30
ER2080	Power Electronic Control Circuits	45
ER2090	Integrated Circuits	45
ER2100	Amplifiers	30
ER2110	Troubleshooting Techniques	30
ER2120	Application of Troubleshooting Techniques	30
ER2130	Communications & Data Systems	30
ER2140	Security	20
ER2160	Solid State Drives	30
ER2170	PLC Fundamentals	15
ER2180	Programming PLC's	45
ER2240	DC Generators and Motors	30
ER2250	AC Generators	30
ER2260	Emergency Stand-By Systems	30
ER2270	Emergency Lighting Systems	15
ER2280	High Voltage Breakers and Starters	15
ER2290	High Voltage Splices & Terminations	15
ER2300	Distribution System Conditioning	45
ER2350	Electrical Surface Heating Units	15
WD2320	Arc Welding	30

CERTIFICATE

- **22 weeks**
- **Start date varies**
- **Bay St. George Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
MB1100	Equipment Operation Safety	45
MB1110	Equipment Maintenance	45
MB1120	Regulations and Emergency Procedures	45
MB1130	Crane Operation Fundamentals	67.5
MB1140	Mobile Lattice Boom Cranes	67.5
MB1150	Mobile Hydraulic Boom Cranes	67.5
TS1260	Shop Fundamentals	90
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

INDUSTRIAL TRADES

Crane Operator

This program exposes students to the safe and efficient operation of Offshore and/or Land-based Mobile Cranes. Students study the theory of operation and preventive maintenance and, using the Crane Operator Training Simulator, develop practical skills necessary for the operation of these cranes. Through the use of the simulator numerous training scenarios are set up that will test the student's ability to work under stress conditions and face safety hazards that would be impossible to practice using real equipment.

Students registering in the Crane Operator program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

Note: Students should note that anyone entering the offshore industry is required, by legislation, to complete a Basic Offshore Training Course prior to working in offshore related trades.

OBJECTIVES

1. To expose students to terminology associated with the crane industry.
2. To provide knowledge of crane capabilities and industry expectations.
3. To provide skills training in servicing procedures and techniques to maximize the life span of the crane.
4. To provide skills training in rigging, load chart computations and lifting procedures in offshore and land-based operations.
5. To develop and strengthen the related mathematics, science and communication skills that support the occupational skills and knowledge.
6. To develop the driving skills necessary to obtain a Class 3 license and safely drive a disassembled crane.

ENTRANCE REQUIREMENTS

1. High School Graduation
   OR
   Grade XI Certificate (Public Examinations or equivalent),
   OR
   Adult Basic Education graduation certificate,
   OR
   Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.
2. A Valid Class 5 driver's license is required for entry into land-based training.
3. Department of Transportation Medical for a Class 3 license including colour perception, visual acuity and hearing tests. A depth perception test is also required.

EQUIPMENT REQUIRED FOR TRAINING

Safety boots, safety hat, safety glasses, coveralls and gloves.

Hairstylist

This course is a program designed to give basic training in the fundamentals of Hairstyling. The course is designed to provide a study in the science and art of Hairstyling of both males and females.

Note: This program may not be suitable for persons with allergies and/or respiratory problems. If you have either of these conditions, please check with a doctor to determine medical suitability.

OBJECTIVES

1. To develop appreciation, understanding and skills required for the practise of Hairstylist.
2. To develop habits of good workmanship, as well as practising hygienic measures and following safety regulations.
3. To learn to select wisely, use properly and care for all commercial products, tools, and equipment pertaining to the trade.
4. To provide an environment that will be conducive for students to develop further such mature qualities as: responsibility, emotional control, leadership and citizenship.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING

Uniforms and flat shoes, and hairstylist tool kit.

CERTIFICATE

- **44 weeks**
- **Start date varies**
- **Bay St. George, Burin, and Gander Campuses**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
HT1110	Salon Fundamentals	90
HT1210	Styling I	90
HT1211	Styling II	90
HT1300	Cutting I (Hairdressing)	90
HT1301	Cutting II (Barbering)	90
HT1400	Basic Perming	90
HT1410	Chemical Relaxing/Straightening	60
HT1510	Color Fundamentals	90
HT1511	Hair Coloring	60
HT1600	Introduction to Aesthetics	75
HT2300	Advanced Cutting	60
HT2400	Advanced Perming	60
HT2500	Lightening & Toning	90
HT2501	Advanced Coloring	60
OJ1500	Work Exposure	90

Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

CERTIFICATE

- **24 weeks**
- **Start date varies**
- **Bay St. George Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
HE1100	Equipment Operation Safety	45
HE1200	Equipment Maintenance	45
HE1300	Regulation/Emergency Procedures	67.5
Three Courses from the following:		
HE1500	Bulldozers	75
HE1510	Graders	75
HE1520	Bacchoes	75
HE1530	Front End Loaders	75
HE1540	Tandem Trucks	75
HE1550	Off Highway Trucks	75
HE1560	Excavators	75
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

INDUSTRIAL TRADES

Heavy Equipment Operator

This program provides pre-employment and apprenticeship level training, exposing students to the safe and effective operation of Heavy Duty Earth Moving Equipment. Students study the theory of operation and preventive maintenance and develop the necessary practical skills to become proficient in the use of three of the six available categories of machinery.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

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

Note: Graduates under the age of 25 should note that they may encounter problems obtaining employment because of the cost and complications of insurance experienced by employers.

OBJECTIVES

1. To expose students to terminology associated with construction equipment.
2. To provide knowledge of machine capabilities and industry expectations.
3. To provide servicing procedures and techniques to maximize the life span of construction equipment.
4. To provide skills training in basic machine manoeuvring, control and operation in work simulated projects.
5. To provide knowledge of standards for road construction as well as other municipal projects.

ENTRANCE REQUIREMENTS

1. High School Graduation
   OR
   Grade XI Certificate (Public Examinations or equivalent),
   OR
   Adult Basic Education graduation certificate,
   OR
   Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.
2. A valid class 5 driver's license is required for entry into the program.
3. Satisfactory medical report for Class 03 required by the Department of Works, Services and Transportation.

EQUIPMENT REQUIRED FOR TRAINING

Safety boots, safety hat, safety glasses, coveralls, and gloves.

Heavy Equipment Service Technician

This training service is designed to provide trainees with skills and knowledge required for employment in the field of Heavy Equipment Repair. Heavy Equipment Service Technicians diagnose problems, locate the cause of the malfunction, dismantle and overhaul components. They repair defects, reassemble existing parts or fit new parts, and make final adjustments.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

1. To familiarize the student with the principles of operation, construction, care and maintenance of various types of hand tools and power tools.
2. To acquaint the student with the various routines and practices pertaining to the Heavy Duty Repair Trade.
3. To develop skills and to impart knowledge relative to this particular trade.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING

Safety boots, safety hat, safety glasses, two pairs of coveralls, and gloves, tool box and selection of tools.

CERTIFICATE

- **43 weeks**
- **Start date varies**
- **Bay St. George, Placentia, and Happy Valley-Goose Bay Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
SV1100	Safety in the Shop	15
SV1110	Ozone Depleting Substances	16
SV1120	Gaskets, Seals, and Sealers	8
SV1130	Electrical and Electronic Basic Principles	90
SV1140	Hydraulic Basic Principles	30
SV1150	Service Information System	30
SV1160	Hand Tools	30
SV1170	Shop Tools and Equipment	30
SV1180	Fasteners, Tubings, and Fittings	30
SV1190	Lubrication and Fluid Services	30
SV1200	Start, Move, Park Vehicle	30
SV1210	Tires, Rims, and Wheels	30
SV1220	Manual Steering Systems	45
SV1230	Power Steering Systems	30
SV1240	Front End Alignment	15
SV1250	Front and Rear Suspensions	45
SV1260	Hydraulic Brakes	60
SV1270	Air Brakes	60
SV1280	Drive Lines	30
SV1290	Differential Assemblies	30
SV1300	Engine Principles	75
SV1310	Cooling Systems	30
SV1320	Lubrication Systems	15
SV1330	Air Filtration & Exhaust Systems	30
SV1340	Gasoline Fuel Systems	15
SV1350	Alternative Fuel Systems	15
SV1360	Diesel Fuel Supply Systems	15
SV1370	Batteries	15
SV1380	Starting Systems	30
SV1390	Charging System Components	30
SV1400	Lighting Gauges	30
SV1410	Fire Suppression Units	15
TS1510	Occupational Health and Safety	4
TS1520	WHMIS	6
TS1530	First Aid	7
WD1300	Oxy-Fuel Welding	30
OT1170	Work Exposure	2wks
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
SV2290	Steering Systems (Tracked)	30
SV2300	Track Type Undercarriage	90
SV2310	Electric Brakes	15
SV2320	Manual Transmission Removal and Installation	30
SV2330	Clutches	30
SV2340	Manual Transmission Service and Repair	30
SV2350	Torque Converters	30
SV2360	Power Transmission	30
SV2370	Drive Axles and Final Drives	15
SV2380	Hydraulics	30
SV2390	Reservoirs and Fluid Containers	15
SV2400	Hydraulic Pumps and Motors	30
SV2410	Hydraulic Control Valves	15
SV2420	Hydraulic Cylinders	15
SV2430	Hydraulic Accumulators	15
SV2440	Hydraulic Steering Systems (Articulated)	15
SV2450	Hydrostatic Transmissions	30
SV2460	Diagnose and Test Hydraulic Systems	15
SV2470	Winches, Wire Ropes, and Accessories	15
SV2480	Cabs and ROPS	15
SV2490	Portable AirCompressors	15
SV2500	Booms and Attachments	15
SV2510	Blades, Buckets, and Cutting Edges	15
SV2520	Aprons, Bowls, and Tailgates	30
SV2530	Feller Heads	30
SV2540	Delimber Mechanisms	30
SV2550	Service and Repair Circle Bearings	15
SV2560	Preventive Maintenance Inspections	15
SV2570	Engine Brakes and Retarders	15
SV2580	Engine Removal and Installation	30
SV2590	Turbochargers, Blowers, and Intercoolers	30
SV2600	Diesel Engine Overhauling	90
SV2610	Diesel Engine Problems Diagnosis	30
SV2620	Injectors	30
SV2630	Injector Pumps	30
SV2640	Tune Ups and Diagnosis of Diesel Fuel Systems	30
SV2650	Electronic Fuel Control Systems	60
SV2660	Ignition Systems and Tune-Ups	15
SV2670	Air Conditioning Systems	30
SV2680	Basic Motive Power Computers	60
WD2320	Arc Welding	30
WD2330	MIG Welding	30

CERTIFICATE

- **1.5 years**
- **Start date varies**
- **Carbonear Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
AJ1110	Carpentry Fundamentals	105
AJ1120	Rigging for Carpentry	30
AJ1150	Basic Drawing and Sketching/Drafting	75
AJ1200	Layout and Footings	75
AJ1210	Wall Forms	60
AJ1220	Floor and Wall Framing	75
AJ1230	Exterior Finish	75
AJ1300	Roof Framing Fundamentals	90
AJ1400	Interior Walls and Ceilings	60
AJ1500	Interior Trim	75
AJ1600	Stair Fundamentals	75
AJ1700	Architectural Conservation	60
AJ1710	Building Science	30
AJ2700	Restoration Joinery I	90
AJ2710	Restoration Joinery II	90
AJ2720	Restoration Joinery III	90
EP1180	Business Management	45
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

INDUSTRIAL TRADES

Heritage Carpentry

The Heritage Carpentry program was developed to train carpenters to work on heritage restoration projects. This program offers contemporary construction carpentry training along with training in the traditional skills that were used to construct the wood frame buildings of yesteryear. In addition, the program also provides background information on architectural styles in Atlantic Canada and Quebec. Although the program has a heritage "orientation", it is fully articulated with the Red Seal Construction Carpentry program and students may, if they wish, continue on to complete their apprenticeship and become journeypersons in Construction Carpentry.

OBJECTIVES

1. To develop the fundamental knowledge and the initial practical skills required as a carpentry apprentice specializing in heritage restoration.
2. To instill in each graduate a responsible attitude toward the duties in the trade.
3. To enable graduates to develop and practice good safety habits.
4. To demonstrate problem solving skills and high standards of craftsmanship.
5. To enable graduates to continue apprenticeship training.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate.,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

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

Industrial Instrumentation Mechanic

Industrial 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. Recent technical developments in measuring and controlling process variables like pressure, temperature, flow, and composition have increased the quality of products and have reduced operating costs. Today, conventional pneumatic and electronic controls are being rapidly augmented or replaced by computer-based systems. These advantages in technology demand qualified technical personnel trained in the field of industrial instrumentation.

OBJECTIVES

The objective of the Industrial Instrumentation Program is to provide students with theoretical and practical training the principles of operation and maintenance of pneumatic devices, control valves, electronic instruments, digital logic devices and computer-based process control systems. The internship offering delivers a curriculum which satisfies the objectives outlined in the Province's Plan of Training for the occupation of Industrial Instrument Mechanic over the duration of its two-year program.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite 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:
a.Pulp and Paper Processing
b.Hydro Power Generation
c.Mining, Petrochemical, and Natural Gas
d.Industrial and Commercial Manufacturing
e.Industrial Construction
f. Industrial Instrument Servicing

CERTIFICATE

- **Two years**
- **September start**
- **Seal Cove Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
TS1510	Occupational Health & Safety	6
TS1530	First Aid	14
TS1520	WHMIS	6
ER1110	Hand Tools	5
ER1120	Power Tools	5
ER1130	Fasteners & Adhesives	5
ER1140	Direct Current (DC) Theory	30
ER1150	Series & Parallel Circuits	30
ER1160	Codes	15
ER1170	Voltage Drop & Power Loss	30
ER1180	Single-Phase Theory	25
ER1190	Three-Phase Theory	15
ER1225	Conduit, Tubing & Fittings	15
ER1710	Signal Transmission	15
ER1730	Electronics	60
ER1740	On-Off Control	40
ER1760	Motors	30
ER1770	Process Analyzers	60
ER1780	DCS Process Applications	40
ER1790	PLC Process Applications	45
ER2115	Troubleshooting Techniques	15
ER2155	Process Measurement	100
ER2160	Solid State Drives	30
ER2170	PLC Fundamentals	30
ER2180	Programming PLC's	30
ER2195	Process Control	70
ER2200	Distributed Control Systems	30
ER2215	Pneumatic Systems Instrument Air Supply	30
ER2225	Control Valves	30
ER2235	Hydraulic Systems	15
ER2325	Boiler Control	30
ER2380	Vibration	10

Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Techniques (Seminar)	15
SD1720	Entrepreneurial Awareness (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

CERTIFICATE

- **One year**
- **Start date varies**
- **Placentia Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1740	Basic Drawing & Sketching	75
MW1210	Introduction to CNC Machining	45
MW1220	Introduction to Milling	60
MW1350	Planers and Shapers	45
MW1400	Precision Layout	60
MW1410	Basic Lathes	20
MW1500	Stationary Power Tools	90
OT1180	Workplace Exposure	90
TS1150	Shop Fundamentals	90
TS1210	Precision Measurement	60
TS1300	Rigging	45
WD1210	Oxy-Fuel Cutting and Welding	60
WD1510	Metallurgy Fundamentals	45
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
MW1310	Milling Advanced	120
MW1320	Advanced Machinist (Lathes)	90
MW1330	Precision Grinding	90
MW1340	CNC Machining	90
WD1120	SMAW Fundamentals	90

INDUSTRIAL TRADES

Machinist

The Machinist program is designed to train individuals in the knowledge, skills, and experience necessary to fabricate, assemble and repair machinery.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Metal Fabrication

This program is designed to prepare trainees for employment opportunities in the field of Structural Fitting. The program provides the necessary training in operating iron workers, plate rollers, press brakes, cold frame benders, overhead cranes, shears, Quality Control and Quality Assurance, non-destructive testing, fabricating sub-assemblies and unit assemblies; outfitting, erecting and repairing steel structures; arranging job components by nesting; reading and interpreting drawings; and computer awareness.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

1. To develop skills in the proper use of basic tools and equipment.
2. To develop skills in the proper use of fabrication equipment.
3. To develop skills in the different disciplines of welding and cutting ferrous and non-ferrous metals.
4. To develop skills in reading and interpreting blueprints.
5. To develop skills relative to production flow.
6. To provide basic knowledge of Quality Assurance and Quality Control.
7. To help trainees develop attitudes conducive to successful applications of skills on the job.
8. To develop an awareness and concern for good safety practices in the work place.
9. To develop and strengthen the related mathematics, science and communication skills that support the occupation skills and knowledge.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED

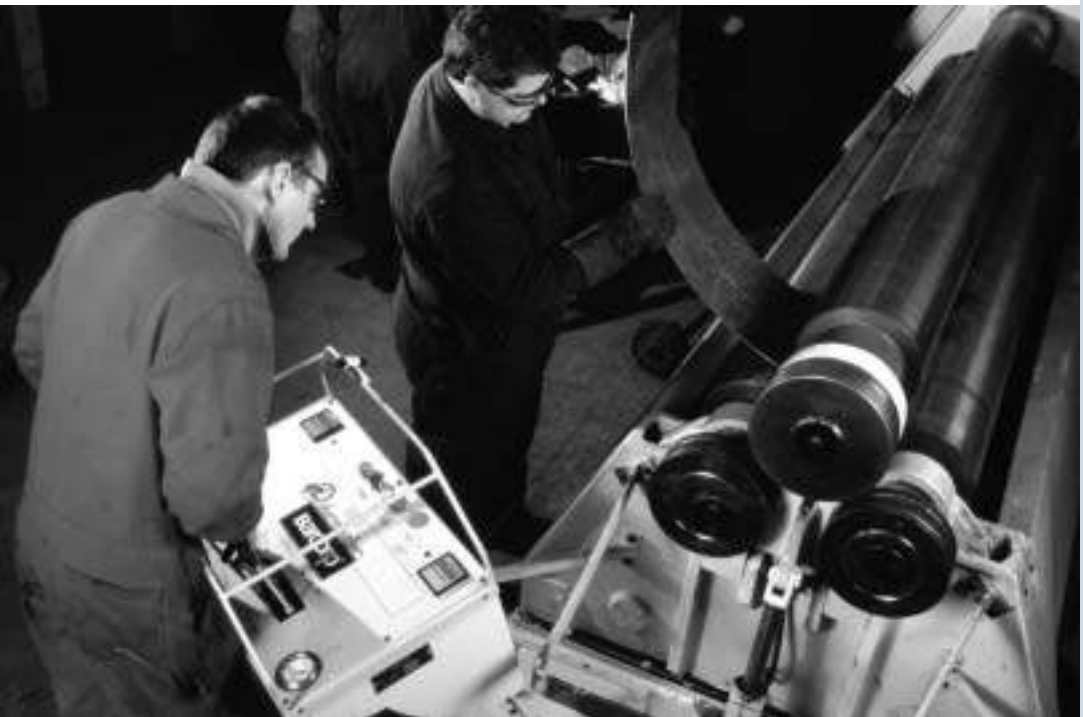
Safety boots, safety glasses, coveralls, welding goggles and welding gloves.

CERTIFICATE

- **One year**
- **Start date varies**
- **Burin Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1710	Basic Drawing and Sketching	75
OT1140	Workplace Exposure	60
SF1100	Metal Preparation and Shop Flow	75
SF1120	Blueprint Reading for Fabricators	75
SF1130	Intro. to Sub-Assembly and Assembly Fabrication	60
SF1200	Intro. to Template Development	90
SF1220	Intro. To Plate Development	90
TS1120	Fabricator Shop Fundamentals	90
TS1300	Rigging	45
WD1130	GMAW Fundamentals	45
WD1200	Oxy-Fuel Cutting	75
WD1230	SMAW Fundamentals	60
WD1510	Metallurgy Fundamentals	45
WD2210	Position Fillet Welding	75
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1210	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Awareness (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
SF1300	Advanced Template Development	90
SF1310	Advanced Plate Development	105
SF1320	Sub-Assemblies	90
SF1330	Structural Assembly	105
WD2190	Specialized Welding and Cutting	45



CERTIFICATE

- **One year**
- **September start**
- **Corner Brook, Happy Valley-Goose, Bay, and Placentia Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1740	Basic Drawing and Sketching	75
MW1130	Power Transmissions	90
MW1400	Precision Layout	60
MW1440	Seals and Bearings	60
MW1500	Stationary Power Tools	90
OT1190	Workplace Exposure	90
PF1240	Pump Maintenance	90
PF2210	Valves	45
TS1150	Shop Fundamentals	90
TS1210	Precision Measurements	60
TS1300	Rigging	45
WD1210	Oxy-Fuel Cutting and Welding	60
WD1510	Metallurgy Fundamentals	45
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
MP1310	AC/DC Fundamentals	90
MW1140	Conveyor Systems	45
MW1150	Vibration Analysis	90
MW1160	Alignment	90
MW1410	Basic Lathes	90
MW1420	Emergency Power Systems	75
MW1430	Engine Operations	30
PF1220	Pump Installation	90
WA1120	Fundamentals of Hydraulics and Pneumatics	90
WD1120	SMAW Fundamentals	90

INDUSTRIAL TRADES

Millwright (Industrial Mechanic)

This is a nine month certificate level program designed to assist persons in developing sufficient basic skills and knowledge to enter the labour force as an apprenticed industrial mechanic-millwright.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

PROGRAM OBJECTIVES

1. To develop an awareness of and concern for good safety practices in the work place.
2. To develop basic skills and knowledge required for work as an apprenticed industrial mechanic-millwright.
3. To develop and strengthen related knowledge and skill (technical and general) in subjects that complement and support the trade training.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

Graduates may obtain employment in a variety of occupational settings including: industrial, mining, pulp and paper, oil refining, private companies, breweries, bakeries, bottling plants, construction, fabrication and with various provincial and federal government agencies or departments.

Multi-Skills Industrial Trades

The two-year program will provide multi-skilled workers apprenticeable in the areas of Millwright (Industrial Mechanic), Machinist and Welding.

The Multi-Skills Industrial Trades program is designed to provide trainees with the necessary skills, knowledge, and attitudes to fabricate, install, test, service, and maintain various mechanical systems and equipment in a modern industrial workplace. Typical job tasks include assessment and trouble shooting, alignment, and installation of components on various industrial systems. Typical systems include conveyors, pumps, compressors, piping, hydraulic systems.

PROGRAM OBJECTIVES

1. To develop an awareness of the concern for good safety practices in the work place.
2. To develop and apply related academic and technical knowledge to support and complement the professional training.
3. To develop the good work habits and attitudes desired by employers.
4. To develop basic knowledge and skill required for work as an apprenticed welder.
5. To develop basic skills and knowledge required for work as an apprenticed industrial mechanic-millwright.
6. To develop basic skills, and skills required for work as a machinist apprentice.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause

EMPLOYMENT OPPORTUNITIES

Graduates may obtain employment in industries such as paper mills, oil refineries, offshore oil rigs, mining operations, processing plants, manufacturing plants, shipyards, power generating sites, military bases and with various mechanical contractors.

FIRST AID TRAINING

Students will be required to complete the St. John Ambulance Standard First Aid Course.

EQUIPMENT

Students in the Multi-Skills Industrial Trades program are required to provide the following equipment:

1. Safety Boots
2. Two pairs of overalls
3. Safety Glasses
4. Measuring tape (10 ft. dual)
5. Two Padlocks
6. Welding Gloves

CERTIFICATE

- **Two years**
- **September start**
- **Baie Verte Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1120	Blueprint Reading for Welders	75
DR1740	Basic Drawing & Sketching	75
MW1130	Power Transmissions	90
MW1210	Introduction to CNC Machining	45
MW1220	Introduction to Milling	60
MW1350	Planers and Shapers	45
MW1400	Precision Layout	60
MW1410	Basic lathes	20
MW1440	Seals and Bearings	60
MW1500	Stationary Power Tools	90
OT1190	Workplace Exposure	90
PF1240	Pump Maintenance	90
PF2210	Valves	45
SF1200	Introduction to Template Development	45
TS1150	Shop Fundamentals	90
TS1210	Precision Measurements	60
TS1300	Rigging	45
WD1130	GMAW Fundamentals	45
WD1160	Shop Fundamentals	90
WD1210	Oxy-Fuel Cutting and Welding	60
WD1230	SMAW Fundamentals	60
WD1400	Introduction to Pipe Welding	45
WD1510	Metallurgy Fundamentals	45
WD1520	GTAW Fundamentals	60
WD2110	Position Butt Welding	120
WD2210	Position Fillet Welding (SMAW)	75
WD2260	FCAW Fundamentals	30
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

CERTIFICATE

- **One year**
- **Start date varies**
- **Port aux Basques Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1120	Blueprint Reading for Welders	75
DR1700	Basic Drawing & Sketching	75
ND1101	Liquid Penetrant Inspection I	30
ND1102	Liquid Penetrant Inspection II	45
ND1120	NDT Centre Fundamentals	90
ND1201	Magnetic Particle Inspection I	45
ND1202	Magnetic Particle Inspection II	45
ND1301	Industrial Ultrasonics I	45
ND1302	Industrial Ultrasonics II	90
ND1401	Industrial Radiography I	60
ND1402	Industrial Radiography II	75
WD1120	SMAW Fundamentals	90
WD1510	Metallurgy Fundamentals	45
WD2300	Failure Analysis	60
OT1230	Work Exposure	2wks
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

INDUSTRIAL TRADES

Non-Destructive Testing

This program is designed to prepare trainees for potential employment opportunities in the field of Non-Destructive Testing of materials. The program structure provides the necessary training in a variety of methods namely: Liquid Penetrant Inspection, Magnetic Particle Inspection, Ultrasonic Inspection, Industrial Radiography Inspection, other inspection methods, and Quality Assurance, Control, Documentation and Reporting systems for various industrial sectors.

OBJECTIVES

1. To provide sufficient basic knowledge of the Liquid Penetrant Inspection Method to enable the graduate to perform Liquid Penetrant Inspection.
2. To provide sufficient basic knowledge of the Magnetic Particle Inspection Method to enable the graduate to perform Magnetic Particle Inspection.
3. To provide sufficient basic knowledge of the Ultrasonic Inspection Method to enable the graduate to carry out Ultrasonic Inspection.
4. To provide sufficient basic knowledge of Industrial Radiography to enable the graduate to carry out Radiographic Inspection.
5. To provide basic knowledge of Quality Assurance, Control Documentation and Reporting Systems for various industrial sectors.
6. To help trainees develop attitudes conducive to the successful applications of skills on the job.
7. To develop an awareness and concern for good safety practices in the work place.
8. To provide related academic skills and knowledge in Mathematics, Communications and Science.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate
OR
Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING

Safety glasses, safety boots and laboratory coats.

SUBJECT DESCRIPTIONS

- Liquid Penetrant Inspection
- Magnetic Particle Inspection
- Ultrasonic Inspection
- Radiography
- Metallurgy
- Metallurgy and Welding Methods
- Quality Assurance, Quality Control and Documentation
- Blueprint Reading.

LABORATORY

There will be practical applications in all disciplines to assist the trainees in developing self-confidence to carry out Non-Destructive Testing.

Oil Burner Mechanic

This certificate-level program is designed to provide a course of study that will prepare persons for employment in the residential heating industry, and further training during apprenticeship.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to write the Journeyperson's Examination.

OBJECTIVES

1. To use and maintain tools, materials and equipment required for the maintenance and installation of heating systems (oil, and solid fuels).
2. To test and adjust residential heating systems.
3. To install residential heating systems.
4. To interpret trade blueprint schematics.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate
OR
Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

CERTIFICATE

- **One year**
- **Start date varies**
- **Seal Cove Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1700	Basic Drawing and Sketching	75
OM1100	Basic Oil Burners	60
OM1110	Oil Burner Shop Fundamentals	75
OM1200	Fuel Delivery Systems	45
OM1220	Oil Burner Electrical Systems	90
OM1310	Oil Burner Controls	60
OM1400	Warm Air Heating Systems	90
OM1420	Alternate Wood Heat Generators	60
OM1430	Hot Water Heating Systems	90
OM1510	Residential Mechanical Ventilation Installer Level I	45
OM1520	Combustion Venting Systems	30
OM1530	Low Pressure Steam Heating Systems	105
OT1100	Workplace Exposure	60
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

CERTIFICATE

- **One year**
- **September start**
- **Bonavista Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1760	Basic Drawing and Sketching	75
PF1140	Plumbing Fundamentals	60
PF1160	Piping Shop Fundamentals	105
PF1510	Plumbing Venting Systems	120
PF1520	Plumbing Appliances	90
PF1530	Drainage and Sewage Disposal Systems	105
PF2240	Hot Water Heating Systems	105
TS1300	Rigging	45
WA1810	Water Supply Systems	45
WD1120	SMAW Fundamentals	90
WD1210	Oxy-Fuel Cutting and Welding	60
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
OM1100	Basic Oil Burners	60
PF1150	Introduction to Piping and Heating ControlSystems	30
PF1220	Pump Installation	45
PF1330	Alternate Heat Generators	45
PF2410	Specialized Piping Systems	60
PF2500	Cross Connection Control	45

INDUSTRIAL TRADES

Plumbing and Domestic Heating

This is a program designed to prepare persons for employment in the plumbing and domestic heating occupations.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

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

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Powerline Technician

This is a program designed to prepare persons for employment in the electric power distribution utilities.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

Note: Students should be aware of the strenuous physical dexterity required in this training program. Employers will normally demand all applicants to undergo a physical capabilities assessment prior to hiring.

OBJECTIVES

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

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,

OR

Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING

Coveralls, lineman's boots, lineman's gloves, safety hat, safety glasses, chin strap and rain clothes.

CERTIFICATE

- **One year**
- **Start date varies**
- **Seal Cove Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1700	Blueprint Reading and Sketching	75
MP1310	AC/DC Fundamentals	90
MP1320	Single Phase Transformers	45
OL1220	Motorized Equipment	45
OL1230	Power Tools & Utility Equipment	60
OL1360	Power Line Structures I	120
OL1500	Workplace Management	45
OL2340	Primary Conductors	75
OL2350	Secondary Conductors	75
OL2360	Power Line Structures II	90
OT1120	Workplace Exposure	60
TS1110	Shop Fundamentals	60
TS1300	Rigging	45
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
MP2340	Three Phase Systems	90
OL1400	Primary Control Devices	90
OL2110	Safety Grounding	45
OL2120	Quantity Cost line Estimate	45
OL2400	Underground Residential Distribution	90
OL2410	Live Maintenance (Rubber Glove)	45
OL2420	Hot Stick Live Line Maintenance <35kV	45
OL2430	Hot Stick Live Line Maintenance 35 kV-69kV	45
OL2440	Hot Stick Live Line Maintenance >69kV	45

CERTIFICATE

- **Two years**
- **September start**
- **Ridge Road Campus**
- **Note:** The first year of this program is offered every second year. The next intake is September 2004.

COURSES

CODE	TITLE	
Semester 1		**Hrs**
MP1310	AC/DC Fundamentals	90
RF1100	Refrigeration Fundamentals	90
RF1120	Refrigeration Shop Fundamentals	120
RF1130	Refrigeration Systems & Components	120
Related Courses		
Semester 2		**Hrs**
DR1700	Blueprint Reading & Sketching	75
MP1320	Single Phase Transformers	30
MP1430	AC Motors & Starters	120
RF1140	Refrigerant Piping	60
RF2110	Domestic Refrigeration Systems	75
Related Courses		
Semester 3 (Intersession)		**Hrs**
TS1200	Precision Measurements	60
TS1300	Rigging	45
Related Courses		
Semester 4		**Hrs**
RF1200	Packaged and Split Air Conditioning Systems	75
MP2330	Power Control Circuits	60
MP2340	Three Phase Systems	90
RF2130	Refrigeration ControlSystems	90
WD1210	Oxy-Fuel Cutting & Welding	60
Related Courses		
Semester 5		**Hrs**
RF2140	Commercial Refrigeration Systems	90
RF2150	Industrial Refrigeration Systems	90
RF2160	Compressors	75
RF2210	Central Air Conditioning	75
RF2300	Heat Pumps	90
OT1220	Workplace Exposure	60
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1210	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

INDUSTRIAL TRADES

Refrigeration & Air Conditioning

The Refrigeration and Air Conditioning program is designed to train individuals in the knowledge, skills, and experience necessary to mechanics in the field.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to write the Journeyperson's Examination.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

Small Equipment Repair

The Small Equipment Repair program is designed to train individuals in the knowledge and skills associated with the repair and maintenance of recreational equipment, such as snowmobiles, ATVs, motorcycles, personal water crafts and outboard motors, as well as fuel-powered tools, such as snowblowers, chainsaws and lawnmowers.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, and Government of Newfoundland and Labrador.

PROGRAM STRUCTURE

Training in the Small Equipment Repair program consists of four academic semesters, and a six-week intersession, delivered over a two-year period. Students complete all the required courses in this period of time.

Following the in-school training, students have to work the required amount of time in order to qualify to write the Provincial Journeypersons' Examination. People eligible to write this examination will be given the opportunity to complete an eight-week refresher course before doing so. Graduates may be eligible to become certified as Small Equipment Repair Technicians, Motorcycle Mechanics or Recreational Vehicle Service Technicians.

Students usually complete their training and required work experience to receive their Journeypersons' Certificate in three to four years.

OBJECTIVES

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

ENTRANCE REQUIREMENTS

A provincial High School Graduation Certificate or equivalent

OR

An Adult Basic Education Level III Graduation Certificate

OR

Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

CAREER OPPORTUNITIES

Graduates of the Small Equipment Repair program may find employment in a variety of mechanical settings, including the service, sales and/or parts departments of the many recreational vehicle dealerships that exist throughout the province. In addition, opportunities exist with independent garages, service stations, and repair shops, as well as manufacturers of recreational vehicles. Additional experience and training may lead to positions such as foreperson, supervisor, or inspector. Opportunities for self-employment are quite good in this area.

CERTIFICATE

- **Two years**
- **Start date varies**
- **Bay St. George Campus**

COURSES

CODE	TITLE	
Semester 1		**Hrs**
TS1100	Shop Fundamentals	90
TS1200	Precision Measurement	67.5
WD1210	Oxy-Fuel Cutting and Welding	60
MV1100	Engine Operations	45
MV1110	Lubrication Systems	45
Related Courses		
Semester 2		**Hrs**
WD1130	Gas Metal Arc Welding Fundamentals	45
MP1310	AC/DC Fundamentals	90
MV1160	Light Duty Engines	90
MV1430	Light & MediumDuty Starting and Charging Systems	67.5
MV1420	Ignition Systems	90
Related Courses		
Semester 3 (Intersession)		**Hrs**
MV1310	Gas Engine Air & Fuel Delivery Systems	90
MV2310	Gas InjectionSystems	90
Semester 4		**Hrs**
MV1330	Carburetted Fuel Systems	67.5
MV1620	Light & Medium Duty Cooling Systems	67.5
MV1550	Small Equipment Transmissions	67.5
SR1100	Lawn & Garden Equipment Servicing Fundamentals	45
SR1200	Snowmobile Servicing Fundamentals	67.5
SR1300	Motorcycle and ATV Servicing Fundamentals	45
SR1400	Marine Equipment Servicing Fundamentals	67.5
Semester 5		**Hrs**
SR1110	Lawn and Garden Equipment Troubleshooting and Repair	90
SR1210	Snowmobile Troubleshooting & Repair	90
SR1310	Motorcycle & ATV Troubleshooting & Repair	90
SR1410	Marine Equipment Troubleshooting & Repair	90
Related Courses		
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1210	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30

CERTIFICATE

- **One year**
- **September start**
- **Baie Verte and Clarenville Campuses**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1700	Basic Drawing & Sketching	75
PF1100	Pipe Fabrication (Layout)	45
PF1110	Template Development	90
PF1120	Ferrous Pipe Assembly	90
PF1130	Non-Ferrous Pipe Assembly	45
PF1160	Piping Shop Fundamentals	105
PF1170	Pipe Blueprint Reading	60
PF1300	Low Pressure Steam Boiler Systems	90
PF2240	Hot Water Heating Systems	105
TS1300	Rigging	45
WD1120	SMAW Fundamentals	90
WD1210	Oxy-Fuel Cutting & Welding	60
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
PF1210	Piping and Heating Control Systems	45
PF1220	Pump Installation	45
PF1330	Alternate Heat Generators	45
PF2210	Valves	45
PF2230	Steam Systems	90
PF2300	Industrial Burners	45
PF2410	Specialized Piping Systems	60
PF2440	Specialty Piping	45
PF2500	Cross Connection Control	45
RF1100	Refrigeration Fundamentals	90
WA1120	Fundamentals of Hydraulics and Pneumatics	90

INDUSTRIAL TRADES

Steamfitter/Pipefitter

This is a program designed to prepare persons for employment in the steamfitter/pipefitter trade.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

1. To develop skills in the use of the tools of the trade.
2. To develop good work habits and attitudes for employer and co-worker relations.
3. To develop good safe working attitudes on the job.
4. To provide related academic support skills and knowledge in mathematics, communication skills and science.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING

Safety hat, safety boots, safety glasses, coveralls, welding goggles, welding gloves, four meter tape, Math set (metric/imperial).

Truck/Transport Service Technician

This training service is designed to provide trainees with skills and knowledge required for employment in the field of Heavy Equipment Repair. Truck and Transport Technicians diagnose problems, locate the cause of the malfunction, dismantle and overhaul components. They repair defects, reassemble existing parts or fit new parts, and make final adjustments.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of the entry-level program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journyperson's Examination.

OBJECTIVES

1. To familiarize the students with the principles of operation, construction, care and maintenance of various types of hand tools and power tools.
2. To acquaint the students with the various routines and practices pertaining to the maintenance and repair of diesel powered trucks and trailer units.
3. To develop skills and to impart knowledge relative to this particular trade.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not meet the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EQUIPMENT REQUIRED FOR TRAINING

Tool kit, safety boots, clear safety glasses, two pairs of coveralls, welding gloves, welding goggles.

CERTIFICATE

- **43 weeks**
- **Start date varies**
- **Bay St. George Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
SV1100	Safety in the Shop	15
SV1110	Ozone Depleting Substances	16
SV1120	Gaskets, Seals, and Sealers	8
SV1130	Electrical and Electronic Basic Principles	90
SV1140	Hydraulic Basic Principles	30
SV1150	Service Information Systems	30
SV1160	Hand Tools	30
SV1170	Shop Tools and Equipment	30
SV1180	Fasteners, Tubing, and Fittings	30
SV1190	Lubrication and Fluid Services	30
SV1260	Hydraulic Brakes	60
SV1270	Air Brakes	60
SV1280	Drive Lines	30
SV1300	Engine Principles	75
SV1310	Cooling Systems	30
SV1330	Air Filtration & Exhaust Systems	30
SV1340	Gasoline Fuel Systems	15
SV1360	Diesel Fuel Supply Systems	15
SV1370	Batteries	15
SV1420	Wheels and Tires	30
SV1430	Wheel Balancing	15
SV1440	Front Axles and Suspension	45
SV1450	Steering Components	45
SV1460	Real Suspension Systems	75
SV1470	Basic Anti-Lock Brakes	30
SV1480	Dual Brake Air Systems	45
SV1490	Lighting Systems	30
SV1500	Wiring Harness and Accessories	30
TS1510	Occupational Health and Safety	4
TS1520	WHMIS	6
TS1530	First Aid	7
WD1300	Oxy-Fuel Welding	30
OT1160	Workplace Exposure	2wks
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
SV1310	Lubrication Systems	15
SV1350	Alternative Fuel Systems	15
SV1380	Starting Systems	30
SV1390	Charging System Components	30
SV2570	Engine Brakes and Retarders	15
SV2580	Engine Removal and Installation	30
SV2590	Turbochargers, Blowers and Intercoolers	30
SV2600	Diesel Engines Overhauling	90
SV2610	Diesel Engine Problems Diagnosis	30
SV2620	Injectors	30
SV2630	Injection Pumps	30
SV2640	Tune Ups and Diagnosis of Diesel Fuel Systems	30
SV2650	Electronic Fuel Control Systems	60
SV2660	Ignition Systems and Tune-Ups	15
SV2670	Air Conditioning Systems	30
SV2680	Basic Motive Power Computers	60
SV2690	Frames & Chassis	30
SV2700	Electronic Components of Anti-Lock Brakes	30
SV2710	Engine Clutches	30
SV2720	Manual Transmission	60
SV2730	Automatic Transmission	90
SV2740	Transfer Cases	30
SV2750	Drive Axle Assemblies	45
SV2760	Gasoline FuelInjection Systems	60
SV2770	Emission Controls	30
SV2780	Fifth Wheels	15
SV2790	Government Safety Inspections	7
SV2800	Preventive Maintenance Inspections	30
SV2810	Wheel Alignment	45
WD2320	Arc Welding	30
WD2330	MIG Welding	30

CERTIFICATE

- **One year**
- **Start date varies**
- **Burin, Corner Brook, Happy Valley-Goose Bay, Placentia, and Prince Philip Drive Campuses**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1120	Blueprint Reading for Welders	75
DR1720	Basic Drawing and Sketching	75
OT1150	Workplace Exposure	60
SF1200	Introduction to Template Development	45
WD1130	SMAW Fundamentals	45
WD1160	Shop Fundamentals	90
WD1210	Oxy-Fuel Cutting and Welding	60
WD1230	SMAW Fundamentals	60
WD1400	Introduction to Pipe Welding	45
WD1510	Metallurgy Fundamentals	45
WD1520	GAW Fundamentals	60
WD2110	Position Butt Welding	120
WD2210	Position Fillet Welding (SMAW)	75
WD2260	FCA Fundamentals	30
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
Advanced Level		**Hrs**
SF1300	Advanced Template Development	90
WD2160	Position Welding (SMAW)	60
WD2190	Specialized Welding and Cutting	45
WD2240	Pipe, Tubing, and Specialized Welding (SMAW)	150
WD2250	Position Welding (GAW)	120
WD2270	FCA Position Welding	60

INDUSTRIAL TRADES

Welder

This is a program designed to prepare persons for employment in the labour force as an apprenticed welder.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

1. To develop an awareness of and concern for good safety practices in the work place.
2. To provide a knowledge of the capabilities of oxygen, acetylene and arc welding equipment.
3. To understand the effects of these processes on materials.
4. To develop skill in applying weld material to obtain good welds.
5. To provide related academic skills and knowledge in Mathematics, Communication Skills and Science.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

The graduate may obtain employment as an apprenticed welder in machine shops, fabrication plants, garage, production plants, shipyards, oil rigs, Provincial, Federal and Municipal Governments. Additional experience and training leads to employment opportunities such as foreperson, supervisor, inspector, engineering assistant.

Welder/Fabricator

This is a program designed to prepare persons for employment in the labour force with the combined skills of a welder and a metal fabricator.

Students registering in this program are automatically considered apprentices and are registered with the Provincial Apprenticeship Board, Department of Education, Government of Newfoundland and Labrador. Students may select either stream for Journeyperson certification.

After successful completion of this program, and the required work experience, the apprentices qualify to return to complete advanced level training in preparation for writing the Journeyperson's Examination.

OBJECTIVES

1. To develop an awareness of and concern for good safety practices in the work place.
2. To provide a knowledge of the capabilities of oxygen, acetylene and arc welding equipment.
3. To study the effects of welding processes on materials and fitting.
4. To develop skills in applying weld material to obtain good welds.
5. To provide related academic skills and knowledge.
6. To develop skills in reading and interpreting blueprints.
7. To develop skills in proper layout and fabrication processes.

ENTRANCE REQUIREMENTS

High School Graduation
OR
Grade XI Certificate (Public Examinations or equivalent),
OR
Adult Basic Education graduation certificate,
OR
Persons 19 years of age or older who do not possess the educational prerequisite for this program may be considered on an individual basis under the Mature Student Clause.

EMPLOYMENT OPPORTUNITIES

The graduate may obtain employment as an apprentice in machine shops, fabrication plants, garage, production plants, shipyards, oil rigs, Provincial, Federal and Municipal Governments. Additional experience and training leads to employment opportunities such as foreperson, supervisor, inspector, engineering assistant.

CERTIFICATE

- **60 weeks**
- **Start date varies**
- **Port aux Basques Campus**

COURSES

CODE	TITLE	
Entry Level		**Hrs**
DR1120	Blueprint Reading for Welders	75
DR1710	Basic Drawing and Sketching	75
OT1140	Workplace Exposure	60
SF1100	Metal Preparation and Shop Flow	75
SF1120	Blueprint Reading for Fabricators	75
SF1130	Introduction to Sub-Assembly and Assembly Fabrication	60
SF1200	Introduction to Template Development	45
SF1220	Introduction to Plate Development	90
TS1300	Rigging	45
WD1130	SMAW Fundamentals	45
WD1160	Shop Fundamentals	90
WD1210	Oxy-Fuel Cutting and Welding	60
WD1230	SMAW Fundamentals	60
WD1400	Introduction to Pipe Welding	45
WD1510	Metallurgy Fundamentals	45
WD1520	GAW Fundamentals	60
WD2110	Position Butt Welding	120
WD2210	Position Fillet Welding (SMAW)	75
WD2260	FCA Fundamentals	30
Related Courses		**Hrs**
CM2150	Workplace Correspondence	45
MC1050	Introduction to Computers	30
MR1220	Customer Service	30
SD1700	Work Place Skills	30
SD1710	Job Search Skills (Seminar)	15
SD1720	Entrepreneurial Skills (Seminar)	15
SP2330	Quality Assurance/Quality Control	30
WELDER		
Advanced Level		**Hrs**
SF1300	Advanced Template Development	90
WD2160	Position Welding (SMAW)	60
WD2190	Specialized Welding and Cutting	45
WD2240	Pipe, Tubing, and Specialized Welding (SMAW)	150
WD2250	Position Welding (GAW)	120
WD2270	FCA PositionWelding	60
FABRICATOR		
Advanced Level		**Hrs**
SF1300	Advanced Template Development	90
SF1310	Advanced Plate Development	105
SF1320	Sub-Assemblies	90
SF1330	Structural Assembly	105
WD2190	Specialized Welding and Cutting	45

INFORMATION TECHNOLOGY

Information Technology Programs

The Information Technology Industry would include all those elements of the economy that are involved in the collection, processing, management, retrieval and transmission of data and information. Growth and change characterize the information industry. It is likely that this dynamic environment will be reflected in the number, type and location of IT programs as the College strives to respond appropriately to the human resource needs of the sector.

The School of Information Technology offers programs of study designed to prepare individuals for a career of working on computers. That is the design, development, installation, maintenance and support of computer hardware, software and networks. Other program areas, for example, multi-media or geographic information systems, commonly included in the IT sector are offered by other College schools.

The programs currently offered by the IT School include entry-level diploma programs as well as co-op, post-graduate and industry certification options. Continuing education courses related to computing and applications software are available for part-time study at most campuses, and a limited number are available through distributed learning.

The courses in these programs have been carefully selected and developed to assure learning outcomes which not only address technical and enabling academic skills but also employability and soft skills generic to the industry.

Students who have decided to become computer programmers need to be aware of their aptitude for this skill set. While math proficiency is an indicator, students are advised to write the Computer Programmer Aptitude Battery (CPAB) Test, which is available at most College campuses. This is not a pre-requisite but should be used as a career advisory tool, especially for applicants who are waitlisted for Information Technology programs.

Applicants should also note that while most Information Technology programs have a work term or co-op feature, the College cannot guarantee placement in industry.

Applied Business Information Technology (ABIT)

This program is designed to provide students with university degrees and three-year college diplomas with the appropriate theoretical and practical skills required by today's Information Technology marketplace, using hands-on training opportunities with state-of-the-art hardware and software. The program will provide the student with a broad introduction to and background in computer concepts, programming, operating systems, networking, and training in a wide variety of industry-recognized software packages.

CAREER OPPORTUNITIES

In most cases, graduates of this program will have the opportunity to start a new and exciting career path in the field of Information Technology, which would normally begin with an entry-level programming position continuing on to Programmer Analyst and then to Systems Analyst. It may also augment the student's initial degree or diploma.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from: 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level – chosen from any of the remaining 3000 level courses offered in the Senior High School Program
   a. Six credits at the 3000 level for those who complete a Language course
      OR
   b. Five credits at the 3000 level for those who complete an English course.

DIPLOMA (POST-GRAD)

- **3 Semesters/Work Term**
- **Start date varies**
- **Prince Philip Drive Campus**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
CP1120	Introduction to Programming I	6	5	3
CP3410	Fundamentals of Database Design	4	4	1
CP3420	Systems Analysis & Design I	4	3	3
CP1800	Designing Programming Algorithms	3	3	0
CR1100	Networking Fundamentals	4	4	0
SD1400	Work Term Preparation	P/F	1	

Prior to the start of the semester, a five-day seminar, MC1000, will be offered for those who need to refresh or document their basic computer skills. Contact the campus for details on the schedule.

Semester 2		Cr	Le	La
CP2120	Introduction to Programming II	4	3	3
CP2480	Microcomputer Database Programming	4	3	3
CP2280	Introduction to Object-Oriented Programming in Java	4	3	3
CR2100	Website Management	4	3	3
CP2810	Object-Oriented Systems Analysis & Design	4	3	2
SD1401	Work Term Preparation	P/F	1	

Semester 3		Cr	Le	La
WC1150	Work Term I	5	0	0
PR2450	Systems Project Proposal	0	1	0

Semester 4		Cr	Le	La
CP2270	Java Programming	4	3	3
CP2370	Multi-User Database Programming	4	3	3
PR2451	Systems Project Course	4	3	3
CP4460	Client-Server Systems Development	4	3	3
CT1100	COBOL Programming	4	3	2
SD3400	Career Preparation	P/F	1	

DIPLOMA

- **Two years**
- **September start**
- **Carbonear, Clarenville, Corner Brook, Gander, Happy Valley-Goose Bay, Labrador West, and Prince Philip Drive Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM1400	Communications	3	3	0
CP1160	Introduction to the Internet	2	1	2
CP2600	Computer Hardware Fundamentals	4	4	1
CP3110	MS-DOS	3	2	2
CR1100	Network Fundamentals	4	4	0
MC1150	Productivity Tools	4	3	2
Semester 2		**Cr**	**Le**	**La**
CM1401	Communications Skills	3	3	0
CP1150	Visual Basic	4	3	3
CP1320	Computer Troubleshooting	4	3	3
CP1280	Windows Client	4	3	2
CP2190	UNIX	2	1	2
MR1210	Customer Service	2	2	0
Semester 3		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
CP2170	Windows Server	4	3	3
CP3600	Computer Peripherals	3	2	2
CR1200	Computer Security	3	3	0
CR2310	Network Analysis & Design	3	2	2
CR2400	Internetworking	4	3	3
MC1151	Advanced Productivity Tools	3	2	2
XXXX	Basic General Knowledge Seminar			
Semester 4		**Cr**	**Le**	**La**
CM2200	Oral Communications	2	2	0
CP4470	Current Trends in Industry	3	2	2
CR2110	Novell	4	3	3
CR2120	Network Management SNS-SNMP	3	2	4
CR2220	Groupware	3	2	2
HR2400	Professional Development	P/F	2	1
XXXX	Business General Knowledge Seminar			
Semester 5		**Cr**	**Le**	**La**
WT1180	Work Term	P/F		

The intent of the Business General Knowledge Seminars is for students to gain a basic level of understanding for business line functions and processes. Students are encouraged to participate fully so that the essence of an applicable IT business operation can be properly outlined and discussed. The topical presentations and interactions are meant to introduce the student to a variety of business dimensions, sufficient for them to gain a familiarity with the terms and applications found in the IT business world.

INFORMATION TECHNOLOGY

Computer Support Specialist (Under Review)

The Computer Support Specialist program is a two-year program designed to train individuals to design, install, and maintain LAN/WAN computer network systems. It gives students a strong knowledge base of local and wide area networking, Internet/Intranet connectivity, network administration and the ability to function effectively with many new technologies.

The development of communication and interpersonal skills in a team environment contributes to the base of experience needed to become a computer support specialist.

CAREER OPPORTUNITIES

Given the current growth of the Internet and the push towards a true information superhighway, Computer Support Specialist graduates may find employment with information-based businesses in both the private and public sectors.

Many businesses, including school boards, colleges, libraries and entrepreneurial organizations, will have the need for graduates from the Computer Support Specialist program.

Opportunities for self-employment may also exist.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from:
   3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from:
   3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level – chosen from any of the remaining 3000 level courses offered in the Senior High Program:
   a. Six credits at the 3000 level for those who complete a Language course OR
   b. Five credits at the 3000 level for those who complete an English course.

OR

A Grade XI public examination pass with a 60% average including a 60% pass in Language and Matriculation Mathematics or 50% in Honours Math.

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:
Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222.
Mathematics from one of the following sections:
i. Mathematics: IM3212, IM3213 and IM3216
ii. IM3219

OR

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

Internet Application Developer

DIPLOMA

- **Three years**
- **To be announced**
- **Corner Brook Campus**

This three-year program is a comprehensive training program designed to include introductory courses for those who do not have any computer background. It places emphasis on programming, Internet development, systems analysis and design, management and program development of Database Management Systems.

Students will receive hands-on experience using the latest technologies. They will receive the skill set needed to obtain entry-level positions in the Information Technology sector. An emphasis is placed on soft skills and working in a team environment. Students complete a work term to enable them to become aware of and build on the skill set required to obtain a job in the market place.

Graduates may be employed in a variety of entry-level programming and software development, internet applications development, database development and database administrator positions.

PROGRAM OBJECTIVES

1. To provide students with a broad understanding of the fundamental computer skills necessary to work effectively and efficiently in the Information Technology industry.
2. To develop skills for effective communication, a capacity for leadership, teamwork, and co-operation in problem solving.
3. To develop skills for problem solving, and programming in desktop, enterprise, and Internet environments.
4. To develop skills for database creation, management, and security.
5. To develop quality assurance and project management skills.
6. To develop the required skills to effectively analyze, write, and maintain secure, customized computer applications based on user requirements.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level – chosen from any of the remaining 3000 level courses offered in the Senior High School Program.
   Six credits at the 3000 level for those who complete a Language course
   OR
   Five credits at the 3000 level for those who complete an English course

OR

A Grade XI public examination pass with a 60% average including a 60% pass in Language and Matriculation Mathematics or 50% in Honours Math

OR

An Adult Basic Education Level III Graduation Certificate including the following courses:

a. Communications IC3211, IC3112 Plus ONE of IC3116, IC3215, IC3321 or IC3222
b. Mathematics from ONE of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

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

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1				
CM1320	Communications Skills	3	3	0
MC1800	Software Applications I	4	3	2
CP1910	Internet Fundamentals	3	2	2
MA1900	Problem Solving for Information Technology	4	4	1
CR1100	Network Fundamentals	4	4	0
EP1160	Introduction to Business Functions	3	3	1
Semester 2				
CM1400	Communications Skills	3	3	0
MC1801	Software Applications II	3	2	3
CP1920	Computer Hardware & Troubleshooting I	4	3	2
CP1830	Programming I	5	4	4
CP1310	Windows Server Administration	4	3	2
Semester 3				
MA1910	Introduction to Numerical Problem Solving	4	3	2
EP1170	Business Information Fundamentals	3	3	1
CP1831	Programming II	4	3	3
CM2200	Oral Communications	2	2	0
CP1930	Introduction to Systems Analysis & Design	5	4	2
Elective				
Semester 4				
CP2830	Programming III	4	3	2
CP3410	Fundamentals of Database Design	4	4	1
CP1940	Website & Web Server Development	4	3	2
CM2300	Report Writing	2	2	0
CP1950	Systems II	4	3	3
Elective				
Semester 5 (Intersession)				
CP1960	Microcomputer Database Programming	4	6	4
CP1970	Java I	4	6	6
Semester 6				
WT1180	Work Term	P/F		
Semester 7				
CP2370	Multi-User Database Programming	4	3	3
CP1951	Systems Project III	4	2	5
CP1980	Website Scripting	3	2	2
CP2831	Programming IV	4	3	2
CP1971	Java II	4	3	3
Electives				
CP2190	Unix	2	1	2
HR2400	Professional Development	P/F	2	1
MR1210	Customer Service	2	2	0
CR1200	Computer Security	3	3	0
MM1950	Work Place Professionalism	3	3	0
LW2400	E-Business Law and Regulations	3	3	0
MR2630	E-Commerce Trends	3	3	0
SD1450	E-Business Career Development	2	2	0

DIPLOMA

- **Two years**
- **September start**
- **Clarenville Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CP1160	Introduction to the Internet	2	1	2
CP2050	Using Windows 95/NT	2	1	2
CP2600	Computer Hardware Fundamentals	4	3	2
MC1150	Productivity Tools	4	3	2
MM1100	Authoring Systems	3	3	0
CM1400	Comm. Skills I	3	3	0
VA1700	Graphic Art & Design	3	2	2
Semester 2		**Cr**	**Le**	**La**
MM1200	Instructional Design I	3	3	0
CP1120	Introduction to Programming I	6	5	3
MM1300	Media Acquisitions, Digitizing & Editing	2	1	2
MM2100	Multimedia Authoring I	3	2	4
MM2500	Computer Graphics I	3	2	2
MM2600	Computer Animation I	3	2	2
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
CP1400	Website Analysis & Design	3	2	2
CP2460	CGI Programming & Database Operation	3	2	2
MM1950	Workplace Professionalism	3	3	0
Semester 4		**Cr**	**Le**	**La**
CM1560	Creative Writing-Writing from Original Sources	3	3	0
CP2190	Unix	2	1	2
CP2280	Introduction to Object Oriented Java Programming I	4	3	3
CS2510	Software Project Planning	3	3	0
MM2101	Multimedia Authoring II	3	2	4
MM2501	Computer Graphics II	3	2	2
MM2601	Computer Animation II	3	2	2
Semester 5		**Cr**	**Le**	**La**
MM2800	Multimedia Trends	2	2	2
CP2570	Multimedia Java Programming II	4	3	3
CP1500	Business Applications for Media	4	3	3
MR2110	Marketing Methods & Promotional Media	3	3	0
MM2350	Multimedia Production	2	1	2
MM1730	Multimedia Web Design Project	2	0	6
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
MM2780	Work Term	6wks		

INFORMATION TECHNOLOGY

Multimedia: Internet Development

There is a strong demand for workers who have Multimedia and Internet Development skills. Steady growth in Marketing, Educational, Entertainment, Promotional and Productivity industries requires workers who can create Multimedia applications and who can develop interactive websites.

The Multimedia Internet Development program concentrates on the design, development and production of interactive multimedia applications that can be delivered on the Internet and/or on CD-ROM or DVD. Such multimedia website applications are in demand from clients all over the world.

The primary focus of this Multimedia Internet Development program is on the design and development of media-rich interactive websites and multimedia applications targeted at schools, businesses and community groups. This development includes the creation of educational software and websites for classroom use and for distance education, the making of marketing software for e-commerce, advertising and promotional use, and the production of 2D and 3D graphics and animation, digital audio and digital video. It also includes scriptwriting and content development for the Internet and software applications, as well as programming in Internet languages such as HTML, PHP, Perl, Java, JavaScript, and Visual Basic.net. All design and development work in the Multimedia Internet Development program is done in an environment that stresses hands-on skills and knowledge of computer hardware and peripherals, Windows and UNIX operating systems and computer networking systems.

OBJECTIVES

1. To introduce the student to the multimedia work environment and to computer and peripheral devices used for creating online and offline multimedia content.
2. To provide the student with the knowledge and skills required for designing and developing multimedia and Internet applications.
3. To provide the student with technical instruction in multimedia- and Internet-related topics such as computer hardware and software, computer programming, multimedia authoring applications, website design, graphics, animation, digital media acquisition and editing, and to apply this knowledge in the production of multimedia websites and applications.
4. To provide the student with specialized instruction in subjects such as communications, instructional design, marketing and to relate this information to the production of multimedia websites and applications.
5. To assist the student in the development of the personal skills which are in demand by employers, including the ability to manage information, to think and solve problems, to be responsible and adaptable workers, to work well in teams and to produce quality work.

EMPLOYMENT OPPORTUNITIES

Graduates of this program take advantage of the excellent potential for work in the multimedia and Internet development industries. Graduates are employed in advertising, website design and the entertainment businesses, and with educational and public service agencies. Graduates have also set up their own multimedia production and Internet service businesses.

ENTRANCE REQUIREMENTS

A provincial high school graduation certificate with a 60% average in the following:

1. Language (one credit-minimum 60%) from 3101, 3102, 3103, 3124
   OR
   English 3211 (minimum 60%)
2. Mathematics (two credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4224 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level - Chosen from any of the remaining 3000 level courses offered in the Senior High Program - six additional credits are required if a Language course was completed, five additional credits are required if the English course was completed.

OR

A Grade XI public examination pass with a 60% average including a 60% pass in Language or English and Matriculation Mathematics or 50% in Honours Math.

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222.
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

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

Programmer Analyst (Business)

This two-year diploma program provides a foundation in computer technologies and introduces students to the world of business.

The program places emphasis on systems analysis and design, programming languages and database programming and management. Hands-on experience with a variety of hardware and software is provided, as well as the opportunity to develop team building, communication and interpersonal skills. When combined with work experience, this skill set prepares students for the role of programmer analyst in a business environment.

CAREER OPPORTUNITIES

Graduates of the Programmer Analyst (Business) program may find employment in computer-related occupations with government departments and a wide variety of businesses and organizations. Typical activities may include computer programmer analyst, database development, systems analysis and e-business.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from:
   3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%)
   Chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level - Chosen from any of the remaining 3000 level courses offered in the Senior High Program:
   a. Six credits at the 3000 level for those who complete a Language course OR
   b. Five credits at the 3000 level for those who complete an English course.

OR

A Grade XI public examination pass with a 60% average including a 60% pass in Language and Matriculation Mathematics or 50% in Honours Math.

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222.
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216
   ii. IM3219

OR

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

DIPLOMA

- **Two years**
- **September start**
- **Corner Brook and Grand Falls-Windsor Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM2100	Communications	3	3	0
CP1120	Introduction to Programming I	6	5	3
CP1510	Windows Operating Systems	3	2	2
CP1610	Introduction to Computer Components	2	2	1
MC1150	Productivity Tools	4	3	2
MA1500	Mathematics for Computer Studies	4	4	0
Semester 2		**Cr**	**Le**	**La**
CM2200	Communications	2	2	0
CP2120	Introduction to Programming II	4	3	3
CP2480	Microcomputer Database Programming	4	3	3
CR1100	Network Fundamentals	4	4	0
CR1500	Website Development	3	2	2
EP1170	Introduction to Business Fundamentals	3	3	1
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AC1300	Accounting	4	3	2
CP2190	Unix	2	1	2
XXXX	Work Term Seminar	0	0	1
Semester 4		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
CP3200	Object-Oriented Programming	4	3	3
CP3410	Fundamentals of Database Design	4	4	1
CP3420	Systems Analysis & Design I	4	3	3
CP2170	WindowsServer	4	3	3
	or			
CR2110	Novell	4	3	3
XXXX	Work Term Seminar	0	0	1
Semester 5		**Cr**	**Le**	**La**
CP2370	Multi-User Database Prog.	4	3	3
CP4420	Systems Design & Development	5	4	2
CP4460	Client-Server Database Systems	4	3	3
XXXX	Work Term Seminar	0	0	1
MM1950	Workplace Professionalism	3	3	0
One Option to be chosen from				
CP2260	Legacy Systems	5	3	6
CP2280	Introduction to Object-Oriented Programming in Java	4	3	3
CP2610	Scripting Languages	4	3	2
CT3110	Windows Programming	4	3	3
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
WT1180	Work Term	P/F		

DIPLOMA

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

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM2100	Communications	3	3	0
CP1120	Introduction to Programming I	6	5	3
CP1510	Windows Operating Systems	3	2	2
CP1610	Introduction to Computer Components	2	2	1
MC1150	Productivity Tools	4	3	2
MA1500	Mathematics for Computer Studies	4	4	0
SD1400	Work Term Preparation	0	0	1
Semester 2		**Cr**	**Le**	**La**
CM2200	Communications	2	2	0
CP2120	Introduction to Programming II	4	3	3
CP2480	Microcomputer Database Programming	4	3	3
CR1100	Network Fundamentals	4	4	0
CR1500	Website Development	3	2	2
EP1170	Introduction to Business Fundamentals	3	3	1
XXXX	Work Term Seminar	0	0	1
Semester 3		**Cr**	**Le**	**La**
WC1150	Work Term I	5	0	0
Semester 4		**Cr**	**Le**	**La**
AC1300	Accounting	4	3	2
CM2300	Report Writing	2	2	0
CP3410	Fundamentals of Database Design	4	4	1
CP3420	Systems Analysis & Design I	4	3	3
CT1120	Computer Programming in C++	4	3	3
MM1950	Workplace Professionalism	3	3	0
XXXX	Work Term Seminar	0	0	1
Semester 5		**Cr**	**Le**	**La**
WC2150	Work Term II	5	0	0
Semester 6		**Cr**	**Le**	**La**
CP2190	Unix	2	1	2
CT1100	Cobol Language	4	3	2
CP2280	Introduction to Object-Oriented Programming in Java	4	3	3
CP4420	Systems Analysis & Design II	5	4	2
CR2110	Novell	4	3	3
	or			
CP2170	Windows Server	4	3	3
XXXX	Work Term Seminar	0	0	1
Semester 7		**Cr**	**Le**	**La**
WC3150	Work Term III	5	0	0
Semester 8		**Cr**	**Le**	**La**
CP2560	Advanced Java Programming	4	3	3
CP2370	Multi-User Database Programming	4	3	3
CP4460	Client-Server Database Systems	4	3	3
CP4470	Current Trends In Industry	3	2	2
MA2610	Introduction to Management Science	4	3	2
SD3400	Career Preparation	P/F	1	

Successful completion of three work terms is required for graduation with a co-op diploma. However, in exceptional circumstances and with college approval, the co-op diploma may be awarded to students who successfully complete two work terms.

Programmer Analyst (Business) Co-op

Programmer Analyst (Business) Co-op is a three-year cooperative education program which trains students to work effectively in business computer programming environments. After the first year of studies students will alternate between academic semesters and work term semesters for a total of eight semesters. At the end of this three-year program, students will have acquired forty-eight weeks of relevant work experience.

The program places emphasis on systems analysis and design, programming languages, and database programming and management. Hands-on experience with a variety of hardware and software is provided, as well as the opportunity to develop team building, communication and interpersonal skills. When combined with work experience, this skill set prepares students for the role of programmer analyst in a business environment.

CAREER OPPORTUNITIES

Graduates of the Programmer/Analyst Co-op program may find employment in computer-related occupations with government departments, and a wide variety of businesses and organizations. Typical activities may include computer programmer analyst, database development, systems analysis and e-business.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from: Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3191, 4224 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level - chosen from any of the remaining 3000 level courses offered in the Senior High Program:
   a. Six credits at the 3000 level for those who complete a Language course OR
   b. Five credits at the 3000 level for those who complete an English course.

OR

A Grade XI public examination pass with a 60% average including a 60% pass in Language and Matriculation Mathematics or 50% in Honours Math.

OR

An Adult Basic Education Level III Graduation Certificate including the following courses:

a. Communication Skills 3211, 3112, and ONE of 3116, 3215, 3321, or 3222.
b. Either Mathematics 3212, 3213, and 3216 or Mathematics 3219.

OR

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

Programmer Analyst (Networking)

This two-year program provides a foundation in computer technologies with a strong emphasis on networking and network operating systems, programming languages and Internetworking. The program contains network and programming skill sets and provides hands-on experience with a variety of software and hardware.

The development of communication and interpersonal skills in a team environment contributes to the base of experience needed to become a programmer analyst.

CAREER OPPORTUNITIES

Graduates of the Programmer Analyst (Networking) program may find employment in computer-related occupations with government departments and a wide variety of businesses and organizations. Typical activities may include computer programming analyst, microcomputer support specialist, and network support/administrator.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from:
   Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level - Chosen from any of the remaining 3000 level courses offered in the Senior High Program:
   a. Six credits at the 3000 level for those who complete a Language course OR
   b. Five credits at the 3000 level for those who complete an English course.

OR

A Grade XI public examination pass with a 60% average including a 60% pass in Language and Matriculation Mathematics or 50% in Honours Math.

OR

An Adult Basic Education Level III Graduation Certificate consisting of the following courses:

a. Communications IC3211, IC3112 plus ONE of IC3116, IC3215, IC3321, or IC3222.
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213 and IM3216

OR

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

DIPLOMA

- **Two years**
- **September start**
- **Corner Brook and Grand Falls-Windsor Campuses**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM2100	Communications	3	3	0
CP1120	Introduction to Programming I	6	5	3
CP1510	Windows Operating Systems	3	2	2
CP1610	Introduction to Computer Components	2	2	1
MC1150	Productivity Tools	4	3	2
MA1500	Mathematics for Computer Studies	4	4	0
Semester 2		**Cr**	**Le**	**La**
CM2200	Communications	2	2	0
CP2120	Introduction to Programming II	4	3	3
CP2480	Microcomputer Database Programming	4	3	3
CR1100	Network Fundamentals	4	4	0
CR1500	Website Development	3	2	2
EP1170	Introduction to Business Fundamentals	3	3	1
Semester 3 (Interssion I)		**Cr**	**Le**	**La**
CP1320	Computer Troubleshooting	4	3	3
CP2190	Unix	2	1	2
XXXX	Work Term Seminar	0	0	1
Semester 4		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
CP2170	Windows Server	4	3	3
CP2280	Introduction to Object-Oriented Programming in Java	4	3	3
CP2510	Unix Management	3	2	2
CR1310	Network Troubleshooting	3	2	3
CR2310	Network Analysis and Design	3	2	2
XXXX	Work Term Seminar	0	0	1
Semester 5		**Cr**	**Le**	**La**
CP2560	Advanced Java Programming	4	3	3
CR1450	TCP/IP	3	3	1
CR2110	Novell	4	3	3
CP2440	Web Server I	3	2	3
	or			
CP2450	Web Server II	3	2	3
MM1950	Workplace Professionalism	3	3	0
XXXX	Work Term Seminar	0	0	1
Semester 6 (Interssion II)		**Cr**	**Le**	**La**
WT1180	Work Term	P/F		

DIPLOMA

- **Two years**
- **Start date varies**
- **@College Distributed Learning Service**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
CM2100	Communications	3	3	0
CP1310	Windows NT Administration	4	3	2
CP2190	Unix	2	1	2
CR1100	Networking Fundamentals	4	4	0
MA1500	Mathematics for Computer Studies	4	4	0
MC1150	Productivity Tools	4	3	2
Semester 2		**Cr**	**Le**	**La**
CM2300	Report Writing	2	2	0
CP1120	Introduction to Procedural Program (PERL)	6	5	3
CP2510	Unix Management	3	2	2
CP3410	Fundamentals of Database Design	4	4	1
CR1500	Website Development	3	2	2
MM2500	Computer Graphics (2D)	3	2	2
Semester 3		**Cr**	**Le**	**La**
CP1400	Website Analysis & Design	3	2	3
CP2460	CGI Programming	3	2	2
MM1950	Workplace Professionalism	3	3	0
Semester 4		**Cr**	**Le**	**La**
CM2200	Communications	2	2	0
CP2280	Introduction to Object-Oriented Java Programming	4	3	3
CP2440	Web Server I	3	2	3
CP2480	Database Programming	4	3	3
CR1450	TCP/IP	3	3	1
XXXX	Business General Knowledge Seminar			
Semester 5		**Cr**	**Le**	**La**
CR1200	Computer Security	3	3	0
CP2170	Windows Server	4	3	3
CP2450	Web Server II	3	2	3
CP2610	Scripting Language	4	3	2
CR1550	Website Trends	2	1	3
PR2110	Project	2	0	4
XXXX	Business General Knowledge Seminar			
Semester 6		**Cr**	**Le**	**La**
WC1330	Work Term	P/F		

The intent of the Business General Knowledge Seminar is for students to gain a basic level of understanding for business line functions and processes. Students are encouraged to participate fully so that the essence of an applicable IT business operation can be properly outlined and discussed. The topical presentation and interactions are meant to introduce students to a variety of business dimensions, sufficient for them to gain a familiarity with the terms of applications found in the IT business world.

INFORMATION TECHNOLOGY

Website Administration

The Website Administration program is a two-year diploma program which trains students to effectively choose, install, configure, and administer a WWW server - for UNIX or Windows NT.

Graduates will have knowledge and skills in CGI scripting, server configuration, multi-honed Web servers, access control, database integration, firewalls, proxy servers, web server software, web page design, HTML, Java, and PERL programming, and website maintenance.

The development of communication and interpersonal skills in a team environment contributes to the base of experience needed to become a website administrator.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from:
   3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from:
   3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from: Advanced:
   3201, 3211, 3221, 3231, 3271, 3281, 3291, 4224 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Additional credits at the 3000 level - Chosen from any of the remaining 3000 level courses offered in the Senior High Program:
   a. Six credits at the 3000 level for those who complete a Language course
   OR
   b. Five credits at the 3000 level for those who complete an English course.

OR

Grade XI Public Examinations pass or equivalent with a 60% average including a 60% pass in language, 60% in Matriculation Math, or 50% pass in Honours Mathematics.

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following

Courses:

a. Communications IC3211 & IC3112 plus one of IC3116, IC3215, IC3321, or IC3222
b. Mathematics from one of the following sections:
   i. Mathematics IM3212, IM3213, IM3216.
   ii. Mathematics IM3219
c. Science from one of the following sections:
   i. Biology IB3113, IB3214, IB3115, IB3116
   ii. Chemistry IH3215, IH3116, IH3317, IH3118
   iii. Physics IP3111, IP3112, IP3215, IP3216
   iv. Earth Science IS3212, IS3213, IS3214

OR

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

CAREER OPPORTUNITIES

Graduates of this program will find employment as Webmasters, Website Administrators, Web Developer/Designer, Webmaster Specialist, Certified Web Technician, Web Page Producer, and Web Programmer.

NATURAL RESOURCES

DIPLOMA

- **Two years**
- **September start**
- **Corner Brook Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
BL1120	Biology I	3	2	3
CM1400	Communication Skills	3	3	0
CS1600	Leadership I Wilderness Travel	4	4	0
AT1510	Water Safety	3	2	4
GE1120	Geology	3	2	3
SU1150	Field Navigation	3	2	3
MC1050	Introduction to Computers	2	2	0
Semester 2		**Cr**	**Le**	**La**
EN2120	Environmental Citizenship	3	3	0
AT1220	Heritage Interpretation I	4	4	0
CS1300	Wilderness Medicine	1	0	3
AT1100	Adventure Tourism Industry	4	4	0
AT1500	Cross-Country Skiing	1	0	4
HM2210	Hospitality Marketing	3	3	0
AC1300	Accounting	4	3	2
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
AT1520	Canoeing	2	0	8
AT2510	Sea Kayaking	2	0	8
BL1700	Ornithology	3	4	4
BL2230	Coastal/Marine Ecosystems I	4	6	4

During the intersession many of the required objectives will be achieved while participating in related field camp activities. Students must be prepared to pay the Resources Camp Fee for this period.

Semester 4		**Cr**	**Le**	**La**
AT1221	Heritage Interpretation II	1	0	3
BL2210	Freshwater & Wetlands Ecosystems	4	3	2
BL2220	Boreal Forest & Barren Ecosystems	4	3	2
BL2231	Coastal/Marine Ecosystems II	4	3	2
GI1100	Historical Geography	3	3	0
CS1601	Leadership II Guiding Principles	3	3	0
GE2400	Physical Geology	4	3	2
Semester 5		**Cr**	**Le**	**La**
EP1100	Entrepreneurial Studies	4	3	2
AT1300	Ethics for Sustainable Tourism	3	3	0
AT2500	Backcountry Skiing	2	0	7
CP2340	Desktop Publishing	3	2	2
CS2600	Leadership III Wilderness Survival	4	3	3
HY1300	NewfoundlandHistory	3	3	0
LW1300	Legal Liability & Risk Management	3	3	0
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
OJ1160	Work Term	3wks		

NATURAL RESOURCES

Adventure Tourism - Outdoor Recreation

Adventure Tourism - Outdoor Recreation is a comprehensive education and training program designed to prepare individuals for challenging careers in the fastest growing sector of the tourism industry. This program provides students with a solid foundation in the natural sciences and social history of the province of Newfoundland and Labrador and a strong base in outdoor leadership skills and techniques. The ability for graduates to deliver high quality environmental and cultural interpretation to a broad audience is a fundamental goal of the program. The program addresses Aexcellence@ by assisting students in becoming confident leaders skilled in imparting information to others in an interesting and enjoyable way.

There will be a number of extended field experiences in demanding environments which will develop students= inner strengths, group management and living skills, and personal technical skills in a range of outdoor pursuits: sea-kayaking, canoeing, cross-country skiing, back-country skiing, camping, and back-packing.

OBJECTIVES

1. To provide learning opportunities for students to develop the necessary knowledge and skills for employment in the Adventure Tourism - Outdoor Recreation industry.
2. To provide students with opportunities to develop appreciation and pride for our natural and social histories, and to develop skills to interpret them to others.
3. To develop in students an acceptable entrance level competency in selected outdoor recreation activities and to prepare them for various certificates associated with the industry.

THE CONTEXT

The Diploma of Adventure Tourism - Outdoor Recreation is a two-year industry driven program based in spectacular Western Newfoundland, 90 minutes from Gros Morne National Park. The program has access to two UNESCO World Heritage Sites, numerous National Historic Sites, and breathtaking natural wilderness and ocean environments. It is supported by a world class public college system with an excellent transfer program with colleges and universities across Canada.

The Province of Newfoundland and Labrador has an adventure tourism product of world-class potential, and to become competitive in an international marketplace the product, as well as the service, must be exceptional. This program has been designed to ensure that the province will have highly skilled individuals to fulfil the projected demand in the industry.

FUTURE OPPORTUNITIES

Tourism is a growth industry; and according to the World Tourism organization, it is now the largest industry in the world. Adventure Tourism is the fastest growing sector of the industry, expanding at a rate of 30% annually.

In this province, Adventure Tourism is in its infancy and therefore, employment opportunities continue to grow each year. There are recognizable peak seasons in the industry and they occur in the summer months and, in some areas of the province, for a two to three-month period in the winter. Job opportunities in this province such as hard adventure tour guides, bus tour guides, cruise ship interpreters, are seasonal in nature and fall within the two peak seasons. In addition to these jobs, opportunities may exist in the provincial and national parks as interpreters, and program co-ordinators for youth camps and environmental education programs. Since a major portion of programming deals with natural resources, possibilities may exist in the area of resources management.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from:
   3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from:
   3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Science (4 credits) two must be selected from:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Environmental Science: 3205
   Geology 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems 3213 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Science ... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

PERSONAL EQUIPMENT REQUIREMENTS

Students will be required to obtain quality outdoor clothing and equipment for this course. A list of suggested items is posted on the program web page or is available upon request.

Note: Students should be aware that additional fees and expenses may apply for some certifications.

Environmental Technology (Co-op)

DIPLOMA

- **Three years**
- **September start**
- **Corner Brook**

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

The College offers a three-year Co-operative Education diploma program in Environmental Technology. The co-operative education component affords graduates the opportunity to combine practical work experience with academic learning. Students are eligible to proceed to the Bachelor of Technology Environmental Program at the University College of Cape Breton in Sydney, Nova Scotia upon successful completion of the diploma program.

OBJECTIVES

1. To train students in the environmental field at a technical level.
2. To provide knowledge and skills related to all aspects of environmental technology.
3. To provide knowledge and experience in working with specialized equipment and techniques used in the field.

FUTURE OPPORTUNITIES

The graduate of the program may obtain employment in government or private industry. Employment would include such work as providing technical support to professional pollution control specialists, providing technical assistance with impact assessment studies to firms and/or consultants, and assisting government and industry in promoting their environmental education programs.

PERSONAL EQUIPMENT

Lab Coat, Safety Glasses, Graphics Calculator

PROGRAM TRANSFERABILITY

Following successful completion of the diploma programs, students are eligible to proceed to proceed to the Bachelor of Technology, Enivronment program. For further details on this program refer to the University College of Cape Breton Calendar.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from: 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from: Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290, (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Environmental Science: 3205
   Geology: 3203, 3213, 3223, 3272, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

In addition to the formal semester subjects listed in the program of studies, students in the Environmental Technology Co-op program are required to obtain certification in the following areas over their three-year period of studies:

Marine/Land Radio Operator
WHMIS
TDG
Small Boat Safety
Standard First Aid & CPR
Back Injury Prevention
Power Line Hazards

Students should be aware that additional fees and expenses apply for some of these certifications.

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
BL1100	Biology	4	3	2
CM1400	Communication Skills I	3	3	0
MA1100	Mathematics I*	5	4	2
MC1050	Introduction to Computers	2	2	0
CH1120	Chemistry I	4	3	2
EN1520	Environmental Sampling	3	2	2
EN2120	Environmental Citizenship	3	3	0
Total		24	20	8

*Admission into the appropriate Mathematics course will be decided by the grade in high school math.
EITHER
Students who received at least 70% in level III Math 3200 or a pass in Math 3201 can be exempted from MA1100
OR
Students who received a combined average of 70% in 2204 and 3204, or a pass in both of 2205 and 3205 can be exempted from MA1100.
The student must apply for the exemption.

Semester 2		**Cr**	**Le**	**La**
MA1140	Mathematics II	5	4	2
BL1130	Microbiology	4	3	3
CH1121	Chemistry II	4	3	2
EN2320	Occupational Health & Safety	3	2	2
CM1401	Communication Skills II	3	3	0
EG1100	Engineering Graphics	3	2	3

Semester 3 (Intersession I)		**Cr**	**Le**	**La**
CGE1300	Soil Fundamentals	3	4	6
SD1800	Co-op Education	0	4	0
EN2300	Environmental Law & Policy	3	6	0
SU1150	Field Navigation	3	4	6

Semester 4		**Cr**	**Le**	**La**
EN3200	Environmental Impact Assessment	3	3	0
EY2110	Basic Ecology	4	3	2
PH1100	Physics I	4	3	2
EN2500	Water Resources	4	3	2
CH2700	Analytical Chemistry	4	3	3
MA1670	Statistics	4	4	1

Semester 5		**Cr**	**Le**	**La**
CH3700	Organic Chemistry	4	3	3
EN1600	Environmental Site Assessment I	3	2	2
EN1540	Air Pollution	4	3	2
EN2220	Solid Waste Management	4	3	2
SU1550	Remote Sensing	3	2	3
PH1101	Physics II	4	3	2

Semester 6		**Cr**	**Le**	**La**
WC1520	Co-op Work Term I	5	0	30

Semester 7		**Cr**	**Le**	**La**
SU3210	Geographic Information Systems	2	1	3
EN1601	Environmental Site Assessment II	4	3	2
EN2540	Waste Water Management & Treatment	4	3	2
EN3300	Environmental Auditing	4	3	2
PR2550	Technical Thesis I	2	1	2
EN1530	Water Quality	4	3	2

Semester 8		**Cr**	**Le**	**La**
WC1521	Co-op Work Term II	5	0	30

Semester 9		**Cr**	**Le**	**La**
SU1400	Surveying	3	4	6
PR2551	Technical Thesis II	3	2	10
EN2700	Project Mgmt.	3	6	0

DIPLOMA

- **Two years**
- **September start**
- **Corner Brook Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
BL1120	Biology I	3	2	3
CM1400	Communication Skills	3	3	0
EN2120	Environmental Citizenship I	3	3	0
MA1100	Mathematics I	5	4	2
MC1050	Introduction to Computers	2	2	0
SU1150	Field Navigation	3	2	3
SU1710	Forest Surveying	3	2	3
Semester 2		**Cr**	**Le**	**La**
CM1401	Communication Skills II	3	3	0
EY2210	Silvics/Dendrology I	3	2	3
FR1330	Natural Resource Measurement I	3	2	3
FR1400	Wood Products	2	1	2
MA1670	Statistics	4	4	1
SU1550	Remote Sensing	3	2	3
LW2210	Natural Resources Policy & Law	4	4	0
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
FR1230	Forest Fire Management	3	4	6
FR2340	Forest Hydrology	3	4	6
FT1400	Forestry Field Camp	2wks		
Semester 4		**Cr**	**Le**	**La**
EY2211	Silvics/Dendrology II	3	2	2
FR1560	Timber Harvest I	2	1	2
FR1331	Natural Resource Measurements II	2	1	3
FR2350	Entomology/Pathology	3	2	3
FR2360	Silviculture	3	2	3
FT1401	Forestry Camp/Tour	1wk		
GE1300	Soil Fundamentals	3	2	3
SU3210	Geographic InformationSystems	2	1	3
Semester 5		**Cr**	**Le**	**La**
FR1561	Timber Harvesting II	4	3	3
FR2430	Wildlife Management	3	2	3
HR2200	Human Relations	2	1	2
LW2211	Law Enforcement	4	3	2
MN1800	Integrated Resource Management	4	3	3
PR2660	Technical Project & Presentation	2	1	2
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
OJ1300	On-the-Job Training	3wks		

In addition to the formal semester subjects listed in the program of studies, students in the Forestry Resources Technician and the Fish and Wildlife Technician programs are required to obtain certification of completion of the following training over their two-year period of studies:

Canoeing
Standard First Aid
Marine/Land Radio Operator
Fire Arm Safety
Hunter Capability
WHMIS/OHS
Scaling (3 days).

Students should be aware that additional fees and expenses apply for some of these certifications and for field camps, tours and On-the-Job Training.

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

NATURAL RESOURCES

Forest Resources Technician

The concept of proper management of forest lands using the principles of sustainable development and integrated resource management is rapidly being implemented across Canada. In Newfoundland and Labrador, as elsewhere, industry and government agencies are applying these principles to the management, protection and utilization of forest resources. This two-year technical program has been designed to provide graduates capable of making a meaningful contribution to the expanded requirement for ecosystem based technology within this changing environment. The program places great emphasis on field based activities as well as a significant computer based component.

OBJECTIVES

1. To provide students with the knowledge and skills that are required to actively participate in the solution of forest management problems and challenges.
2. To provide the knowledge and attitudes that will enable students to identify forest ecosystem challenges and opportunities and to undertake such assessments, preventive measures and treatments as might be associated with forest resource protection, management and utilization.
3. To provide knowledge and experience with a wide range of field and office equipment and techniques associated with the assessment and analysis of natural resources data.
4. To provide the foundation for continued learning experiences at the post graduate level.

FUTURE OPPORTUNITIES

The graduate 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. Many graduates have gone on to pursue studies with advanced standing at a number of Canadian universities.

SPECIAL REQUIREMENTS

Because of the extensive field exposure incorporated in this program, the student is required to acquire the following equipment and clothing: hard hat, compass, axe, snowshoes, quality safety boots, rainwear, and other clothing appropriate for outdoor work.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from:
   3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from:
   3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from: Advanced:
   3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290, (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
4. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Environmental Science: 3205
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics ... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
   3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

Fish and Wildlife Technician

With increasing emphasis on sustainable development, integrated resource policy and ecosystem based management across Canada and the world, technicians in the natural resources sector must have a foundation in matters related to biodiversity in general and fish and wildlife management issues in particular. This two-year program in Fish and Wildlife Technician, which shares many subjects with the Forestry Resources Technician program, has been designed to enable students with a specific interest in fish and wildlife to participate in studies directed specifically towards their career goals. The program reflects the trend towards integrating a wide range of natural resources technology within government departments at Federal and Provincial levels. The requirement for the forest industry to consider wildlife in its management practices and the increased monitoring and management of freshwater and marine resources highlights the need for this program. The program provides a balance of field and classroom experiences that includes 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.

FUTURE OPPORTUNITIES

The graduate 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.

SPECIAL REQUIREMENTS

Because of the extensive field exposure incorporated in this program, the student is required to acquire the following equipment and clothing: hard hat, compass, axe, snowshoes, quality safety boots, rainwear, and other clothing appropriate for outdoor work.

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:

1. Language (1 credit) (minimum 60%) chosen from: 3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) chosen from: 3201, 3211, 3202, 3212, 3231, 3232, 3281, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from: Advanced: 3201, 3211, 3221, 3231, 3271, 3281, 3291, 4225 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211, 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212, 3230, 3272, 3282, 3292, 4222
   Environmental Science: 3205
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR

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

OR

Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,

OR

An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:

1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

DIPLOMA

- **Two years**
- **September start**
- **Bonavista and Corner Brook Campus**

COURSES

CODE	TITLE	Hrs/wk Cr	Le	La
Semester 1		**Cr**	**Le**	**La**
BL1120	Biology	3	2	3
CM1400	Communication Skills I	3	3	0
EN2120	Environmental Citizenship	3	3	0
MA1100	Mathematics	5	4	2
MC1050	Introduction to Computers	2	2	0
SU1150	Field Navigation	3	2	3
GE1420	Physical Environments	3	2	3
Semester 2		**Cr**	**Le**	**La**
CM1401	Communication Skills II	3	3	0
FR1330	Natural Resource Measurement I	3	2	3
BL1400	Fish & Wildlife Biology	4	3	3
EY2210	Silvics/Dendrology I	3	2	3
MA1670	Statistics	4	4	1
SU1550	Remote Sensing	3	2	3
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
FT1410	Fish & Wildlife Spring Camp	2wks		
RM1400	Wildlife Techniques I	4	6	4
RM1500	Fisheries Techniques I	4	6	4
SU1400	Surveying	3	4	6
Semester 4		**Cr**	**Le**	**La**
EY1200	Ecosystem Ecology	2	1	3
FT1430	Fish & Wildlife Fall Camp	1wk		
HR2200	Human Relations	2	1	2
LW2210	Natural Resources Policy & Law	4	4	0
RM1401	Wildlife Techniques II	3	2	2
RM1501	Fisheries Techniques II	3	2	2
RM2200	Habitat Assessment	3	2	3
SU3210	Introduction to GIS	2	1	3
Semester 5		**Cr**	**Le**	**La**
CS2620	Wilderness Survival	2	1	2
EY2510	Population Ecology	3	2	2
LW2211	Law Enforcement	4	3	2
MN1810	Integrated Resource Management	2	1	2
PR2660	Technical Report	2	1	2
RM2420	Habitat Management	3	2	2
RM2410	Wildlife Techniques III	3	2	2
RM2500	Fisheries Techniques III	3	2	2
Semester 6		**Cr**	**Le**	**La**
OJ1301	On-the-Job Training	3wks		

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 of completion of the following training over their two-year period of studies:

Canoeing
Boating Safety
Coastal Navigation
Standard First Aid & CPR
Marine/Land Radio Operator
Firearm Safety
Hunter Capability
WHMIS/OHS

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

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

DIPLOMA

- **Two years**
- **September start**
- **Happy Valley-Goose Bay Campus**

COURSES

CODE	TITLE	Hrs/wk		
Semester 1		**Cr**	**Le**	**La**
BL1120	Biology	3	2	3
CM1400	Communication Skills I	3	3	0
MA1000	Essential Mathematics	0	3	0
MC1150	Productivity Tools	4	3	2
SU1150	Field Navigation	3	2	3
EY2110	Basic Ecology	3	2	3
Semester 2		**Cr**	**Le**	**La**
BL1400	Fish & Wildlife Biology	4	3	3
CS2620	Wilderness Survival	2	1	2
EY1420	Northern Ecosystems	4	3	3
HR2200	Human Relations	2	1	2
MA1670	Statistics	4	4	1
SU1550	Remote Sensing	3	2	3
EN2120	Environmental Citizenship	3	3	0
Semester 3 (Intersession I)		**Cr**	**Le**	**La**
FR1330	Natural Resource Measurements	3	2	3
RM1400	Wildlife Management Techniques I	4	3	2
AT1550	Wilderness Travel	3	4	4
OJ1180	On-the-Job Training	3wks		
Semester 4		**Cr**	**Le**	**La**
CM1401	Communication Skills II	3	3	0
DR1600	Forestry Graphics	3	3	2
GE1120	Geology	3	2	3
RM1401	Wildlife Management Techniques II	3	2	2
RM1500	Fisheries Management Techniques I	4	2	3
SE2200	Firearm/Hunter Safety	2	2	0
EY1440	Traditional Ecology Knowledge	4	4	0
LW2210	Natural Resource Policy & Law	4	4	0
Semester 5		**Cr**	**Le**	**La**
FR1550	Environmental Impacts of Timber Harvesting	4	3	2
FR2350	Entomology/Pathology	3	2	3
GE1300	Soil Fundamentals	3	2	3
LW2211	Law Enforcement I	4	3	2
SU3210	Geographic Information System	2	1	3
MA1100	Mathematics	5	4	2
Semester 6 (Intersession II)		**Cr**	**Le**	**La**
EY2210	Forest Ecology	3	2	3
RM1501	Fisheries Management Techniques II	3	2	2
RM2420	Habitat Management	3	2	2
OJ1181	On-the-Job Training	3wks		

Safety Training
In addition to the formal semester subjects listed in the program of studies, students will obtain certification in the following safety training courses:
Standard First Aid & CPR
Wilderness First Aid
Firearm Safety
Hunter Capability
WHMIS
Marine/Land Radio Operator
Flatwater Canoeing
Small Craft Safety.

Northern Natural Resources Technician

The Northern Natural Resources Technician Program is designed to produce competent technicians for various wildlife, forestry and fisheries agencies with major emphasis on working in northern ecosystems. The concept of proper management of our natural resources using the principles of sustainable development, integrated resource policy for ecosystem based management has become the norm in our global community. Industries and all levels of government around the world are beginning to apply these principles to the management, protection and utilization of our existing and changing environment and its resources. The program provides a balance of field and office experiences that includes a significant computer based data collection and analysis component.

Employment Opportunities
Graduates of this program are qualified for employment throughout Canada with federal and provincial governments and with private industry. Government agencies may include the Department of Fisheries and Oceans, Parks Canada, and the Department of Forestry, Resources, and Agrifoods. Typical job duties might include protection and enforcement, resource inventory, site classification, habitat protection and improvement, environmental impact assessments, parks programs, providing technical support and environmental education programs.

PROGRAM OBJECTIVES

1. To train students in the field of Natural Resources to the technician level.
2. To provide knowledge and skills related to all aspects to Northern Natural resources.
3. To provide knowledge and experience in working with specialized equipment and techniques used in the field.
4. To provide knowledge and experience with a wide range of office equipment and techniques associated with the assessment and analysis of natural resources data.
5. To foster positive attitudes toward forestry, wildlife and fisheries ecosystems and to deal effectively with challenges and problems that impact negatively on our environment.
6. To provide an understanding of the interaction between northern ecosystems and the native peoples living in them.
7. To provide the foundation for continued learning experiences.

PERSONAL EQUIPMENT REQUIREMENTS

Students in the Northern Natural Resources Technician Program are required to provide the following equipment:
1. Rain Gear
2. Field Clothes appropriate for outdoor work in various seasonal conditions
3. Safety/Hiking Boots
4. Rubber Boots
5. Backpack
6. Compass
7. Padlock
8. Scientific Calculator

ENTRANCE REQUIREMENTS

High School Graduation Certificate with a 60% overall average in the following:
1. Language (1 credit) (minimum 60%) chosen from:
   3101, 3102, 3103, 3112, 3172, 3192, 4121
   OR
   English (2 credits) (minimum 60%) chosen from:
   3201, 3211, 3202, 3212, 3231, 3232, 3181, 3282, 3291, 3292
2. Mathematics (2 credits) chosen from: Advanced:
   3201, 3211, 3221, 3231, 3271, 3281, 3291, 4224 (50%) minimum
   Academic: 3203, 3200, 3210, 3230, 3270, 3280, 3290 (60%) minimum
   OR
   Mathematics (4 credits) chosen from:
   Advanced: 2205, 3205 (50% minimum in each course)
   Academic: 2204, 3204 (60% minimum in each course)
3. Science (4 credits) two of which must be selected from:
   Biology: 3201, 3211 3231, 3271, 3281, 3291, 4221
   Physics: 3204, 3214, 3274, 3284, 3294, 4224
   Chemistry: 3202, 3212. 3230, 3272, 3282, 3292, 4222
   Environmental Science: 3205
   Geology: 3203, 3213, 3223, 3273, 3283, 3293
   Earth Systems: 3213, 3209
   Note: The remaining 2 Science credits to be chosen from the highest Science mark in level 1, 2 or 3.

OR
Persons 19 years of age or older, who have been out of school for at least one year and do not meet the educational prerequisite for this program, may be considered on an individual basis under the Mature Student Clause,
OR
Grade XI Public Examination pass with a 60% average including a 60% pass in language, 60% in Matriculation Mathematics or 50% in Honours Mathematics, and one Science course,
OR
An Adult Basic Education Graduation Certificate indicating completion of the academic stream including the following courses:
1. Communications IC3211 & IC3112 plus one of IC3116 or IC3215 or IC3321 or IC3222
2. Mathematics ... from one of the following sections:
   a. Mathematics IM3212, IM3213 and IM3216
   b. Mathematics IM3219
3. Science... from one of the following sections:
   a. Biology IB3113, IB3214, IB3115, IB3316
   b. Chemistry IH3215, IH3116, IH3117, IH3118
   c. Physics IP3111, IP3112, IP3215, IP3216
   d. Earth Science IS3212, IS3213, IP3214.

COURSE DESCRIPTIONS

AB1130 Metal Panel Repair
This course in autobody repair requires the use of basic tools, equipment, materials and supplies. It involves analysis of damage, removal of obstructions and repairing the damage. It includes information on metal panel repair techniques, characteristics of metal, effects of heat on steel, and the types of damage and repairs required.

AB1140 Glass
This autobody repair course requires the use of basic tools and equipment. It involves removing, replacing and adjusting glass. It includes information on types of glass and mountings, and replacement techniques.

AB1150 Non-Metal Panel Repair
This autobody repair course requires the use of basic tools, equipment, materials and supplies. It involves analyzing damage, cleaning, preparing and repairing non-metal panels. It includes information on types of bondable plastics and bonding methods, repair techniques, and plastic and fibreglass fillers.

AB1180 Estimating and Appraisal
This autobody repair course requires the use of specifications, manuals and estimate forms. It involves estimating parts and labour and calculating cost. It includes information on estimation techniques.

AB1210 Non-Integral Components I
This course in autobody repair requires the use of basic tools and equipment. It involves removing, replacing and adjusting non-integral components and eliminating leaks, wind noises, rattles and squeaks. It includes information on hoods, trunk covers, doors, bolt-on panels, tailgates, bumpers and radiators.

AB1211 Non-Integral Components II
A continuation of AB1210

AB1220 Surface Preparation
This course in autobody repair requires the use of basic tools, equipment, materials and supplies. It involves cleaning, sanding, masking, conditioning, undercoating, preparing the finish and painting. It includes information on surface preparation methods and techniques, types of paints and finishes, and problems encountered.

AB1230 Paint I
This autobody repair course requires the use of tools, equipment, materials and supplies. It involves preparing, cleaning, tacking, and applying sealer and top coat. It includes information on polishing compounds, types of paints and lacquers, application techniques, basecoat/clearcoat finishes, solvents, additives, hardeners and stripes and decals.

AB1231 Paint II
This autobody repair course requires the use of tools, equipment, materials and supplies. It involves personal safety and health protection along with environmental awareness, colour variation and matching, painting plastics, industrial refinishing, tri-coats, express clears and troubleshooting.

AB1320 Corrosion
This course is intended to provide students with the skills and knowledge required to identify corrosion and restore corrosion protection. It involves applications of corrosion protection products, and care and use of equipment required for corrosion protection.

AB1330 Uni-body and Frame Repair
Course provides training for uni-body and frame repairs.

AB1340 Structural Repair
This autobody repair course requires the use of basic tools, equipment, materials and supplies. It involves analyzing damage, making measurements, removing damaged area of panel, and making repairs. It includes information on the construction of panels, bodies and frames; and replacement and alignment techniques.

AB1400 Autobody Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

AB1410 Mechanical Components
Course provides training in inspection, removal, replacement and adjustment of mechanical systems required in autobody repair.

AB1500 GMAW Position Welding
This GMAW course requires the use of safety equipment, GMAW equipment and accessories for welding light metals, and 4materials and supplies. It involves setting up GMAW equipment, preparing and welding the joint, shutting down the equipment and testing the weld. It includes information on types of welding machines, types of shielding gas, power supplies, types of wire, codes and standards, welding techniques, methods of transfer and GMAW parameters.
Prerequisite(s): WD1130

AC1100 Bookkeeping I ●
Bookkeeping I is a study of the fundamental principles, the mechanics of bookkeeping, recording, classifying, and the summarizing of financial data for a service business. It involves the control of cash, petty cash, banking procedures, and payroll accounting.

AC1120 Computerized Accounting
Computerized Bookkeeping I is a study of the fundamental principles, the mechanics of bookkeeping, recording, and classifying. It involves the control of cash, petty cash and banking procedures. This course introduces the student to the concepts of a basic integrated accounting software package - Simply Accounting.

AC1260 Financial Accounting I
The student is introduced to accounting concepts in this course. Beginning with the recording of transactions he/she is led through the basics of the double-entry system of accounting from adjusting entries to financial statements. In addition, accounting for assets is investigated in more detail covering topics from the handling of cash through receivables and inventory. Accounting for payroll is also included.

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

AC1350 Income Tax
This is an introductory course covering 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, accounts payable, and the study and application of the generally accepted accounting principles within merchandising firms using special journals, end-of-the-year adjustments for depreciation, accruals, bad debts, closing entries, and financial statements.
Prerequisite(s): AC1100

AC2220 Intermediate Financial Accounting I
This course is designed to build on the knowledge 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): AC2240

AC2230 Computerized Accounting I ●
This course introduces the student to the concepts of a basic integrated accounting package such as DacEasy or Simply Accounting (Bedford).
Prerequisite(s): AC1100 or AC1240 or equivalent introductory accounting course and CP1450 or equivalent.

AC2250 Managerial Accounting I ●
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. Topics include organizational structure, cost terminology, job order and process costing, cost-volume-profit analysis, cost allocation, and segment analysis.
Prerequisite(s): AC2240

AC2260 Financial Accounting II
This is an introductory course focusing on the principles and procedures to account for fixed assets, liabilities, and equities. The student is introduced to the concepts of financial reporting and decision making for both partnerships and corporations.
Prerequisite(s): AC1260

AC2270 Managerial Accounting
This course covers the basic principles of cost accounting with application to engineering, 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 management decision-making and budget preparation.

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AC2280 Accounting
The course is designed to provide a working knowledge of the fundamentals of financial and 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): AC2240

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, AC2240

AC2600 Managerial Accounting for Human Resource Managers
This course is designed to introduce the students to the accounting techniques needed by management for planning and control, decision making, performance evaluation and preparation of internal reports. 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 Operation, and Pricing of Products and Services.
Prerequisite(s): AC2260

AC3220 Intermediate Financial Accounting II
This course is a continuation of the study of the principles and procedures covered in the previous semester of Intermediate Accounting. The contents present an in-depth study of the liabilities and owner's equity side of the balance sheet as well as the changes in financial position.
Prerequisite(s): AC2220

AC3230 Computerized Accounting II
This is a more advanced computerized accounting course. Students will be introduced to a computerized accounting package such as ACCPAC, Newviews, or System II.
Prerequisite(s): AC1100 or AC1240 or equivalent introductory accounting course and CP1450 or equivalent.

AC3250 Managerial Accounting II ●
This course is designed to build on the knowledge gained in Management Accounting I by taking the student's previous knowledge of cost behaviour and applying it to specialized areas of cost and management accounting including budgeting, standard costing, relevant cost analysis, pricing of products and services, and capital budgeting.
Prerequisite(s): AC2250

AC3260 Payroll and Commodity Taxes
This course is designed to provide students with a working knowledge of the various payroll taxes and provide the students with the ability to complete annual T-4, T-5, summary reports and so forth 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 T-1 general and T-2 corporate tax returns utilizing a software package.
Prerequisite(s): AC2240

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

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

AE2250 Power Electronics
This course introduces the student to practical circuit design and applications of electronic devices and circuits.
Prerequisite(s): AE1200

AE2300 Analog Electronics
This course involves the application of linear circuit theory to transistor circuits. The student will be introduced to linear models of discrete transistors and will learn how to use them to build up Generalized Amplifier models of complete amplifier systems.
Prerequisite(s): AE1200, ET2100

AE2301 Analog Electronics
This course is a continuation of Analog Electronics I AE2300 and introduces the student to analog applications of transistors beyond the amplifiers. Emphasis is placed on the analysis, design and troubleshooting.
Prerequisite(s): AE2300; ET2100

AE2320 Analog Electronics
This course will include the description, operation and application of simple electronic components with particular emphasis on semiconductor theory. Analysis techniques involving diode equivalent circuits will be introduced and expanded to bipolar transistor DC biasing; and amplifier systems.
Prerequisite(s): ET2100

AE2321 Analog Electronics
This course provides a study of analog applications of transistors beyond the amplifiers with emphasis on analysis, design and troubleshooting. Also included is a study of thyristors, UJTs and PUTs commonly used in power control applications
Prerequisite(s): AE2320

AE2400 Problem Solving & Trouble Shooting
This course acquaints the student with a model of the process of human problem solving. Students will be encouraged to analyze and improve their abilities by approaching new types of problems.
Prerequisite(s): AE2301, CI1100, DP2400

AE3100 Analog I.C.s
The purpose of this course is to provide the student with an understanding of the theory relating to differential and operational amplifiers, analog filters and signal generators. The theory covered in class will be applied and validated during the laboratory periods.
Prerequisite(s): AE2301

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 Industrial Electronics II
This course will introduce the student to process control and its applications in industrial settings.
Prerequisite(s): AE3300, MP2400

AF1110 Aircraft Structures and Materials
This course will provide the students with a knowledge of aircraft structural design and the materials and processes used in their construction. The students will be introduced to stresses acting on aircraft structures and will be able to determine the urgency of repair when damaged.

AF1120 Aircraft Structures, Materials & Processes
This course will provide the student with a knowledge of aircraft structural design and the materials and processes used in their construction, the effects of corrosion on these materials, treatment and preventative methods to control it. The student will be introduced to stresses acting on aircraft structures and will be able to determine the urgency of repair when damaged. This course will also provide the student a knowledge of the construction of aircraft windows and lenses and the required inspection, repair, servicing and installation methods.

AF1160 Aircraft Structural Repair (ASRT)
This course will develop further the students knowledge and skills in the principles of aircraft structural repair using sheet metal materials, fasteners, and equipment.
Prerequisite(s): AF1110

AF1210 Composite Materials
This course will provide students with the knowledge to identify composite materials, and the skill to inspect them for damage and do an effective repair when required.

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.

AF1230 Advanced Composite Materials
This course will provide students with the knowledge of advanced composite materials, the design and fabrication techniques used to construct high strength light weight primary structural aircraft components. In this course students will also demonstrate fabrication techniques.

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): AF1160

AF1330 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 manufacturer's standards.
Prerequisite(s): AF1230

AF1400 Specialized Processes and Fixtures
This course will provide the students with the knowledge and skill to be able to select or make jigs and holding fixtures, perform special metal treatment processes and repair forgings and extrusions as per manufacturer's specifications.

AF1500 Windshields, Windows and Lenses
This course will provide the students with the knowledge and skill to identify types of aircraft windshields, windows and lenses, inspect them for damage and evaluate whether repair or replacement is required, manufacture and install windows to fit aircraft structure and perform proper maintenance and repairs to windshields, windows and lenses.

AF2110 Aircraft Maintenance Fundamentals
This course will provide a student with a basic knowledge of aircraft maintenance fundamentals.
Prerequisite(s): GM1150

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

AJ1120 Rigging for Carpentry
This general studies course requires the use of rigging equipment, block and tackle, and safety equipment. It involves installing, testing and maintaining rigging, and tying knots and splicing rope. It includes information on safety requirements, types of ropes, types of knots and slings.

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

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

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

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

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

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

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

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

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

AJ1700 Architectural Conservation
An overview of Canadian architectural tradition will be studied through the examination of building styles and traditional building techniques as practiced regionally across Canada. Students will explore conservation principles and their practical applications as dictated by international conservation charters. Major topics include: heritage carpentry terminology, regional development in the geographic areas, influence of changing building technology on Canadian architecture, architectural styles that evolved in Canada, international conservation principles, good conservation practices based on accepted principles.

AJ1710 Building Science
This course provides a study of heat loss and sound transference. Students' understanding of theories and practice will be developed through instruction, demonstration and project applications. Major topics include: safety measures, heat loss and insulation, sound transference.

AJ2220 Structural Formwork
This course in site preparation and formwork requires the use of basic tools and equipment, materials and supplies, a surveyor's level and suitable facilities. It involves interpreting specifications and blueprints, layout, constructing and installing structural formwork, and cleaning up. It includes information on types of structural formwork; and designing, testing and placing formwork.

AJ2300 Hip and Valley Roof Framing
This course in roof framing requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpreting specifications and blueprints; layout, installation and construction of hip and valley roofs; and clean up... It includes information on types of intersecting roofs and construction techniques.

AJ2310 Gambrel, Mansard and Unusual Roof Framing
This course in roof framing requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, installation and inspection of customized roofs; and clean up. It includes information on types of unusual roofs and customized roof construction techniques.

AJ2330 Timber Trusses and Flat Roofs
This course in roof framing requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, construction, installation and inspection of timber trusses and flat roofs and special roof coverings. It includes information on the design and construction of timber trusses and flat roofs.

AJ2400 Posts and Beams
This course in posts and beams requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, construction and installation of beams and posts; and clean up. It includes information on types of post and beam construction and

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installation.
Prerequisite(s): AJ1220

AJ2410 Wood Scaffolds
This course in scaffolding requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, construction and installation of wood scaffolds; and clean up. It includes information on construction techniques and safety requirements for wood scaffolds.

AJ2500 Cabinets and Shelving
This course in interior finish requires the use of tools and equipment, materials and supplies and suitable facilities. It involves interpreting specifications and blueprints; layout, construction and installation of cabinets and shelving; and clean up. It includes information on internal elevations, and construction and installation techniques.

AJ2600 Interior Finish Stairs
This course in stair construction requires the use of tools and equipment, materials and supplies, and suitable facilities. It involves interpreting specifications and blueprints; layout construction and installation of interior finish stairs; and clean up. It includes information on construction techniques for common finish stairs.

AJ2700 Restoration Joinery Techniques I
This introductory course teaches students the theory and practice of repairing, reproducing and installing architectural millwork. Students will produce and install quality millwork, using traditional and contemporary techniques. Major topics include: safety measures, period moldings, trim carpentry techniques, reproducing wood mouldings, moulding repair, baseboard installation, crown moulding installation, door trims, window trims.

AJ2710 Restoration Joinery Techniques II
This second-level course continues to teach students the theory and practice of repairing, reproducing and installing architectural millwork. Students will produce and install quality millwork, using traditional and contemporary techniques. Emphasis will be placed upon traditional window and door construction. Major topics include: safety measures, traditional window construction, traditional door construction.

AJ2720 Restoration Joinery Techniques III
This third-level course continues to teach students the theory and practice of repairing, reproducing and installing architectural millwork. Students will produce and install quality millwork, using traditional and contemporary techniques. Emphasis will be placed upon designing and building stairs and steps. Major topics include: stair casing theory, basement stairs and exterior steps.

AM1100 The Cultural Context
This course is an introductory examination of the administrative and organizational structures and the individual functions and roles that collectively comprise the context of the Cultural Sector.

AM1200 Graphics Promotions Design
This course is designed to introduce Arts Management students to the rudiments of graphics design as a promotional tool. Topics such as image processing, elements of design, and principles of design will be discussed.

AM1300 Funding Culture
This course will provide a general overview of the funding options accessible to cultural enterprises, and will include a practical examination of the technical approaches to fundraising, grant submission, and project rationalization.
Prerequisite(s): AM1100

AM1400 Cultural Administration
This is a course dealing with the issues of administration management, and governance, over a broad range of cultural organizations and facilities.
Prerequisite(s): AM1100, AM1300

AS2100 Aircraft Hydraulics & Pneumatics Systems
The purpose of this course is to provide students with the knowledge of aircraft hydraulic and pneumatic systems, design, function, and operation, along with a basic knowledge of aircraft fluid lines and fittings. This is to enable students to inspection troubleshooting, repair and maintenance on these systems.
Prerequisite(s): GM1100, GM1200

AS2150 Aircraft Landing Gear System
The purpose of this course is to provide students with the knowledge of aircraft landing gear and associated systems, design operation and maintenance. This is to enable students to perform inspection troubleshooting, repair and maintenance on these systems.
Prerequisite(s): AS2100

AS2200 Aerodynamics and Flight Controls
This course is designed to provide the student with basic knowledge of aerodynamic forces, flight characteristics and aircraft design. Inspection and adjustments of flight controls is covered in depth.
Prerequisite(s): GM1310, GM1200

AS2300 Aircraft Systems
This course is designed to provide the student with basic knowledge of the operation of aircraft support, environmental and safety systems.
Prerequisite(s): GM1100, GM1200, PE1610

AS2400 Propellers and Systems
This course will provide the basic knowledge in design, construction, operation and maintenance of propellers and associated systems.
Prerequisite(s): PT1100

AS2500 Fuel Metering
This course will provide a knowledge of aircraft fuel systems, fuel metering systems, their design, components, function, operation and maintenance.
Prerequisite(s): PT1100

AT1100 Adventure Tourism Industry
This course provides an in-depth study of the adventure tourism industry. Terminology will be defined, tourism motivators will be identified, the economic impact of tourism will be discussed and the present structure and organization of the industry will be examined. Newfoundland and Labrador's tourism marketing position, competition, potential consumer markets, and sales techniques will be identified and discussed.

AT1220 Interpreting the Environment
This course will provide an opportunity to develop a variety of visual, verbal and written interpretive techniques and skills enabling students to better describe the environment to visitors.
Prerequisite(s): CM1400

AT1221 Heritage Interpretation II
To further the student's knowledge, confidence and skill in all aspects of minimum impact travel, wilderness navigation and group leadership; lead a group safely and efficiently in a variety of wilderness environments, both on land and water, exhibit high personal competence and confidence in planning, developing and leading GROUP INTERPRETATIVE outings; identify, assess, and respond to wilderness hazards, further skills in group menu planning, food packaging, and food preparation in a wilderness environment; ability to select, use, care for and store personal and group wilderness travel equipment.
Prerequisite(s): AT1220, CS1600, CS1601. Any two of: BL2220, BL2230, BL2210, GE1120, BL1120

AT1300 Ethics for Sustainable Tourism
This course begins with a definition of sustainable development, its origin and its implementation home and abroad. The relationship of sustainable development and tourism will be examined and topics such as ecotourism's role in sustainable development, ecotourism guidelines for nature tour operators, and ecotourism pitfalls will be examined. To ensure tourism product, customer service is another key factor and this topic will be addressed in this course.

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

AT1510 Water Safety
Students will acquire theoretical knowledge and personal skill in small craft safety and rescue techniques for canoeing and sea kayaking. Royal Life Saving (RLS) 1 & 2 level techniques will be introduced and practiced. Students must successfully complete Royal Life Saving 1 criteria. Students will have an opportunity to be tested for RLS certification. Students choosing to be tested for certification will be charged the RLS certification fee.

AT1520 Canoeing
Students will acquire theoretical knowledge and personal skill in: strokes, maneuvers, and rescue on flat and moving water; theory and practice of canoeing instruction; and canoe tripping leadership skills. Students will have an opportunity to be tested for the Canadian Recreational Canoe Association (CCA) certification for both flat water and moving water. Students who choose to be tested for Certification will be charged a certification fee.
Prerequisite(s): AT1510 and CS1600

AT1550 Wilderness Travel
This course is designed to teach the student the necessary skills required to travel in any wilderness setting.

AT2500 Backcountry Skiing
Students will acquire theoretical knowledge and personal skill in Nordic (backcountry) skiing techniques. Hill maneuvers on backcountry equipment will be taught. Ski equipment and accessories will be discussed. Students will have an opportunity to be tested for Level 1 - Canadian Association of Nordic Ski Instructors (CANSI) certification. A wilderness expedition will further develop backcountry ski technique; winter camping and wilderness survival skills, weather observation skills, avalanche awareness; route selection; map & compass use; and leadership skills.
Prerequisite(s): AT1500, CS1600

AT2510 Sea Kayaking
Students will acquire theoretical knowledge and personal skill in strokes, maneuvers, and rescue procedures. The evolution of the kayak and the sport, plus the equipment that is available, will be discussed. Kayak tripping leadership skills will be introduced.
Prerequisite(s): AT1510 and CS1600

AV1210 Aircraft Instruments I
To give the student an understanding of the operation and maintenance of instrument systems used in single and light twin engine aircraft. Units of measure and conversion between units of measure are also explored. This course will look at the operation, placement, lighting, installation, and shipping of instruments. We will explore the basic operation and maintenance of the type of systems found in light aircraft relating to altimetry, attitude and heading indication, engine monitoring, fuel quantity, non-stabilized magnetic direction indicating, pitot-static system components, pressure, and speed. Labs will include researching aircraft manuals, and instrument system inspections including verification of system operation.

AV1310 Communication and Navigation Systems
This is an introductory course designed to give the learner the basic concepts of all communication and navigation systems used on aircraft. Emergency Locator Transmitters (ELT's) will also be looked at. Basic radio theory will be studied to the block diagram level and ramp testing of various avionics systems will take place.
Prerequisite(s): PE1610

AV2110 Radio Navigation I
To give the student an understanding of the principles of operation and maintenance of short and medium range navigational systems which were developed in the mid-twentieth century and remain in use. This course will take a cursory look at the theory and operation of navigational aids. Systems covered include Automatic Direction Finders (ADF), Distance Measuring Equipment (DME), Instrument Landing System (ILS), Transponder (ATCRBS), and VHF Omni-Range (VOR). Installation considerations, including the identification and correction of Electro-Magnetic Interference and Radio-Frequency Interference (EMI/RFI) will be examined. Labs will include the installation of one or more systems.

AV2111 Radio Navigation II
This course is a continuation of Radio Navigation I. The student will acquire an understanding of the theory of operation of navigation systems that rely on microprocessor technology and those operating on the microwave bands. These systems include Area Navigation (RNAV), Global Positioning System (GPS), hyperbolic navigation / LORAN-C, Inertial Navigation System (INS), Radio Altimeter, Weather Radar, and includes a cursory look at Doppler Navigation principles. Finally, Electronic Flight Information System (EFIS) indicators, the Electronic Horizontal Situation Indicator (EHSI), and the Electronic Attitude Director Indicator (EADI), will be looked at. Labs include an installation, post installation testing, and troubleshooting of at least one system.
Prerequisite(s): AV2110

AV2210 Aircraft Instrumentation II
This course builds on the skill and knowledge obtained from the basic aircraft instruments course. The purpose of this course is to instill in the student an understanding of the operation and maintenance of instrument systems employed in larger aircraft. Areas to be explored include Air Data Systems, including indication and interfacing, engine monitoring, fuel quantity and fuel flow, vibration indication, heading and attitude reference systems, and Built In Test Equipment (BITE). Labs will include researching equipment manufacturer's documentation, and inspections of instrument systems.
Prerequisite(s): AV1210

AV2300 Communications Equipment
This course prepares the student to inspect, install, troubleshoot, repair and maintain electronic communication radio equipment and their systems.
Prerequisite(s): AV1310

AV2400 Auto Flight
This course of study will cover servo systems and components, aircraft dynamics, pitch, roll, yaw commands, and the fundamental principles involved in the automatic flight of both fixed wing and rotary wing aircraft.
Prerequisite(s): AV2210, AV2111

AV3100 Aircraft Monitoring & Digital Systems
This course takes a theoretical look at a wide variety of systems found on larger aircraft. Systems included will be those associated with digital communications, cockpit display technologies, Flight Data and Cockpit Voice Recording (FDR & CVR), fire detection and suppression, Ground Proximity Warning System (GPWS), Health and Usage Monitoring System (HUMS), ice detection, information (data) transmission/exchange, and pulse navigation systems employing data exchange techniques, such as Mode "S" transponder, and Traffic collision Avoidance System ITCAS).

BL1100 Biology
This is an introductory course in the first semester of the Natural Resources cluster designed to prepare the student for further biology related studies. Emphasis in labs and field trips will be directed to gaining an appreciation of natural ecosystems and associated life processes.

BL1120 Biology 1
This is an introductory course in the first semester of the Natural Resources cluster designed to prepare the student for further biology related studies. Emphasis in labs and field trips will be directed to gaining an appreciation of natural ecosystems and associated life processes.

BL1130 Microbiology
This is an introductory microbiology course designed to introduce students to the diversity of micro organisms, their relationship to environmental technology and the basic lab techniques used to identify and enumerate them. This course prepares students to apply microbiological techniques to monitor water and air quality, domestic and industrial water and wastewater treatment systems and site remediation projects.

BL1170 Biology
Transferable to MUN Biology 1001
This course is designated as an introductory Biology course. This course introduces the concepts of cell biology and processes, ecology, and taxonomy, and begins a survey of living things. Laboratory exercises focus on biological investigation techniques, cell structure and function, plant taxonomy, growth patterns and organs.

BL1171 Biology
Transferable to MUN Biology 1002.
This course is a continuation of BL1170. It is designed for students who wish to transfer to university after their second term. The course follows second term biology at Memorial University of Newfoundland (Bio 1002). This course continues with the survey of the Kingdoms begun in BL1170, looking at the anatomy, ecology, and taxonomy of Fungi and Animalia. It also introduces the student to the evolutionary history of animals and the structure and physiology of selected animal systems. Laboratory exercises focus on animal anatomy, evolution and physiology.
Prerequisite(s): BL1170 or MUN Biology 1101.

BL1300 Anatomy & Physiology
This course is an introduction to the science of normal functions and phenomena of living things from the cellular to the whole body levels of organization. Emphasis will be placed on the principles of the functioning of the organisms and body systems in order to facilitate the understanding and relationship of biomedical instrumentation.
Prerequisite(s): CH1121

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.

BL1400 Fish and Wildlife Biology I
This course requires the use of resource references, laboratory equipment and a suitable environment. It involves the study of the natural history of birds, fish and mammals, and a theoretical and practical understanding of the anatomy of birds, fish and mammals.

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It includes information on population biology, reproductive biology, feeding biology, ecology, behaviour of fish, birds and mammals; anatomical charts, species charts, storage of specimens and dissection procedures.
Prerequisite(s): BL1120

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 terminology, and a study of the skeletal system.

BL1501 Biology
This is a course in human anatomy and physiology with emphasis being placed on the following systems: cardiovascular, lymphatic, respiratory, endocrine, nervous and sensory organs.
Prerequisite(s): BL1500

BL1700 Ornithology
This is an introductory course in ornithology. The course will focus on species which inhabit insular Newfoundland. Students will learn to recognize by sight and sound songbirds, raptors, seabirds, waterfowl and others. The ecology and behaviour of selected species will be discussed, as well as introductory avian anatomy and physiology.

BL2100 Biology
This is a continuation of the second semester anatomy and physiology course with emphasis on the following systems: digestive, urinary, and reproductive.
Prerequisite(s): BL1501

BL2210 Biology Freshwater 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 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 Marine Ecosystems I
This course will introduce students to the North Atlantic coastal marine environment including the intertidal and subtidal environment; beaches and sand dunes; estuaries; islands and ledges; and deeper offshore waters. Field trips to representative environments will be undertaken. Emphasis will be placed on the identification of organisms and the ecology of the marine environment.
Prerequisite(s): BL1120

BL2231 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): BL1120, BL2230

BL2320 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. 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.

BL2401 Clinical Microbiology
This course consists of a systematic study of the pathogenicity, epidemiology, morphology, and laboratory identification of the various microbes associated with infectious disease. Major emphasis will be on the bacteria with a brief study of clinically important yeast-like fungi.
Prerequisite(s): BL2400

BL2410 Microbiology
An introductory course covering the basic aspects of microbiology with emphasis on the role of microorganisms in disease and methods of control utilized in respiratory care.
Prerequisite(s): Successful completion of 3rd semester

BL3410 Clinical Microbiology
Introduction to the isolation, identification and reporting of micro organisms from clinical specimens originating from the head and neck, the genito-urinary system and other miscellaneous sources. This course 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): BL2401

BL3411 Clinical Microbiology
Laboratory isolation, identification and reporting of micro organisms from clinical specimens originating from the head and neck, the gastro-intestinal tract, and other miscellaneous sources. This course 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 6th semester

BL4410 Clinical Microbiology
This course allows the student to develop technical competence while reviewing theoretical material from previous semesters. The three week hospital rotation will emphasize clinical procedures and acquaint the student with the hospital operation and administration.
Prerequisite(s): Pass 7th semester

BU2110 Building Systems and Codes
This course deals with the type of mechanical and electrical systems in buildings and how they are represented on the finished drawings. The purpose of this course is to introduce students t the mechanical and electrical building systems and to all related codes. It is also meant to support material to be covered in other courses such as estimating and construction planning.

This course is designed to enable students to interpret and prepare AutoCad drawings of mechanical and electrical systems for a small commercial building. Students with this background will be able to interpret mechanical and electrical drawings for the purpose of planning, inspecting and supervising construction of small commercial buildings.
Prerequisite(s): DR1211, DR1210

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

BU2201 Arch Building Services II
Building Services II is a course designed to introduce students to terminology and design methods used in the plumbing and fire protection aspects of building services. The course begins with an introduction to hydraulics, piping and the associated terminology, and advances to areas of water supply and distribution, storm drainage, fire protection, and plumbing. The course includes a detailed study of code requirements and the preparation of computerized working drawings.
Prerequisite(s): PH1101, DR3100
Co-requisite(s): DR3101

BU2300 Arch Building Codes I
This is the first of two architectural building codes courses. The course gives a brief examination of the purpose and contents of building codes in general. It also gives an overview of how the National Building Code of Canada is formatted and how it is to be used.

The course concentrates on the code requirements given in the National Building Code of Canada for houses and small buildings. Emphasis is placed on selecting and sizing building components.
Co-requisite(s): DR3100

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

BU2400 Architectural Building Science I
This is the first of two building science courses. The course studies how heat and air/water flow through a building envelope particularly from the inside to the outside of the enclosure. It also investigates steps to reduce/prevent the negative results which may result fro this movement. Emphasis is placed on the selection and arrangement of building components.
Prerequisite(s): PH1101

BU2401 Architectural Building Science II
This is the second of two building science courses. The course deals with heat, air and water movement through the building envelope particularly from outside to inside the enclosure. It examines the way different wall and roof assemblies perform. Students are required to solve technical problems based on building science theory. Emphasis is placed on the "barrier" concept of enclosure design. Special emphasis is placed on the barriers in roofs.
Prerequisite(s): BU2400

BU3200 Arch Building Services III
This course is designed to introduce the student to building heating systems. The course begins with an introduction to historical and contemporary heating sources emphasizing current energy conservation. Climate, comfort, and design strategies are discussed, with a detailed study of building heat flow and total building heat loss. Heating systems studies include: electric, hydronic, warm air, and steam with design and detailed applications.
Prerequisite(s): BU2201
Co-requisite(s): DR4100

BU3201 Arch Building Services IV
This course, the fourth in a series of services courses introduces students to air movement and conditioning through studies of building cooling requirements. Emphasis is placed on duct design, heat gain, psychometrics and equipment selection. Technical design projects are integrated into the course to emphasize visualization and coordination in the preparation of HVAC working drawings.
Prerequisite(s): PR2300, BU3200, DR4100
Co-requisite(s): PR2210, DR4101

BU3300 Building Specifications
This course deals with the interpretation and writing of specifications for building projects. A study is made of specification writing theory and procedures. Students are expected to analyze specifications for form intent. Projects include identifying technical and legal requirements and translating them into written form. Subject material includes contracts, master format, specification types, and specification writing.
Prerequisite(s): PR2300
Co-requisite(s): DR4100, CF3600

CA2100 Structural Design
This course will prepare the student to analyze and design basic concrete structures using the various design aids such as handbooks, software. The course generally deals with design and analysis of individual structural members such as beams, walls, slabs, and columns.
Prerequisite(s): CF2501

CA2101 Structural Design
A study of the application of principles of mechanics to the solution of problems commonly met within the field of engineering practice. Procedures in problem solving, codes, specifications and standards, loads and structural systems, properties of materials, tension members, axially loaded compression members, effective length, design of beams and connections, use of steel handbook, and roof trusses are major topics to be covered.
Prerequisite(s): CA2100

CA2300 Urban Services
This course will provide the student with an understanding of municipal water, storm, and sanitary systems. Students will acquire skills to design, construct, operate, and maintain necessary municipal services. Treatment systems for water and sewerage will be discussed.
Prerequisite(s): WA1200

CA2500 Highway Design
This course covers the planning and design of a transportation system including traffic studies, route selection, and horizontal and vertical alignment. Students will design a road, prepare a plan including profiles and cross-sections, as well as calculate earth-work quantities.
Prerequisite(s):CF2421, FT1320, WA1200

CA2650 Marine Construction
This course is designed to give the student knowledge in the methods and operations related to topics in marine construction. Emphasis will be placed on the design requirements and methods of construction related to onshore marine structures. This will also involve a study of the typical marine structures used in Newfoundland.

The importance of the design and construction of inshore marine structures is very relevant in connection to the Newfoundland situation. The student will be introduced to the design requirements for various marine structures such as: wharfs, piers, and breakwaters. The methods, equipment and materials used in the construction of inshore structures will be presented. Environmental requirements and their effects on design and construction will also be investigated.
Prerequisite(s): CB2420, WA1100

CA2800 Soil Mechanics I
This course will introduce the student to the fundamentals of soil mechanics. The origin and formation of soils will be addressed along with their classifications and uses in the construction environment. Emphasis will also be placed on basic design considerations and properties of soils and the relationship to foundations, retaining wall and slope stability. Basic theory will be supplemented by field and laboratory testing done to ASTM Standards.

This is an introductory course in soil mechanics. The student will acquire knowledge about the various types of soils used in design and construction civil projects. Identification, classification, and formation of soils will be addressed. Students will become familiar with the standard tests and procedures used to evaluate soils and their properties. Laboratory testing will be supplemented with field work where ever practically possible.
Prerequisite(s): CF2701, CF2501, WA1200

CA2801 Soil Mechanics II
The study of soils should be an important component in the education of Civil Engineering Technologists. Most structures such as bridges, roads and buildings rest either directly or indirectly upon soils. Therefore, the proper analysis of the soil and their design requirements are necessary to ensure a safe structure free of undue settling and/or collapse. This course will give a student an introduction in the field of Geotechnical Design based on knowledge gained in Soil Mechanics II.

This course will continue from Soil Mechanics I. The course will use the theoretical information given in Soil Mechanics I and apply it to the area of Geotechnical Design. Emphasis will be placed on basic design considerations and properties of soils and the relationship to foundations, retaining wall, and slope stability. Basic theory will be supplemented by field and laboratory testing done to ASTM Standards.
Prerequisite(s): CA2800

CA2900 Municipal Engineering
Introduction to zoning bylaws and zoning in general. Criteria 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): SU1311

CB2420 Construction Methods
Construction methods will help students to estimate construction costs and productivity rates of various types of equipment and apply previous knowledge from economics to Heavy Equipment. The course will deal with methods and operations utilized in heavy construction, with emphasis placed on specifying the best equipment or process for the situation.
Prerequisite(s): EC1700, EC1720, MA2100

CD2100 Community Development I
This course is an introduction to the major concepts, principles, and issues in community development. It introduces students to the history of community development and to the major influences on current community development practice. The roles of community development workers and the various occupations in the field of community development are examined. The course also introduces some of the major skills necessary for successful community development practice.

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CD2300 Community Economic Development I
This is an introductory course to the field of community economic development. It 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 process of strategic planning and how it may be applied to the community economic development process. Students will gain an understanding of community economic development concepts and processes.

CD2310 Community Economic Development II
This course is an introduction to financing and managing in community economic development enterprises. It introduces the concept of social entrepreneurship, and approaches which Community Economic Development organizations may use in securing funds. It examines the challenges of managing and coordinating human and natural resources in not-for-profit organizations, in such a way as to build the community economy. The course also introduces the concept of strategic alliances and how they may be used to facilitate community economic development.
Prerequisite(s): AC1100

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

CE2700 Antennas, Transmission Lines and Propagation
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; AE1200

CE2800 Industrial Communication Systems
This specialized course introduces the student to industrial communication systems, fieldbus, and networks for monitoring data acquisition and control systems used in an industrial environment. The lab component is designed to enhance the theoretical lecture component by implementing communication methods, networks, and an introduction to Microsoft Windows NT installation and administration.
Prerequisite(s): CT2300

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
Co-requisite(s): CT2300

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

CE3200 Analog and Digital Telephony
This course provides a detailed and practical discussion of the system theory leading to the design and operation of the telephone communications network. Emphasis is placed on the digital facilities in current use by local telecommunications utilities. Lectures are supplemented by projects, field trips and laboratory experiments.
Prerequisite(s): AE2300, DP3400

CE3300 Fibre Optic Communications
This course covers the basis of Fiber Optic Communications. Emphasis will be on the practical application of fiber to the design and construction of communication systems and networks. The approach will introduce the theories involved, and give students a hands-on, practical understanding of cable handling, terminating, splicing, testing with optical source and power meters, and link analysis using a fiber optic communications trainer.
Prerequisite(s): CE2250, CE3100, DP3400

CE3400 Local Area Networks
The purpose of this course is to introduce the students of Electronics Engineering (Computers and Information Technology) to the skills required to manage and maintain Local Area Network.
Prerequisite(s): DP3430; CP2600

CE3420 Internet & Intranets
This course is designed to give the students an understanding of the Web technologies. The Web technologies will be used as the basis for building a Website.
Prerequisite(s): CE3400, CT1125

CE3430 Network Cabling Project
This course will provide the student with the necessary skills to design and implement high performance cabling systems. The performance level of the system determines the type of cabling and hardware to be used, the rules to be followed, ie. TIA/EIA-568A standard, and the type of testing and documentation required to certify performance and trouble-shoot the installation. Focuses on the physical layer of the OSI Network Model and includes the electrical, and mechanical aspects of interfacing to the transmission medium and impact on performance they may have. This includes analysis of copper cabling, fibre optics, connectors and interconnection hardware, electrical code requirements for installation, performance certification and documentation.
Prerequisite(s): AE2300; CE2250

CE3500 Microwave Circuit Design
Matching networks design; microwave amplifier design; low noise amplifier design; broadband amplifier design.
Prerequisite(s): AE2300, CE2250

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

CE3601 Digital Communications II
This course focuses on the mathematical theory and fundamentals of operation of digital network communications.
Prerequisite(s): CE3600

CF1100 Materials & Processes I
The purpose of this course is to provide students with a knowledge of the behaviour and characteristics of common engineering materials and an understanding of basic industrial processes. This is to enable students to select suitable materials and fabrication methods for the design and manufacture of parts to ensure successful service.
Prerequisite(s): CH1121

CF1101 Materials & Processes II
The purpose of this course is to familiarize the student with production and fabrication processes and practices used in the industrial environment. The course provides an understanding of welding processes, non-destructive testing, corrosion, and casting-processes. An introduction to plastics and other engineering materials is provided.
Prerequisite(s): CCF1100

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 environment. A continuation of the 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, including metal removal, joining processes, casting processes, forming and shaping processes.
Prerequisite(s):CF1100

CF2421 Construction Materials II
This course is designed to provide students with an overview of the use of asphalt as a construction material as well as enable student s to perform some laboratory testing on asphalt.

CF2500 Strength of Materials I
This course has been included in the Civil Technology program curriculum as an engineering science. It is intended to be used as a basis for the study of design oriented course material to be presented in the second and third years of the program.
Prerequisite(s): MA1101, PH1101
Co-requisite(s): MA2100

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

CF2510 Strength of Materials
This course is an introduction to the analysis of stresses in load bearing structural members. Concepts of stress, strain and elasticity are applied to elementary systems of normal, shear and bending stress in order to give students an understanding of one of the fundamental building blocks upon which all engineering designs are based.
Prerequisite(s): 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): CF2540

CF2520 Strength of Materials
This course is included in the Petroleum Technology program curriculum as an Engineering science. It forms part of the core of courses introducing students to the fundamentals of applied problem solving. Topics include: forces and force system analysis, FBD's centroids and moments of inertia, second moment of area, stress and strain, bending and direct stress, shear stress, torsional shearing stress, beam design, mechanical properties of materials.
Prerequisite(s): MA1101, PH1101

CF2540 Mechanics of Solids
This course is included in the Industrial, Mechanical, and Mechanical (Manufacturing) Engineering Technology program curriculum as an Engineering science. It forms part of the core of courses introducing 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 the subjects of general force systems, reactions, free body diagrams; trusses and frames; centroids and second moments of area; shear and moments in beams; stresses in beams and beam design.
Prerequisite(s): PH1100, MA1101

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

CF2601 Building Materials II
This course examines the properties, limitations, and applications of a number of different building materials. It is designed to help students assess and select suitable materials for a variety of situations found in buildings.
Prerequisite(s): CF2600

CF2700 Materials & Testing I
This course has been designed to provide the student enrolled in the Civil Technology program with a working knowledge of common building materials so that he/she will be better able to function as a technologist in the building and heavy construction field. This course will provide the student with a basic knowledge of the characteristics, uses and application of common construction materials and the general construction specifications associated with each material. Materials such as concrete, concrete masonry and aggregate, their properties, components, uses, production and construction methods, will be studied. Basic theory will be supplemented by laboratory testing of aggregate and concrete done to CSA standard. Emphasis will be placed on decision-making for the proper selection and use of the various components discussed in each material. Course work will be supplemented by field trips and in-shop demonstrations.
Prerequisite(s): CM1401, DR1211, DR1210

CF2701 Materials & Testing II
This course has been designed to provide the student enrolled in the Civil Technology program with a working knowledge of common building materials so that he/she will be better able to function as a technologist in the building and heavy construction field. This course will be a continuation of CF2700, Materials and Testing I. It will provide the student with a hands on approach to the testing, selection, use and application of common construction materials such as concrete, concrete masonry, asphalt and aggregate will be tested under laboratory conditions. Where ever possible in lab work will be supplemented with field trips, videos and guest lectures.
Prerequisite(s): CF2700

CF3420 Structural Design
This course is a continuation of Strength of Materials CF2500 and expands on previously studies concepts with major emphasis on structures and requirements based on building shapes. Emphasis is also placed on calculations leading to the selection of beams and columns based on shear forces, bending moments, and deflections produced by static loads. In addition, students are expected to have a thorough knowledge of the preparation of detailed steel shop drawings including connections and dimensioning, and to produce structural drawings as partial fulfillment of the requirements for the major technical project PR2210.
Prerequisite(s): CF2500
Co-requisite(s): PR2210

CF3600 Building Materials III
This course examines the properties, limitations, and application of a number of different building materials. It is designed to help students assess and select suitable materials for a variety of situations found
Prerequisite(s): CF2601

CG1200 Health Care & Safety I
This course serves as an introduction to the hospital environment, its organization and management. Students will be familiarized with the health care system of Canada. The application of safety in the hospital environment, with a special emphasis on the concepts of electrical safety.
Prerequisite(s): CM2200
Co-requisite(s): CG3400

CG1201 Health Care & Safety II
This course is a continuation of CG1200 and serves to familiarize the student with equipment control systems and procedures utilized by Biomedical Engineering Departments. The concepts of quality assurance as well as standards involved in the safe use of electricity in health care institutions will be addressed. Students will also become familiar with fire, biological and environmental safety issues as they relate to the hospital environment.
Prerequisite(s): CG1200; CM2200
Co-Requisite: CI3401

CG1500 Work Methods and Measurement
This course is designed to introduce the student to the basics of time and motion study. It will provide a student with a basic understanding of time study techniques. It comprises various topics in pre-determined motion time and work measurement systems. The intent is to develop in the student a full understanding of the elements of these systems and the capability to create and implement them.
Prerequisite(s): EG1100 CT1150

CG2100 Urban Planning
This course will provide the student with an opportunity to utilize learned theory and apply to an actual subdivision selection, planning, and service design. Students will design a residential subdivision for given lot sizes, dwelling standards, zoning, and other internal and external site factors.
Prerequisite(s): CA2300, CA2500

CG2340 Construction Estimating & Planning I
This course is an introduction to the disciplines of cost estimating and planning for construction purposes. It brings together the accumulated knowledge the student has assimilated over two years to enable him/her to understand the principles of cost estimating and to develop basic skills in taking off and pricing construction materials.
Prerequisite(s): CB2420

CG2341 Construction Estimating & Planning II
This course is a continuation of Construction Cost Estimating and Planning I and is intended to enhance the skills of the student. Students will be required to use commercially available computer software to prepare cost estimates. This course will also provide the student with the opportunity to apply to the planning process much of the technical material studied in earlier courses of the Civil Engineering Technology program.
Prerequisite(s): CG2340

CG3100 Construction Management
This course is intended to provide the student with knowledge of the construction industry to better enable him/her, on attaining sufficient practical experience to function as an effective construction manager.
Prerequisite(s): CG2340
Co-requisite(s): LW1600

CG3200 Business & Project Administration
This course examines the fundamentals of economics, types of businesses, and the administrative process as it related to design construction projects. It is designed to help students understand their role in the economics and administration of the design and construction industry.
Prerequisite(s): LW1610, DR3101

CG3300 Architectural Cost Analysis
This course is an introductory course designed to provide students with a basic understanding of the various types of estimates commonly used in the design and construction industry. This course deals mainly with the elemental cost analysis method of estimating with computer applications where applicable.
Prerequisite(s): DR4100, BU3200, BU3300

CG3400 Engineering Management
This course is intended to familiarize the student with the role of management in industry. Topics covered include project representation and analysis using C.P.M. and P.E.R.T. as well several methods of management decision-making with a mathematical approach. The course provides the basic. methods

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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, CT1150

CG3500 Production Planning
This course analyzes the principles of production management by bringing together previous topics of planning and approaching them as an integrated production plan which interprets various components such as master scheduling, resource planning, manufacturing control and flexible manufacturing.
Prerequisite(s): CG1500, CG3400, SP2510

CH1120 Chemistry
This is an introductory course designed to give students a knowledge and understanding of the fundamental concepts which will form the basis for further studies in science and technology. Topics include: atomic structure, Periodic Table, chemical bonding and nomenclature, stoichiometry and measurement, chemical reactions, gas laws, solution and solubility.

CH1121 Chemistry
This course will develop further the fundamental concepts of chemistry, with emphasis on those relevant to the chemistry of materials and to the processes of polymer chemistry, thermochemistry, chemical reaction rates and equilibrium, electrochemistry, metals and alloys.
Prerequisite(s): CH1120

CH1130 Chemistry
This is an introductory course in chemistry dealing with the fundamental laws of chemistry, the nature of the matter and the physical states of matter, the structure of the atom, the electronic structure and the periodic table, the significant figures and scientific notations, measurements and units, writing and balancing chemical reactions, stoichiometry and stoichiometric calculations, chemical bonding, gases and gas law calculations. Major topics include: Matter and energy; atoms, molecules and ions; mass relations in chemistry (stoichiometry); reactions in aqueous solution; gases and osmotic pressure; electronic structure and the periodic table; covalent bonding (Lewis structures, molecular geometry, polarity of molecules and hybridization).
Prerequisite(s): None, but high school chemistry is recommended. Strong mathematical skills are required, and students with low marks in high school academic mathematics (less than 70%) are strongly recommended to upgrade their mathematics background before undertaking this course.
Transferable to MUN Chemistry 1010.

CH1131 Chemistry
This is continuation of CH1130. This course will further develop the fundamental concepts of chemistry, with emphasis on thermochemistry, physical properties of matter, rate of reaction, gaseous chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry. Major topics include: Thermochemistry, physical properties of matter, rate of reaction, gaseous chemical equilibrium, acid-base equilibria, precipitation equilibria and electrochemistry.
Prerequisite(s): CH1130 or MUN Chem 1010

CH1140 Chemistry
Transferable to MUN Chem 1050.
This course is designed for students who have previously studied Chemistry either in high school or university. It is designed to give students a knowledge and understanding of the fundamental chemical concepts which will form the basis for further studies in the field of science. Major Topics are: matter – its properties and measurement, atoms and atomic theory, chemical compounds, chemical reactions, introduction of reactions in aqueous solution, gases and hydrogen, electrons in atom, the Periodic Table and some atomic properties, chemical bonding I: basic concepts, chemical bonding II: additional aspects, liquids, solids, and intermolecular forces, solutions and physical properties.
Prerequisite(s): At least 80% in high school Chemistry and a pass in high school advanced mathematics.
Co-requisite(s): MA1130 or MA2100. A physics course would be helpful, especially for students who did not take Physics in high school.

CH1141 Chemistry
Transferable to MUN Chem 1051.
This course is designed for students who may have career interests in chemistry or other fields of science. The course will develop further the fundamental concepts of chemistry, with emphasis on practical applications. It is designed to identify and apply principles as well as provide visualizing of their physical significance. Major topics are: chemical kinetics, principles of chemical equilibrium, acids and bases, addition aspects of acid-based equilibria, solubility and complex ion equilibria, spontaneous change; entroph and free energy, electrochemistry, descriptive chemistry.
Prerequisite(s): CH1140, MA1130 or MA2100, or MUN Chem 1050, Math 1000 or 1081.

CH1150 Chemistry
Transferable to MUN Chemistry 1031.
This course is designed to prepare students who have completed Chemistry 1131 (or MUN chemistry 1011) for second year Chemistry courses. It deals with the topics in greater depth with emphasis on problem solving, as in Chemistry 1141.
Prerequisite(s): CH1131 or MUN Chem 1010.

CH1200 Chemistry
This is an introductory course in chemistry dealing with the fundamental laws of chemistry, the nature of matter and structure of the atom, the periodic table, chemical bonding, stoichiochemistry, 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, 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

CH2320 Organic Chemistry /Biochemistry
This is an introductory course in organic chemistry and biochemistry for Medical Laboratory Sciences students. Major topics studied are the carbon atom, chemical nomenclature and structure of the alkane, alkenes, aldehydes, ketones, carboxylic acids, alcohols, ethers, aromatic hydrocarbons, amino acids, structure, properties and metabolism of carbohydrates, proteins and lipids, diabetes, non-protein nitrogenous compounds, acid-base balance, body water/electrolyte balance and enzymes.
Prerequisite(s): Completion of all 3rd semester courses

CH2330 Petroleum Chemistry I
This is an advanced course in organic chemistry designed to give petroleum students a knowledge and understanding of the fundamental chemical concepts of organic products and derivatives which are prominent in the petroleum industry.
Prerequisite(s): CH1121

CH2331 Petroleum Chemistry II
This is a course designed to give petroleum students a knowledge and understanding of physical, inorganic and analytical chemistry as applied to the petroleum industry. Emphasis will be given to the development of analytical and laboratory skills.
Prerequisite(s): CH2330

CH2400 Biochemistry
This course is designed to provide students with a foundation in the areas of organic and biochemistry. It also shows some of the useful contributions that chemistry has made in the area of health care. This is an introductory course inorganic chemistry and biochemistry for biomedical students.
Prerequisite(s): CH1121

CH2511 Clinical Chemistry
This course consists of a study of the theoretical and practical aspects of the analysis of body fluids. Major topics studied include: carbohydrates, proteins, lipids, acid/base balance, enzymology, non-protein nitrogenous substances, electrolytes, liver function, kidney function, toxicology, immunochemical assays, and thyroid function testing.
Prerequisite(s): CH2520, CH2320

CH2520 Basic Laboratory Principles
This course will introduce laboratory safety, basic laboratory techniques and skills, laboratory instrumentation, and quality control procedures and interpretation. These principles will be reinforced in laboratory periods using discovery, demonstration and participation techniques.
Prerequisite(s): Completion of all third semester courses.

CH2700 Environmental Chemistry I (Analytical)
This is an introductory course in chemical analysis. It consists of classical methods of quantitative chemical analysis such as gravimetry and titrimetry, as well as simple instrumental techniques used for field measurement (pH, colorimetry, conductivity, dissolved oxygen). Students are also exposed to

Environmental Sampling and statistical treatment of data.
Prerequisite(s): CH1101

CH2720 Chemistry III (Analytical)
This is an introductory course in chemical analysis. It will introduce the students to the classical methods of quantitative chemical analysis such as gravimetry and titrimetry, as well as simple instrumental techniques used for field measurement (pH, colorimetry, conductivity, dissolved oxygen).
Prerequisite(s): CH1101

CH3510 Clinical Chemistry
Upon completion of this course, the student will be able to perform automated chemical analysis and urinalysis.
Prerequisite(s): CH2511

CH3511 Clinical Chemistry
Upon successful completion of this course, the student will have sufficient knowledge and skills to enter the clinical phase of the program at an affiliated hospital.
Prerequisite(s): Pass 6th semester

CH3700 Environmental Chemistry III (Organic)
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): Pass 7th semester

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): ET2100
Co-requisite(s)s: DP1100, AE2300 or AE2301

CI1210 Instrumentation Controls & Automation
This course provides a comprehensive treatment of sensors and methods of measuring automated process variables. The student will be introduced to the underlying concepts and operation of industrial measurement devices and control systems.
Prerequisite(s): 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

CI1300 Fabrication Technique
This is a practical electrical/electronics course for students entering the primary electrical/electronics technical session. This course enables the student to obtain practical knowledge in soldering, wiring, fabrication and proper use of electronic test equipment as related to accepted procedures found in industry.
Prerequisite(s): MA2101; AE2301 or AE2311

CI1400 Industrial Controls I
Manufacturing Operations Technology graduates are expected to understand how best to use automation and process control technologies to improve product quality and optimize processes. In order to do this, students must first have a basic understanding of the analog and digital electronic building blocks used in automation. Consequently, topics include; the basic operation and industrial applications for semiconductor devices, including the diode, BJT switch, power electronic devices (FET, IGBT, SCR), and operational amplifier; an explanation of digital fundamentals, including the binary number system, combinational logic, and sequential logic.
Prerequisite(s): ET1101

CI1401 Industrial Controls II
As industrial process operators, graduates must understand how industrial controllers work (i.e. PLC, DCS, drives, etc.). While they are not expected to maintain the industrial controllers, it is important that the student receive enough hands-on programming experience such that they gain confidence in the systems and hardware. Learning the details about a specific control system, in this case Programmable Logic Controllers (PLC), is an effective way of gaining this confidence. Consequently, topics include PLC hardware, systems, applications, and programming. Also introduced are variable speed drive technologies, with an emphasis on variable frequency (AC) drives and applications. The student applies the concepts learned to specific systems, processes and equipment found in manufacturing operations.
Prerequisite(s): CI1400, PE2430

CI1500 Introduction to Process Analysis
This course will introduce the student to process analysis. Methods of calibration, and applications of statistical methods (mean, standard deviation, control charts, tests and linear regression analysis) will be applied to measurements. Electrochemical principles will be applied to the study of corrosion, conductivity, ORP, pH and other electrochemical analyzers. The course also introduces students to the use of statistics in monitoring quality control in industrial processes. The course reviews electrochemical principles as they apply to corrosion and corrosion control in industry. The student will learn how control of industrial processes by electrochemical methods is accomplished.
Prerequisite(s): CH1121

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

CI2520 Process Control Operations
Manufacturing operations personnel need a good understanding of process control methods in order to improve product quality, optimize the process, and reduce process operation costs. This course provides the students with the knowledge and skills relating to both basic and advanced process control techniques used in all industrial processes. Using this knowledge of process control technology, the student is introduced to process and instrumentation diagrams (P & ID) that explain the control systems for both processes common to all industries and industry specific processes. The common processes emphasized are "steam plant control" and "effluent/wastewater treatment". Topics include P.I.D. control, controller tuning, and advanced control techniques (cascade control, ration control, feed-forward control).

CI2610 Process Optimization
This course introduces the student to systems and techniques used for industrial process optimization and quality management. The tools and systems include process analyzers, adaptive controllers, distributed control systems, (DCS), real-time data historian, virtual sensors, asset management software, enterprise resource planning (ERP), and industrial networks. During this course, the student continues to develop knowledge and practical expertise in the application of process control technology to the specific systems, processes and equipment found in a variety of manufacturing operations.
Prerequisite(s): CI2520

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

CI2801 Process Measure II
This is a second course in industrial process measurement and its purpose is to familiarize students with various devices and systems used in the industrial environment to measure fluid flows, humidity, as well as an introduction to control valves. Students will study the various types of process transmitters used in the measurement and transmission of information on fluid flow rates.
Prerequisite(s): CI2800, CI2810

CI2810 Process Control I
The purpose of this course is to familiarize the students with both pneumatic and electronic controllers as well as basic feedback control and frequency response analysis.
Prerequisite(s): AE2300

CI2811 Process Control II
The purpose of this course is to familiarize the student with both pneumatic and electronic controllers as well as basic feedback control.
Prerequisite(s): AE2300

CI3100 Automatic Control Systems
The course is intended to show the application of classical control theory to actual industrial systems, including DC drives. Control system components will be studied in theory and in the lab. Instrumentation-related software (Control Station, PC-ControLab,

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

CI3300 System Modelling
This course is intended to show the procedures used in developing mathematical models of physical systems. A treatment of these models is then pursued to investigate the characteristics of the systems. The models are also subjected to Laplace and frequency transforms.
Prerequisite(s): MA2101, PH1101

CI3400 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, AE2210, AE2400

CI3401 Biomedical Instrumentation II
This course is intended to broaden the student's knowledge of medical instrumentation by introducing more sophisticated systems such as multi-parameter patient monitoring systems, central station monitoring, hemodialysis systems, respiratory and pulmonary function instrumentation as well as operating room systems such as electrosurgery units and laser surgical tools.
Prerequisite(s): CI3400, CG1200

CI3500 Medical Imaging
This course contains lectures, demonstrations, and hands-on training through which students will learn the proper operation, calibration and preventative maintenance and safety issues involved in the utilization of a basic x-ray imaging system as well as additional imaging modes such as ultrasonic imaging and magnetic resonance imaging.
Prerequisite(s): CI3400
Co-requisite(s): CI3401

CI3600 Industrial Process Control
This is an introduction to Process Control Systems, designed to provide students with the basics of PID Control as well as an overview of more advanced systems.
Prerequisite(s): CI1210

CI3820 Process Analysers
This course resumes study of process analyzers including electromagnetic analyzers, chromatographic analyzers, mass spectrometers and moisture and toxic gas analyzers. It provides students with the opportunity to calibrate and use for analysis purposes UV/VIS/IR, mass spectrometers, GC and HPLC as well as toxic gas analyzers. The students will develop an in depth understanding of the various components of the process sampling system and how they are inter-related.
Prerequisite(s): CI2801, CI2811, CI1500

CI3830 Computer Control Systems
The purpose of this course is to familiarize the students with the various types of computerized control systems used by the processing industries.
Prerequisite(s): CE2800

CJ2100 Canadian Criminal Justice System
This course introduces the student to the various components and functions of the Canadian criminal justice system. The entire criminal process, from the origin of the law to conviction, sentencing and aftercare will be examined. The implication of the enactment of the Canadian Charter of Rights and Freedoms will be analysed.

CJ2101 Canadian Criminology
This course presents an overview of crime and criminal behaviour in Canadian society. Areas to be covered include a definition of crime, criminal law, crime topologies and theories. Response to crime also will be examined.
Prerequisite(s): SC1100, CJ2100

CJ2200 Youth Justice In Canada
This course introduces the student to the specific components and functions of the
youth justice system in Canada. Following a review of the intent of the Young Offender's Act, 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. Specific emphasis will be placed on the development of effective case management skills.
Prerequisite(s): CJ2100, PS2200, CS2200.
Co-requisite(s)s: CJ2101, CS2400

CJ2400 Special Populations
This course examines inmate groups within the Correction System. The purpose and practice of segregation procedures will be discussed. Issues related to accommodating sex offenders and persons suffering from psychiatric and behavioural disorders are explored.

CJ2410 Case Management
This course examines the principles of effective case management in a Correctional setting. The basic elements of inmate supervision and case management will be defined and practiced. The process of admission, orientation and assessment will be studied. Time also will be devoted to examining the operation of the National Parole Board.

CK1110 Kitchen Fundamentals
This course in shop fundamentals requires the use of tools and equipment, and materials and supplies. It involves demonstrating good safety and hygiene practices while operating kitchen tools and equipment. It includes information on types of equipment, operating techniques and safety and hygiene re

CK1200 Basic Preparation of Fruit and Vegetables
This course in fruit and vegetable preparation requires the use of kitchen utensils and equipment and supplies. It involves selection, storage and handling, cleaning, preparing and cooking fruit and vegetables. It includes information on nutritional value, proportioning, temperature control, types of fruit and vegetables and preparation techniques.

CK1201 Cooking and Presentation of Fruit and Vegetables
This course in fruit and vegetables requires the use of kitchen tools and equipment and supplies. It involves selection, storage and handling, cleaning and preparing, cooking and presenting fruit and vegetables; and cleaning up. It includes information on types of fruit and vegetables, nutritional value, cooking methods, uses and presentation methods.

CK1300 Meats and Poultry Basics
This course in meats and poultry basics requires the use of kitchen utensils and equipment, and supplies. It involves identification and selection of cuts, cutting, trimming, storage, preparation, cooking and presentation of meat and poultry and clean up. It includes information on dry and moist heat cooking techniques, frying techniques, and types of cuts of meat and poultry.

CK1301 Meats and Poultry Preparation Methods
This course in meats and poultry requires the use of kitchen utensils and equipment and supplies. It involves identification and selection of cuts, cutting and trimming, storing, preparing, cooking and presenting meats and poultry; and cleaning up. It includes information on preparation techniques.

CK1410 Basic Preparation of Stocks, Soups & Sauces
This course in stocks, soups and sauces requires the use of kitchen utensils and equipment, and supplies. It involves identification and selection, storage and handling, preparation, cooking and presentation of specific stock, soups and sauces. It includes information on preparation techniques for various types of soups and sauces.

CK1500 Eggs & Breakfast Items
This course in egg preparation requires the use of utensils and equipment. It involves selecting, storing, handling, pre-preparing, preparing, cooking and serving eggs; and cleaning up. It includes information on grading, market forms, preparation techniques and sanitation code requirements for preparation and holding.

CK1510 Appetizers and Hors-D'Oeuvres
This course in appetizers and sandwiches requires the use of kitchen tools and equipment and supplies. It involves identification and selection, storage and handling, preparation, cooking and presentation of appetizers; and cleaning up. It includes information on types and uses of dairy products, appetizers and hors-d'oeuvres.

CK1520 Menu Planning
This course in menus requires the use of a dining room and equipment. It involves identifying conditions, planning and costing menus. It includes information on types of menus, skill and sizes of cooking crew and service crew, types of customers, festive occasions and seasons, competition, service hours, types of establishments and sales volume.

CK1530 Sandwiches
This course in appetizers and sandwiches requires the use of tools and equipment and materials and supplies. It involves identification, selection, storage and handling of ingredients; preparation, filling, cooking and presenting sandwiches; and cleaning up. It includes information on types of fillings, breads and garnishes; and preparation techniques.

CK1540 Basic Desserts
This course in desserts requires the use of baking utensils and equipment, and baking supplies. It involves identification and selection of ingredients; handling and storage, portioning, folding, whipping, blending and plating basic desserts; and cleaning up. It includes information on cooking methods, temperatures, synthetic creams and types of basic desserts.

CK1550 Preparation of Pasta and Farinaceous Foods
This course in pasta and farinaceous foods requires the use of kitchen tools and equipment and supplies. It involves identification and selection, storage and handling, preparation, cooking and presentation of pasta and farinaceous foods; and cleaning up. It includes information on types of pasta and farinaceous foods and preparation techniques.

CK1560 Menu Costing
This course in menus requires the use of catering conditions. It involves identifying conditions and planning and costing menus. It includes information on utilization techniques for leftovers and convenience foods, types of menus.

CK1570 Presentation of Pasta and Farinaceous Foods
This course in pasta and farinaceous foods requires the use of kitchen tools, equipment and supplies. It involves identification and selection of cuts, cutting and trimming and presenting pasta and farinaceous food dishes. It includes information on specialty cuisine and presentation techniques for pasta and farinaceous foods.

CK1600 Basic Preparation of Fish and Shellfish
This course in fish and shellfish requires the use of kitchen tools and equipment, and supplies. It involves identification and selection, storage and handling, cleaning, preparing, cooking and presenting fish and shellfish; and cleaning up. It includes information on types, cuts and uses of fish and shellfish and traditional cuisine.

CK1601 Fish and Shellfish Presentation Methods
This course in fish and shellfish requires the use of kitchen tools and equipment and supplies. It involves identification and selection of cuts, cutting and trimming, storing, preparing, cooking and presenting fish and shellfish dishes; and cleaning up. It includes information on specialty cuisine and presentation techniques for fish and shellfish.

CK1700 Basic Salads
This course in salads requires the use of utensils and equipment. It involves identification and selection of ingredients, preparation and presentation of salads, and clean up. It includes information on types of ingredients for various salads and dressings, preparation techniques and sanitation code requirements for holding salads.

CK1701 Salad Presentation Methods
This course in salads requires the use of kitchen tools and equipment and supplies. It involves identification and selection, preparation and presentation of salads; and clean up. It includes information on types of salads, preparation and presentation techniques.

CK1800 Merchandising
This course in merchandising requires the use of baking utensils and equipment, and baking supplies. It involves selecting ingredients, storage and handling, piping, coordinating colours, mounting, portioning and patting baked products; and cleaning up. It includes information on types of ingredients and basic merchandising techniques.

CK1810 Basic Cakes
This course requires the use of baking utensils and equipment, and baking supplies. It involves identification and selection of ingredients, storage and handling, portioning, scaling, panning, baking, racking, decorating and plating; and cleaning up. It includes information on types of cakes and basic preparation techniques.

CK1820 Basic Pastries
This course in pastries requires the use of baking utensils and equipment, and supplies. It involves identification and selection, storage and handling, portioning, scaling, panning, baking, preparing filling, cooling, decorating and plating basic pastries, and cleaning up. It includes information on types of basic pastries and fillings and preparation techniques.

CK1830 Basic Cookies, Squares and Quick Breads
This course requires the use of baking utensils and baking supplies. It involves identification and selection of ingredients; storage and handling, decorating and scaling, making up, baking (if required), racking, portioning, decorating and plating basic cookies, squares and quick breads; and cleaning up. It includes information on types of basic cookies, squares and quick breads, and preparation techniques.

CK1840 Basic Yeast Raised Products
This course in yeast breads requires the use of baking utensils and baking supplies. It involves identification and selection of ingredients; storage and handling, proofing, panning, baking, docking, glazing, racking and serving basic yeast-raised products. It includes information on temperature guides, types of basic yeast-raised breads and preparation techniques.

CK1870 Speciality Cakes
This course requires the use of baking utensils and equipment, and baking supplies. It involves preparing specialty cakes. It includes information on types of sponges and cakes, and preparation techniques.

CK1880 Speciality Pastries and Fillings
This course in pastries requires the use of baking utensils and equipment, and baking supplies. It involves identification and selection, storage and handling, portioning, scaling, panning, baking, preparing filling, cooling, decorating and plating basic pastries, and cleaning up. It includes information on types of specialty pastries and fillings and preparation techniques.

CK1890 Speciality Cookies, Squares & Quick Breads
This course requires the use of baking utensils and equipment and baking supplies. It involves the preparation of specialty cookies, squares and quick breads. It includes information on types of specialty cookies, squares and quick breads, and preparation techniques.

CK1900 Speciality Yeast Raised Products
This course in yeast breads requires the use of baking utensils and equipment, and supplies. It involves the preparation of specialty yeast raised products. It includes information on temperature guides, types of specialty yeast-raised breads and preparation techniques.

CK1910 Speciality Cold Desserts
This course in desserts requires the use of baking utensils and equipment, and baking supplies. It involves the preparation of specialty cold desserts. It includes information on types of specialty cold desserts and cooking methods.

CK1920 Speciality Hot Desserts
This course in desserts requires the use of baking utensils and equipment, and baking supplies. It involves the preparation of specialty hot desserts. It includes information on types of specialty hot desserts and cooking methods.

CK2300 Meat and Poultry Presentation Methods
This course in meats and poultry requires the use of kitchen tools and equipment and supplies. It involves identification and selection of cuts, cutting and trimming, storing, preparing, cooking and presenting meat and poultry dishes; and cleaning up. It includes information on specialty cuisine and presentation techniques for meats and poultry.

CK2400 Stock, Soup & Sauce Presentation Methods
This course in stocks, soups and sauces requires the use of kitchen tools and equipment and supplies. It involves identification and selection, storage and handling, preparation, cooking and presentation of stock, soup and sauces. It includes information on secondary sauces, non-derivative sauces and presentation methods.

CM1100 Communications-Writing Fundamentals ●
Writing Fundamentals is an introductory course designed to review writing fundamentals. It includes an introduction to reference tools and a review of grammar, punctuation, spelling, and usage. Students will apply principles of writing in sentence and paragraph construction.

CM1120 English
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: analyzing texts, framing and using questions, constructing essays, organizing paragraphs, quoting and documenting, revising and editing.
Prerequisite(s): Minimum of 60% in Language 3101 and a minimum of 60% in either Thematic Literature 3201 or Literary Heritage 3202.
Transferable to MUN English 1080

CM1135 English
Transferable to MUN English 1101.
This course is an introduction to such prose narrative forms as the novel, the novella, the story sequence and the autobiography. This course continues the emphasis on critical reading and writing begun in CM1120. It also introduces the student to longer prose narrative, particularly the novel form and to the practices of conducting research.
Prerequisite(s): CM1120 or MUN English 1080.

● Available through @College Distributed Learning Service ⊗ Available through correspondence

CM1145 English
Transferable to MUN English 1110.
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 English
Transferable to MUN English 1102.
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 English
Transferable to MUN English 1103.
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.

CM1200 Oral Communications
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 analyse techniques in the preparation and delivery of oral communications and will practice these techniques in prepared and impromptu speeches.

CM1230 Communications for Rehabilitation Assistants ●
This course is designed to teach students the fundamentals of communication in both oral and written forms. Emphasis is on strategies for writing, researching techniques and organizational skills. Topics include: characteristics of report writing, introduction to oral reporting, use of abstracts and correspondence.

CM1240 Business Communications I
Business Communications I is designed to introduce students to the writing requirements of business environments. The course is intended to provide ample in-class opportunities to review writing fundamentals and improve writing skills using common business applications.

CM1241 Business Communications II
Business Communications II is designed to further students' knowledge and competence in preparing business documents for the workplace. The course is intended to provide opportunities to improve writing skills using various business applications.
Prerequisite(s): CM1240 or equivalent

CM1320 Communication Skills
This course is designed to introduce students to written communication in the workplace and provide considerable practice in constructing and editing effective sentences and paragraphs.

CM1400 Communications Skills-Technical Reporting I ●
This course is designed to teach technology students the fundamentals of technical reporting in oral and written forms. Emphasis is on strategies of technical reporting, research techniques and organizational skills.

CM1401 Communication Skills-Technical Reporting 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

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.

CM1500 Essay Writing
This course is designed to teach the student fundamental writing skills. Emphasis is on acquiring strategies and techniques for developing effective essays. Students write essays to demonstrate their mastery of the various strategies and techniques.

CM1520 Writing for the Arts
This course will introduce students to the writing of artistic critiques, appreciations, and proposals. Emphasis will be placed on applied writing exercises that require philosophical reflection and that will extend students' vocabulary and increase their effectiveness as communicators in their field.

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 Creative Writing-Writing from Original Sources
Students in this course develop multimedia content from original sources such as recall, interviews, research, conversation and imagination. Students keep a personal journal, develop creative writing skills through various writing exercises and develop written content for multimedia applications
Prerequisite(s): CM1400

CM2100 Workplace Correspondence ●
Communications 2100 gives students the opportunity to study the principles of effective writing. Applications include letters, memos, and short report writing. This course also allows students to explore job search techniques.

CM2150 Workplace Correspondence
This course 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.

CM2200 Communications ●
This course is designed to assist students in developing confidence and skill when making individual oral presentations, communicating in group situations, and interacting in the workplace.

CM2300 Communications-Report Writing ●
This process will stress skill development in planning, researching and documenting, preparing graphic aids, proofreading and editing, and completing formal reports.
Prerequisite(s): CM1401 & CM2100

CP1120 Introduction to Programming I ●
This course is designed to give students 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 program language.

CP1130 Computer Programming
To develop the ability to reduce an algorithm into linear components for solution by computer. The use of a computer programming language is explored to facilitate the solution of the algorithm.
Prerequisite(s): CT1150, SU1310

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.

CP1160 Intro to the Internet ●
The Internet is today's most powerful communication and information resource - providing to millions of people all over the world access to information archives and to each other via a variety of protocols. The Global Area Network (GAN) - Internet course is intended to teach students how to access the Internet as well as to understand the underlying concepts and strategies for finding and using resources. An assortment of tools and protocols will be explored including E-Mail, Listserv, Usenet, Gopher, Telnet, FTP, WAIS and Web Browsers - providing a solid foundation in Internet access to the student, invaluable in navigating the shifting landscape of the Internet

CP1280 Windows Client
This course is intended for support personnel and advanced end users Windows 3.1, WFW 3.11 and Windows 95 operating systems. This course presents the features and capabilities of Microsoft Windows Operating System Version 3.1, Microsoft Windows for Workgroups, Operating Systems with integrated networking version 3.11 and Microsoft's Windows 95.
Prerequisite(s): CP3110 & CR1100

CP1310 Windows Server Administration
This course provides students with the knowledge and skills to perform post-installation and day-to-day

administration in Windows domain.
Prerequisite(s): CR1100

CP1320 Computer Troubleshooting
This course is designed to introduce students to service and maintenance of computer peripheral equipment as well as advanced servicing procedures.
Prerequisite(s): CP2600

CP1400 Website Analysis and Design ●
This course introduces students to the concepts of website analysis and design. Emphasis is placed on designing an effective website. Other components involve optimization of a website.

CP1450 Operating Systems ●
This course is an introduction to the fundamental concepts of the Windows Operating System. Students will apply these concepts through practical applications.

CP1500 Business Applications for Media
The purpose of this course is to provide students with an overview of electronic commerce on the Internet. The objective is to provide students with a sound understanding of electronic commerce technology and with the ability to define technology strategies.

CP1510 Windows Operating Systems ●
This course exposes the student to the Windows operating system. It is anticipated that the student will have access to the most recent version of Windows. This course may include a CD-based learning tool. Important operating system concepts and capabilities will be included in the course. Emphasis is on understanding and utilizing the Windows operating system through a hands-on approach. An introduction to DOS will be introduced through the Windows environment. Emphasis in this course will be on file management in a Windows environment.

CP1610 Introduction to Computer Components
This course is designed to expose students to the basic components of a computer system. The focus will be towards having the students identify and describe computer components. Students will not be required to configure or install computer components. It will also introduce the topics of PC management such as Disk Fragmentation, Disk Compression, Virus Protection, Data Recovery, Disk Caching, Memory Management and the use of RAM Drives.

CP1800 Designing Programming Algorithms
This course is intended to illustrate how to develop logic for computer programs. Its purpose is to augment any introduction to programming course. The course aims are: to illustrate general problem-solving concepts, illustrate programming concepts, introduce program structure, illustrate problem-solving with the sequential logic structure, illustrate problem-solving with decisions, illustrate problem-solving with loops, illustrate problem-solving with case logic structure, introduce array processing, introduce sequential file concepts and introduce the concepts of object-oriented programming.

CP1830 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, with implementation using a programming language. This course uses object oriented technologies using the programming framework to aid the student in developing solutions to business problems. The intent of this course is for the student to become familiar with object oriented techniques and common programming logic and to practice that logic using an object oriented programming language. The student should also be able to develop a solution to a programming problem.

CP1831 Programming II
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 a programming language. This course uses object oriented technologies using the .NET framework to aid the student in developing a windows GUI solution to business problems.
Prerequisite(s): CP1830

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

CP1920 Computer Hardware and Troubleshooting I
This course is designed to expose the students to the basic components of a computer system and methods of troubleshooting those components. It will teach the student how to evaluate, install, configure, troubleshoot and specify all basic components such as CPU, Memory, Hard and Floppy Drives. It will also cover such topics as disk defragmentation, busses and expansion slots, disk caching, memory management and removable drives.

CP1930 Introduction to Systems Analysis and Design
This course is intended to introduce students to the concepts of systems analysis and design using both the traditional and object-oriented methodology. Its emphasis is on the methods and products of each phase of the SDLC rather than on a formalized methodology. Discussion of structured and Object Oriented methods in interwoven. All phases of the life cycle are dealt with emphasis on an object-oriented approach using UML.
Prerequisite(s): CP1830

CP1940 Website and Web Server Development
This course is designed to provide students with the skills required to develop, establish, configure, and maintain a website. The student will develop and publish web pages using HTML and XML. They will configure a web server so that they will have an overview o this process only, and produce dynamic web pages.
Prerequisite(s): CP1100, CP1830

CP1950 Systems II-Object Oriented Development with UML
This course is a continuation of the Introduction to Systems Analysis and Design concepts course with the introduction of more extensive object-oriented concepts. The focus of this is to provide the student with a practical, hands-on skill set of the latest object-oriented design method using Unified Modelling Language (UML) and the Unified Process. The course is laboratory oriented allowing the student to develop real design for use with Object Oriented and traditional programming languages.
Prerequisite(s): CP1930

CP1951 Systems Project III
This course presents advanced topics in ensuring high quality testing and quality assurance. All levels of testing, standards and QA are explained and presented based on current industry standards. Various reporting methods are introduced to describe testing and quality assurance methods used to ensure that the application system produced meets standards. Students will be required to produce a system from start to finish as a part of a team.
Prerequisite(s): CP1930, CP1950

CP1960 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): CP1150, MC1801

CP1970 Java I
This course is designed to give the student an introductory course in object oriented Java. The outline is developed based on the objectives for the Sun Java2 Certification objectives. The Java II course would have to be completed in order to cover all objectives for the certification exam. This is not a graphical user interface curse. It is intended to give the student a good introduction to working with Java and Object-Oriented concepts.
Prerequisite(s): CP1831

CP1971 Java II
This course is designed to give the student an advanced course in object oriented Java. The outline is developed based on the objectives for the Sun Java2 Certification objectives. This course is intended to give the student knowledge of the advanced concepts in Java Programming. The student will be able to produce multi-threaded programs which function as a stand alone Java application or secure, browser based applet.
Prerequisite(s): CP1970

CP1980 Website Scripting
This course is designed to provide students with the skills required to Build Web Pages using Scripting. The student will develop and publish web pages using HTML and SML. The web pages will access a database. They will develop web pages using server-side and client-side scripts.
Prerequisite(s): CP1940, CP1830

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CP2050 Using Windows 95/NT
This course is an introduction to the fundamental concepts of the Windows '95 operating environment and the Windows NT Workstation. The student will apply Windows '95 and Windows NT concepts throughout practical applications.

CP2120 Introduction to Programming II
This course is meant to take the students further in the problem solving, logic, and programming techniques introduced in the first programming course. This course must use 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

CP2170 Windows Server ●
This course provides students with the knowledge and skills to install, configure, integrate, optimize, troubleshoot, and support Microsoft Windows NT Workstation and Server operating systems version 4.0 in local and wide area network (WAN) environments.
Prerequisite(s): CR1100

CP2190 Unix ●
This course is an introduction to the fundamental concepts of the Unix operating system. Students will apply these concepts through practical applications.

CP2260 Legacy Systems
This computer programming course will teach the students how to design COBOL programs. The emphasis of the course will be on how structured programs are best designed and organized as well as the rules for programming in COBOL.
Prerequisite(s): CP1120

CP2270 Java Programming ●
This course is designed to give students a thorough grounding on the principles of object-oriented design and structured error handling in the Java programming environment. Students will be able to produce multithreaded programs which function as stand alone Java applications or secure, browser-based applets. The student will also be able to create applications which can obtain or serve data through the Internet.
Prerequisite(s): CT1125 or CP2280

CP2280 Introduction to Object-Oriented Programming in Java ●
This is an introductory course in object-oriented programming for students with no experience with C++ or Java. 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

CP2310 Electronic Spreadsheet Applications ●
Introduces students to the concepts and applications of electronic spreadsheets.
Prerequisite(s): CP1450

CP2320 Micro Database Applications ●
This course introduces the student to the concepts and applications of database.
Prerequisite(s): CP1450

CP2340 Micro DataBase Application
Using desktop publishing software, students will prepare newsletters, flyers, and other publications which require professional design elements such as columns, boxes, various type fonts and styles, rules, and graphic pictures.
Prerequisite(s): Word Processing or equivalent.

CP2370 Multi-User Database ● 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, and query databases in a relational database environment using SQL and SQL*PLUS. In addition to this, it shows how to design interactive applications using a GUI-based form and report generator.
Prerequisite(s): CP3410

CP2440 Web Server I ●
This course provides students with the knowledge and skills to install, configure and manage Microsoft Internet Information Server.
Prerequisite(s): CP2150

CP2450 Web Server II ●
This course introduces students to the Apache Server. Emphasis is placed on maintaining and allowing interactions on an Apache Server. Other components involve the configuration and installation of the Apache Server.
Prerequisite(s): CP2510

CP2460 CGI Programming ●
This course introduces students to the concepts of Common Gateway Interface applications. Emphasis is placed on designing useful CGI applications. Other components involve dynamic content and its uses.
Prerequisite(s): CP1120

CP2480 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

CP2510 Unix Management ●
This course will teach students how to install and configure a Linix PC based Unix system. It should also teach students the basics of the Unix operating environment. Topics to be covered include files and directory manipulation, configuring the user environment, multitasking, communications tools, via editor, batch programming, pipelining, and the Unix shell programming language.
Prerequisite(s): CP2190

CP2560 Advanced Java Programming
This is a second course in Java for students who have already completed a one-semester course in object-oriented programming in Java. The course stresses using object-oriented design concepts to develop relatively sophisticated graphical applications and applets in Java. The course will enable students to develop graphical, event-driven, multithreaded and network applications and applets.
Prerequisite(s): One object-oriented programming course in Java

CP2570 Multimedia Java Programming II
This course is designed to provide the student with the opportunity to use the Java programming language to create Java Applets.
Prerequisite(s): CP2280

CP2600 Computer Hardware Fundamentals
This course is designed to expose the student to the basic components of a computer system. It will teach the student how to evaluate, install, configure, and specify all basic computer components such as CPU, Memory, Hard & Floppy Drives, Power Supplies, Network Cards, Video Cards, Sound Cards, and Modems. It will also cover topics in PC management such as Disk Defragmentation, Disk Compression, Virus Protection, Data Recovery, Disk Caching, Memory Management, and the use of RAM Drives.
Prerequisite(s): CT1150: ET1101

CP2610 Scripting Languages ●
This course is designed to introduce students to the fundamentals of client-side scripting languages.

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.
Prerequisite(s): DM1100 or equivalent, CP1450 or equivalent

CP2810 Object-Oriented Analysis & Design
This course introduces students to the basic techniques of object-oriented analysis and design and their application to typical business problem domains. Lab assignments and projects will be developed using Unified Modified Language (UML). Practice will be provided in the use of an O-O development tool. Designs will be implemented and tested using the Java and/or C++ languages. Emphasis is on understanding key object-oriented concepts and their application.
Co-requisite(s): An object-oriented programming course (Java or C++)

CP2830 Programming III
This course is designed to give the student advanced skill sin the computer programming process. This course uses object oriented technologies using the .net framework to aid the student in developing solutions to business problems. It incorporates advanced skills required in the programming field such as multi-tier computing, multi-threading, and data access using ADO.net.
Prerequisite(s): CP1831

CP2831 Programming IV
This course is designed to give the student advanced skills in the computer programming process. It uses ASP.net for crating high-performance, high productivity web-based applications using server-side

Visual Basic, C#, or JavaScript. The students will learn to use the Visual Studio.NET to create ASP.NET applications. They will create applications, using web forms that access server-side databases.
Prerequisite(s): CP2830, CP1940

CP3110 MS-DOS
This course is intended to provide the student with a fundamental knowledge of personal computer (IBM compatible) hardware, operation and configuration. The MS-DOS operating system will be explored in detail and students will learn by hands-on application of concepts and procedures covered. The course will also involve setup and operation of MS-Windows.

CP3200 Object-Oriented Programming ●
This course introduces students to the principles of object-oriented programming using the C++ language. Emphasis is placed on understanding key object-oriented concepts and how they are implemented in the C++ language.
Prerequisite(s): CP1120 or CT1120

CP3410 Fundamentals of Database Design ●
This course is constructed as an introduction to the fundamental database design and theory. It provides the basic tools necessary for an effective database management systems design and evaluation. The course deals with the physical, logical, and managerial aspects of database design. Additionally, current theoretical concepts are put into practice using current database architectures and technology.

CP3420 Systems Analysis & Design I ●
This course presents an overview of the system development life cycle. Its primary emphasis is on the methods and products of systems analysis geared towards system documentation rather than towards the formal strategies and techniques of systems analysis and system design. Analysis tools are employed to document an existing system from a physical and logical perspective. Discussion of classical and structured methodologies are interwoven as a foundation for advanced study of analysis and design. The analysis phase will be stressed most heavily but the concerns and products of the design phase are introduced. Considerable emphasis is placed on learning to use the tools of structured analysis. This course will also expose the students to the use of CASE tools for system analysis and design.

CP3600 Computer Peripherals
This course is designed to provide students with hands-on skills required to install, configure, and use peripheral devices such as CD-ROM Banks, Sound Cards, Video Capture Boards, Scanners, Printers, Video Conferencing Systems, Data Acquisition Boards, MO-Drives, PCMCIA Cards and Tape Backup Systems.
Prerequisite(s): CP2600

CP4420 Systems Analysis & Design II
This course is an advanced study of systems development. It is a course of problem solving, wherein the students apply strategies and techniques for dealing with complex systems. This course should employ major project(s) that concentrate on the structured analysis process, the transition from analysis to design, the characteristics of good design, and the techniques of structured design. This course will also expose the students to the use of CASE tools for systems analysis and design.
Prerequisite(s): CP3420

CP4460 Client-Server Database Systems
This is a course in theory and application of client-server database concepts using current, industry-leading software. This course enables the student to develop simple, robust, efficient Client-Server database systems. Students learn about Client-Server theory and put it to practice using current industry-leading products to create and link the front-end (client) and back-end (server) components of a Client-Server system. Students learn about design issues and deal with them in practice, and examine current product offerings.
Prerequisite(s): CP1120 & CP3410

CP4470 Emerging Trends
This course covers a selected area(s) of computing with a unifying theme to be explored in-depth. The topics are selected from an information technology area that has not been fully explored in the student's program to date. The aim of this course is to complement or supplement previous training or to augment training in response to current trends or an unseen deficiency in student knowledge of specific topics.
Prerequisite(s): Depends on topics chosen

CQ1100 Quality Management Strategies
This course will introduce students to the philosophies of Deming, Juran, Crosby, Ishikawa, and other experts that have shaped the quality effort throughout the world. The course will also trace the history of the quality movement and examine the need for quality improvement in organizations. Models and strategies will be examined and utilized to bring about quality improvement. Current trends within the quality movement will also be examined.

CQ1200 Quality Standards
This course will introduce students to the certification procedures and design of internal and external quality standards that apply to organizations. Supplier certification and evolving standards in the international arena are explored as well as ISO9000 standard documentation in its various levels. Writing standards and procedures will be stressed. Third Party Registration and Auditing will also be examined.

CQ1300 Scientific Methods I
This course is designed to introduce students to the techniques and practices necessary to facilitate the interaction of team activities. The utilization of scientific methodologies for collecting, analyzing, and making decisions regarding continuous quality improvement is also introduced in this unit.

CQ1301 Scientific Methods II
This course utilizes the techniques of statistical process control to effectively measure the performance of a quality process. The course builds upon the techniques and methodologies of the Scientific Methods I course designed to produce continuous improvement.
Prerequisite(s): CQ1300

CQ1400 Quality & Organizational Behaviour
This course analysis organizational behaviour in the context of systems theory. Students explore concepts of changing paradigms, the need for understanding and supporting the change process and the role of culture and climate assessments.

CQ1410 Customer Role in Quality
This course is designed to introduce students to the techniques and strategies of focusing the organization on the needs of the customer. Assessing customer needs, enhancing customer relations, evaluating customer satisfaction, and incorporating customer requirements into the design of the products and services are key concepts.

CQ1500 Process Improvement
This course is designed to provide students with tools and techniques of process improvement. The examination of productivity through the use of prevention systems, innovation, reduction of complexity, and mechanisms for ensuring consistency are key concepts.

CQ1510 Process Improvement
This course will provide students with an opportunity to apply quality improvement tools and processes in organizations. Students will identify an organizational process and chart the current situation and develop strategies to improve its efficiency and effectiveness.
Prerequisite(s): Organizations, Paradigms, and Change; Quality as an Organizational Strategy; CQ1610; Customer Focus; CQ1300; CQ1301, Employee Training and Development; CQ1500; CQ1600; Internal/External Quality Standards.

CQ1600 Project Management
Students use quality tools and techniques to organize, plan, implement, manage, and evaluate long and short term projects. Students identify developing indices and trends and learn how to apply them in an organizational setting.

CQ1610 Leadership for Quality
This course will examine leadership and management skills that are consistent with total quality improvement. Students will develop leadership skills to encourage teamwork, delegate authority, use responsibilities to facilitate project implementation, and foster continuous improvement.
Prerequisite(s): Organizations, Paradigms, and Change; Quality as an Organizational Strategy; Customer Focus; CQ1300/1301; CQ1500; CQ1600; Internal/External Quality Standards.

CR1100 Networking Fundamentals ●
This course introduces students to networking. Students will learn about the OSI model and explore devices technologies, and protocols that operate at each layer. In this course students will focus on Local Area Networks.

CR1200 Computer Security ●
Not many years ago, most computers were carefully guarded mainframes, held tightly in the hands of skilled professionals. Today's computer world has adopted an entirely different paradigm which empowers users through distributed networks and stand-alone computers. The openness of wide area networks, such as the internet, has brought computer security to the top of many corporate' agendas. This course offers the student an insight into the complete computer security picture and aids the individual in setting up a secure computing environment.

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CR1310 Network Troubleshooting
This course is designed to teach students how to troubleshoot, identify, isolate and cure LAN faults, by addressing problems related to cables, NICs, protocols and network operating systems.
Prerequisite(s): CP2600 or CP1610

CR1340 Computer Networking Operations
This course is intended to give Manufacturing Operations Technology students an overview of computer networking, data communications, and operating system applications found in processing industries. The student will be exposed to data communications standards and systems, network topologies, Communication Media, Communication Hardware, LAN Protocols, and Microsoft Operating Systems.
Prerequisite(s): CT1150

CR1450 TCP/IP ●
This course is an in-dept introduction to the architecture of the TCP/IP protocol suite. It contains detailed descriptions of the main protocols and principles underlying their operation. It provides students with the knowledge and skills required to set up, configure, use and support Transmission Control Protocol/Internet Protocol (TCP/IP).
Prerequisite(s): CR1100

CR1500 Website Development ●
This course is designed to provide students with the skills required to develop a comprehensive website. The course is targeted at a non-technical end-user who will not be involved in installing and configuring network applications. As such, this course emphasizes the creative use of the technologies

CR1520 Website Design
This course is designed to provide advanced graphic design students with the skills necessary to design and develop a website. The course emphasizes design issues over programming skills. Students will be introduced to basic programming in HTML and will learn how to develop sophisticated page layouts and images for websites.
Prerequisite(s): All first year graphic design courses and all semester 3 graphic design courses.

CR1521 Advanced Website Design
This course is designed to provide students with the skills required to develop visually rich and interactive websites. Creating vector-based animations and interactive multimedia content will be an emphasis of this course. Students should already be familiar with how to design and program a website.
Prerequisite(s): Successful completion of all core Graphic Design courses in semesters 1 through 4, and the first Intersession.

CR1550 Website Trends ●
This course includes selected areas of computing with a unifying theme (instructor's choice) to be explored in depth. The topics may be selected from: Data Communications, WebSite Administration, WebSite Management, WebSite Design, WebSite Server, E-commerce, and/or other related areas. Course material will be selected in the semester prior to the semester in which the course will be delivered.

CR2100 Website Management
This course is designed to give the students an understanding of the Web technologies. The Web technologies will be used as the basis for building a website.
Prerequisite(s): CR1100

CR2110 Novell
The purpose of this course is to introduce students to the NetWare 5.X network operating system, its major features, the installation and configuration process, the principals and tools for effective network management, and troubleshooting techniques to keep the network running smoothly.
Prerequisite(s): CR1100

CR2120 Network Management SMS-SNMP
The focus of this course is on network management. It covers network management principles such as virus protection, security, software management, disaster prevention, and hardware management. Software management is performed by providing the student with the knowledge and skills required to install, configure, administer, and troubleshoot Microsoft Systems Management Server (SMS). This includes collecting hardware and software inventory, distributing software to client computers, managing shared applications, querying the SMS database, and using remote control functions to diagnose and solve common problems. This course also teaches students how to manage and troubleshoot network hardware through the use of SNMP.
Prerequisite(s): CP2170 and CR1100

CR2220 Groupware
This class provides the student with the knowledge and skills required to plan, install, configure, and support enterprise mail systems.
Prerequisite(s): CR1100

CR2310 Network Analysis & Design
This course is designed to teach the fundamental knowledge needed to design, configure, and implement local area networks. The course emphasizes the integration of available software and hardware elements, and provides a solid understanding of network architectures and protocols.

CR2400 Internetworking
Internetworking is the interconnecting of various types of networks with different types of devices. The purpose of this course is to explain and where applicable, demonstrate the devices, protocols and technologies associated with connecting networks both LANs and WANs.
Prerequisite(s): CR1100

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

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

CS1600 Leadership 1 - Wilderness Travel Theory
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. Skills in map and compass use and route finding will also be introduced.

CS1601 Leadership II Guiding Principles
This course will study outdoor leadership. Topics include an overview of outdoor leadership, group dynamics, conflict resolution, leadership theories, judgement and decision making, guiding approaches, and instructional techniques.
Prerequisite(s): CS1600

CS2100 Leadership Skills II
This course is the second of three leadership courses designed to help people work with groups. The course has a human relations focus. Decision making, conflict resolution, controversy, recruitment, meeting management, motivation, planning and fundraising are the major topics. Case studies, gaming, simulations, role play and form exams are part of the evaluation process.
Prerequisite(s): CS1100

CS2101 Leadership Skills III
This course helps students practice and develop their leadership skills by determining a community need, setting specific goals, planning a program, implementing the plan and evaluating the learning process.
Prerequisite(s): CS2100

CS2200 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 counselling strategies, and apply interviewing skills in a variety of situations through the extensive use of role-playing, case studies, and report writing.
Prerequisite(s): HR1100, CS1100

CS2300 Research Methods
This course deals with the various methodologies of social research. It aims not only to present a concise understanding of research but also to provide the skills and techniques to conduct it.

CS2320 Information Retrieval & Management
The Internet is today's most powerful communication and information resource. The World Wide Web is becoming an indispensable source of information

that tourism businesses must use to provide information services to customers. This course is intended to teach students how to access the Internet, as well as to understand the underlying concepts and strategies for finding and using resources. The intent of this course is to conduct applied usage of the Web with refined searching skills as opposed to a technical approach.

CS2410 Crisis Intervention Skills
This course provides students with the knowledge and skills to identify and assess crisis development in human service agencies and to implement appropriate strategies for prevention and intervention. Students will also receive a St. John Ambulance Certificate in Standard First Aid and Level C-CPR.

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.

CS2510 Software Project Planning
This course will provide students with the methodologies for defining and planning the operating parameters of a multimedia software project. Development of time lines and project milestones are discussed as well as cost estimation for the overall project.

CS2600 Leadership III Wilderness Survival
This course is an advanced wilderness emergency response course which incorporates the St. John Ambulance Standard First Aid, Basic Rescuer CPR, and Wilderness First Aid courses. A leader's response to an accident, casualty assessment, and caring for the casualty in a wilderness setting will be studied. Common wilderness injuries and the recognition of common illnesses will be identified and appropriate care will be discussed. Guides will be trained in hazard identification, avoidance, management, and emergency response techniques. The guide's role in search and rescue management will also be discussed. Practice sessions in a wilderness setting will provide opportunities for students to practice first aid techniques, lead groups, and coordinate rescue procedures in simulated emergency situations.
Prerequisite(s): CS1600, CS1601

CS2620 Wilderness Survival
This course is designed to teach the student the necessary skills required to travel and survive in a wilderness setting. It includes practical and theoretical information on search and rescue techniques, and emergency survival skills. It includes information on trip preparation, maps, compasses, factors that affect survival, survival techniques, search and rescue procedures and rope handling.
Prerequisite(s): Standard First Aid

CS2700 Self Directed Learning Project
This course is normally taken in the fourth semester of a student's program. It is designed to help students integrate and build upon previous courses in their program of studies. Based upon independent study, and structured around a learning contract between the student and the instructor, the course consists of students focussing on a specific issue within their field of specialization.

CT1100 COBOL Language
This course is designed to introduce students to the principles of business programming in COBOL Language.
Prerequisite(s): CP1120, CT1120, ET2100, AE2300 or DP1100

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

CT1125 Object Orient Programming in C++
Object-oriented programming, (OOP) techniques are becoming increasingly popular with industry. OOP programs tend to be easier to understand and easier to maintain then their procedural counterparts. OOP code can reduce the amount of coding by the reuse of existing software and hence reduce the cost of the development and adaptation of existing software to meet new requirements. This course attempts to familiarize the student with the philosophy of OOP techniques by introducing a popular OOP language: C++.
Prerequisite(s): CT2300

CT1150 Introduction to Computers in Technology
This course is designed to provide technology students with a working knowledge of computers, file management, file design, productivity tools, database logic, and basic programming concepts. You will use selected productivity software for Databases, Word Processors, Spreadsheets, and Web Browsers.

CT2300 Applied Programming
A course designed to introduce the technology student to the concepts of problem solving using computer programming. The course will be taught using a high level language such as C or C++. Students will write programs to solve problems within their related disciplines and will learn the concepts of troubleshooting and problem solving. Structured programming concepts using C++; Data Types; Decision Statements; Loop and Interation Procedures; Input and Output Procedures; Pointers; Structures and Files.
Prerequisite(s): AE1200, ET2100

CT2330 Applied Programming
This is an introductory programming course designed to introduce the student to the basic problem-solving and structured-programming techniques used to design computer solutions for real world Engineering problems. Topics include: structured design techniques, stepwise refinement, constants, types, variables, arithmetic logical and bitwise operators, decision structures, looping structures, functions, multi-dimensional arrays, structures, stream I/Q, and graphical I/Q.
Prerequisite(s): CP1150

CT2400 Systems Analysis & Design I
This course introduces students to the tools used to analyze systems, and to create graphical models of the system. Emphasis is placed on the tools and methodologies of Process-Oriented Analysis and Design
Prerequisite(s): CT1125 or equivalent

CT2500 Operating Systems
This is an introductory course intended to give the students a basic understanding of operating systems. The course will survey techniques used by the various subsystems of a modern operating system. Examples will be taken from Unix and MS-DOS.
Prerequisite(s): CE3400, CT1125

CT3110 Windows Programming in C++
Windows 3.0 and 3.1 by MicroSoft have become the dominant Graphical User Interface for the IBM and IBM clone personal computer. This is an advanced programming course which deals with the increased complexity of working with a GUI in a multitasking environment by training the student to use improved software tools based on C++. C++ is an object-oriented programming language which tends to reduce the amount of coding by the reuse of existing software.
Prerequisite(s): CT1125 (or equivalent)

CT3120 PC Configuration
This course is designed to expose the students to the basic components of a computer system. It will enable the student to evaluate, install, configure, and specify all basic computer components. This course will also give the students an overview of various network operating systems and network management techniques.

CT3130 Java Programming
This course is designed to give the students a thorough grounding on the principles of object-oriented and Graphical User Interface (GUI) design using structured error handling in the Java programming environment.
Prerequisite(s): CT1125, CT2400

CT3510 Microcomputer Database Pgm.
This course covers database concepts, methods, and terminology. It provides the basic tools necessary for an effective database management systems design and evaluation. The course deals with the physical, logical, and managerial aspects of database design and administration. Additionally, current theoretical concepts are put into practice using current database architectures and technology.
Prerequisite(s): CE3400, CT2400

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

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a vision of the changes needed for full participation. Furthermore, students will examine strategies which can be used in building inclusive communities.
Prerequisite(s): DB2100

DB2300 Program Planning
This course familiarizes students with processes which can be useful in supporting individuals and families to plan for their future. Students gain the skills required to coordinate and evaluate an individualized and value-based approach to planning with persons who have disabilities.
Prerequisite(s): DB2100

DE1110 Applied Research
The course is designed to provide a good understanding of a model for definition, analysis, and solution of technical problems; and to develop the student's ability to (i) apply diverse methods and strategies in project analysis, (ii) prepare and deliver effective oral technical presentations, and (iii) define and plan a major applied research project.
Prerequisite(s): CM1400, CM1401

DE1200 Operations Research
This introductory course is designed to provide basic understanding of certain concepts of operations research and the role that these analysis play in decision-making. It complements the course Engineering Management CG3400.
Prerequisite(s): MA1101

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): EG1101; SP1700; FM3100

DM1100 Document Production Fundamentals ●
This course provides mastery of the keyboard by the touch method at a minimum rate of twenty (20) net words per minute for three minutes. As well, basic word processing applications are introduced and reinforced through the production and revision of short business documents.

DM1200 Document Production I ●
This course includes keyboarding and basic document formatting. Keyboarding speed on straight copy material is developed to 30 to 40 net words per minute for three minutes. The following documents are produced using word processing software: notices and announcements, basic correspondence, basic tables, and basic reports.

DM1201 Document Production II ●
This course further develops keyboarding speed and accuracy and increases proficiency in document production using intermediate word processing applications. Keyboarding speed on straight copy material is developed to 40 to 50 net words per minute for five minutes. Topics covered include file management, advanced print functions, and further reinforcement of skills in the production of business correspondence, tables, reports, and forms.
Prerequisite(s): DM1200

DM1300 Transcription ●
This course develops skill in machine transcription. Emphasis is placed on improving language skills: grammar, punctuation, and spelling. Decision-making skills are introduced through the transcription of basic business documents.
Prerequisite(s): DM1200

DM1301 Transcription II
This course is designed to further develop skills in machine transcription. Emphasis is being placed on accuracy and speed of transcription as well as grammar, punctuation, and spelling competency. Documents will be transcribed from various business environments such as tourism, legal and small business enterprise. Decision-making skills are improved in the transcription of complex unarranged material.
Prerequisite(s): DM1300

DM1310 Legal Transcription
This course increases competency in machine transcription. Emphasis is placed on accuracy and speed of transcription as well as on grammar, punctuation, and word usage competency. Decision-making skills are honed through the transcription of legal documents for general legal procedure, civil litigation and incorporation.
Prerequisite(s): DM1300

DM1400 Medical Transcription I ●
This course introduces the student to a basic understanding of medical transcription. Emphasis is placed upon the operation of the transcription equipment, the guidelines and rules of medical transcription, and the development of the student's skills to transcribe medical correspondence and reports.
Prerequisite(s): DM1301, DM1201
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. Medical typing drills will be used to enhance proficiency in transcribing the medical cassettes with speed and accuracy.
Prerequisite(s): DM1400, DM2200, TM1100
Co-requisite(s): TM2100

DM2200 Document Production III ●
This course combines keyboarding development, document processing, and word processing to improve proficiency in document production using a new word processing software program. Keyboarding speed on straight copy material is developed to a minimum of 45 nwpm for five minutes. Topics covered include transfer of word processing skills to a new software, file management, efficient use of fonts and attributes, editing documents, using special features of the word processing software, and further reinforcement of skills in the production of business correspondence, tables, and specialized business documents.
Prerequisite(s): DM1201

DM2201 Document Production IV ●
This course combines keyboarding development and document formatting using a project/simulation approach. Keyboarding speed is developed to a minimum of 50 nwpm for five minutes. Students will be expected to develop and use decision-making skills to process and produce documents at an advanced level. Using MS Word 97, students will format documents such as letters, memos, reports, tables, programs, and newsletters; composition and critical thinking skills will also be developed. Students will use the Internet to complete research assignments and PowerPoint software to prepare presentations. They will perform tasks that will require the integration of various software packages, i.e; word processing, database, and spreadsheet.
Prerequisite(s): DM2200

DM2210 Legal Document Production I
This course combines keyboarding development, word processing concepts, and legal document processing. Keyboarding skills will be reviewed and developed in the range of 45 to 55 net words per minute for five minutes with an emphasis on accuracy. This advanced course is designed to teach students the setup and function of various legal and non-legal documents including correspondence, reports, memoranda, accounts, contracts, court documents and corporate papers. These documents will be produced with speed and efficiency using state-of-the-art equipment and software to create a precedent file from which students will merge text from the keyboard. In addition, word processing concepts introduced in Document Production II will be further enhanced.
Prerequisite(s): DM1201

DM2410 Legal Transcription
This course continues to increase competency in transcription. Emphasis is placed on accuracy and speed of transcription of business correspondence and legal documents presented in an unarranged, office-style manner. Decision-making skills are further honed through transcription of legal documents for real estate, wills and estates, and family law.
Prerequisite(s): DM1310

DM3210 Legal Document Production II
This course further develops keyboarding, word processing, and legal document processing skills. Through further emphasis on accuracy and speed development students are given the opportunity to develop straight-copy keyboarding speed in a range of 50 to 60 net words per minute for five minutes. This course is a continuation of Legal Document Production I and incorporates many of the basic legal formats learned. Students will be trained to produce, with speed and efficiency, legal documents required in wills and estates, real estate, and family law using appropriate precedents. Students will further develop a precedent file on disk using state-of-the-art equipment and software. More advanced word processing concepts will be reinforced through practical applications.
Prerequisite(s): DM2210

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

DP1300 Digital Fundamentals
Introduction to Programmable Logic Controllers with Digital Fundamentals introduces the student to the fundamental building blocks and design techniques associated with digital components and circuits. The student will also gain construction and troubleshooting skills through practical laboratory sessions. This will lead into a comprehensive coverage of general programmable logic controller concepts. In addition the student will have the opportunity to apply their digital abilities and programmable logic controller knowledge to develop and program basic control circuits on a particular PLC.
Prerequisite(s): ET2100

DP1700 Electronics
This course introduces the principles and applications of analog electronic devices such as junction diodes and transistors function. Introduction to power supplies, covering rectification, filtering, and regulation. Troubleshooting techniques will be covered in the lab using oscilloscope, multimeters and other electronics equipment. In this course the student will be able to apply all the basic electronic theory from previous basic electronics.

DP1701 Electronics
In this course the student will learn about amplifiers, Oscillators, different types of audio and RF filters, differential amplifier, mixers and modulations circuits. The student will cover all basic theory and some of the circuits used in radio receivers. In labs the student will identify symptoms in malfunctioning equipment and perform preliminary checks and eliminate obvious problems.
Prerequisite(s): DP1700

DP1710 Digital Electronics
This is an introductory course designed to give the student a basic introduction to digital electronics, numbering systems used in digital electronics, and a description of digital as well as the basic logic gates. Other group of circuits as sequential logic circuits, counters and shift registers will be explored.

DP1800 Motors Generators and Starting Systems
The purpose of this course is to give the student an overview 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 starting systems will be covered in this course.

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 students to robotics fundamentals; operations; programming; interfacing to other components and systems; and application of robotic technology to computer numerical control (CNC) and computer integrated manufacturing (CIM). Course activities will be concentrated on both pneumatic and electronic robots, CNC's theory and machine tool control practice and the integrations of engineering manufacturing by using computers and micro-controllers.
Prerequisite(s): DM2201; FM3100, DP2400, XD2500, EG1120
Co-requisite(s)s: XD2900, DP2150

DP2400 Digital Microprocess.
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

DP2500 Programmable Controllers
Advanced programmable controllers with communication concepts introduce the student to advanced PLC programming with communications between PLC using industrial Ethernet. This will lead into Networkwide and worldwide data communication based on TCP/IP, field and cell level communications with profibus DP/FMS and ASI.
Prerequisite(s): DP1300

DP2710 Digital Electronics
The basic digital techniques learned in the prerequisite course will be adapted to more sophisticated circuitry. In this course, the student will learn about variety of logic families and interfacing between them. Other topics are electronic translators, encoder and decoder. The central processing unit (CPU), arithmetic-logic unit (ALU) of a computer, will be covered by the student. The total microprocessors will be examined fully in this course.
Prerequisite(s): DP1710

DP3100 Programmable Logic Controllers
This course introduces the student to the general concepts and programming techniques for digital, analog and peer to peer communications associated with programmable logic controllers used in the instrumentation applications.
Prerequisite(s): MP3130, CT2300

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 us of the microcontroller's limited resources. Hands-on experience is provided for the Motorola 6811 Series of microcontrollers.
Prerequisite(s): CT2300, DP2400

DP3300 Microprocessors
this course provides the student with a knowledge of the hardware associated with a microprocessor system and the interface requirements for communication with the environment.
Prerequisite(s): CT2300, DP2400

DP3400 Digital Communications
This is an advanced electronics communications course designed to provide the fundamental concepts of the modern digital communications systems and the data communications.
Prerequisite(s): CE2250, DP1100

DP3430 Data Communications
This is an intermediate level data communications course that introduces the fundamental concepts such as transmission media, analog and digital signals, data transmission and multiplexing.
Prerequisite(s): ET2100
Co-Requisite: CT2330

DR1110 Basic Drawing and Sketching
This trade specific drafting course requires the use of basic drawings, specifications, bills of materials, drawing instruments and facilities, and CAD software and hardware. It involves reading basic drawings and diagrams, sketching, interpretation of specifications, and operating the CAD system. It includes information on sketching techniques, types of drawings, and CAD commands.

DR1120 Blueprint Reading for Welders
This course requires the use of drawings, views, joint configuration, abbreviations, and weld symbols. It includes information on joint and welding symbols for weld fabrication.

DR1210 CADD Drawings
This course is designed to be presented in the first six week technical session, of the first year of the three year Civil Engineering Technology program. Its primary purpose is to complement and enhance course material already covered in this subject area. Computer Aided Drawing is a continuation of Engineering Graphics presented in the second tern of the Civil Engineering Technology program. Course material will consist of a combination of Engineering drawing practice and Autocad procedures. The course will be presented as a thirty nine hour, hands-on approach, to the acquisition of drawing skills sing autocad.
Prerequisite(s): Engineering Graphics will be a prerequisite for this course.
Co-requisite(s): Engineering Drawing DR1211

DR1211 Engineering Drawing
This course will be presented during the first intersession of the Civil Technology program. Its purpose is to impart to the student a working knowledge of the requirements of Engineering drawings as applied to buildings so as to meet the requirements of the national building code.
Prerequisite(s): EG1100
Co-requisite(s)s: DR1210, SU1200

DR1600 Forestry Graphics
This course addresses the basic tools and techniques for drawing in both manual and computerized drafting environments. While working on specific forestry related technical drawings, maps, graphs and other pictorials the student is exposed to practices that will produce professional quality, neat, accurate and complete drafting products. Manual drafting topics include instrument selection and use,

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manual and mechanical lettering, the use of scales, symbols, dimensioning, linework and projections. The computerized portion of the course introduces CAD and provides skills in: drawing and editing entities, using display commands, working with text, layering, dimensioning, mapping and block filling. Reproductive media and methods for plotting and printing are included.
Prerequisite(s): MC1050 Computer Applications

DR1700 Basic Drawing and Sketching
This trade specific 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.

DR1710 Basic Drawing and Sketching
This course provides training in blueprint reading and sketching.

DR1720 Drafting
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.

DR1740 Drafting
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):

DR1750 Drafting
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):

DR1760 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): MC1050

DR2100 Architectural Drawings
An introduction to Architectural Drawing with emphasis on applying architectural drawing conventions to actual architectural drawings.
Prerequisite(s): EG1100

DR2300 CADD (Advanced AutoCAD)
This course follows the engineering graphics course completed in primary year. It covers the more advanced commands used in the AutoCAD drafting package. The use of AutoCAD with electrical design software will be investigated.
Prerequisite(s): EG1100

DR2410 Electronic CADD I
This course is designed to give the student a basic knowledge of the technical graphics techniques required in the electronics industry through the use of industry standard ELECTRONIC CAD software; it introduces the student to specific types of drawings required in the electronics industry. This course utilizes extensively Computer Aided Design (CAD) software. The packaging and component drawings will be done using AUTOCAD. The Electronic Specific drawings will be done using ORCAD or equivalent Schematic Capture software with built in error checking, parts list generation and parts annotation.
Prerequisite(s): EG1101, ET2100

DR2411 Electronic CADD 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

DR2520 Mechanical Drafting
This course is a continuation of Engineering Graphics 1100 (EG1100). It is designed to provide students with the ability to interpret and to prepare Mechanical Drawings related to Petroleum Technology and to broaden their knowledge, understanding and proficiency in the use of CADD and engineering graphics.
Prerequisite(s): EG1100

DR3100 Architectural Working Drawings I
This course is an introduction to building construction techniques, architectural working drawings and detailing. It is designed to enable the student to become involved in the creation and proper use of working drawings. Course material takes the form of lectures, group projects, and analysis of such projects.
Prerequisite(s): EG1200, DR2100
Co-requisite(s)s: BU2300, BU2400, CF2600

DR3101 Architectural Working Drawings II
This is a course dealing with larger buildings of masonry construction. It is designed to enable the student to become a functional part of a group involved in the creation and proper use of working drawings. Course material takes the form of lectures, group projects, and group analysis of such projects.
Prerequisite(s): DR3100, BU2300, BU2400, CF2600
Co-requisite(s)s; BU2301, BU2401, CF2601, EG2200

DR3200 Advanced CAD
This course is designed to give the student an exposure to programming logic and data linking between graphics information and text/numerical data. After a general introduction to basic programming and LISP, the students are expected to make extensive use of CAD customization concepts. Data linking through attributes and SQL is used in the development of data tracking with emphasis on Facilities Management. Also included are the concepts and procedures in the presentation of animated drawing and virtual images, which are used in the preparation of the major technical project.
Prerequisite(s): CT1150, EG2200, PR2300
Co-requisite(s)s: DR4101, PR2210

DR3300 Manufacturing Technology
This is introductory course in manufacturing technology. In this course, students are introduced to fundamentals of computer-aided drafting, design and manufacturing (CADD/CAM). Emphasis is placed on theory and practice in the metal fabrication industry through computerized numerical control (CNC) shape cutting.
Prerequisite(s): MC1100

DR3710 Tool Design
This course is an introduction to Tool Design and tool making practices. It will provide the students with the basic knowledge to understand and design simple types of tooling required within the manufacturing industry.

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, WireEDM 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): SP1701

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

EC1100 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. The emphasis is on Canadian examples where this is possible.

EC1140 Microeconomics
Transferable to MUN Economics 2010.
This is a course in Microeconomics that is intended to prepare a student to take additional courses in economics which make use of Microeconomic tools of analysis. In addition, the subject matter of this course will help in understanding some of the concepts, problems, and arguments that are presented in other courses or in the public press. In this course the student will develop a set of tools of analysis that will provide insight into what is involved in the decision making process, realize implications that may not be readily apparent to the general public, and be situated in a position to more readily ask relevant questions concerning diverse initiatives. The course will cover the following topics: scarcity and opportunity cost, demand and supply, elasticity, household demand, marginal utility, indifference curves, production functions, short-run and long-run cost functions, perfect competition in the short-run and in the long-run monopoly.

EC1150 Economics
Transferable to MUN Economics 2011.
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.

EC1200 Macroeconomics
This course examines the physical and monetary aspects of international trade, money, banking, and monetary policy; the gross national product, national expenditure components, business cycles, and fiscal policy. The emphasis is on Canadian examples where this is possible.

EC1400 Newfoundland & Labrador Economy
The course objective is to develop an understanding of the structure of the Newfoundland and Labrador economy. The course applies economic theory of examination of the economic history, the economic sectors, the economic potential, and the budgetary processes associated with the economy of Newfoundland and Labrador.

EC1700 Engineering Economics ●
This course covers the basic principles of engineering economy with application to engineering economic decision-making. The various methods for economic analysis of alternatives are investigated as well as depreciation methods and income tax consequences.
Prerequisite(s): MA1101, CT1150

EC1710 Engineering Economics and Supervision
This course covers the basic principles of engineering economics like time value concepts, rate of return on capital, economic analysis 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.

EC1720 Construction Economics
This course will give the student the knowledge necessary to make decisions based on economic alternatives. It will introduce the student to the field of micro and macro economics as well as provide a basic understanding of the requirements needed to start and succeed in their own business related to the construction industry.

This course is an introduction to the fundamental principles of engineering economics and entrepreneurship. The concepts of microeconomics and macroeconomics are presented along with applications to the engineering field. Entrepreneurship will be used to introduce fundamentals of business functions and procedures.
Prerequisite(s): MC1100, MA2100, CM1401

EC2410 Economic Geography
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.

EC2600 Petroleum Exploration Economics
This is a detailed course in Exploration Economics outlining the fundamentals of economic analysis as applied to the evaluation of oil and gas properties. The course provides learners with the necessary knowledge and skills to utilize economic parameters as one means of evaluating a petroleum prospect. While economic formulae and manual/spreadsheet calculations are employed, emphasis is placed on understanding the economic principles involved such that computer generated economic analysis can be properly interpreted and analysed and recommendations made.
Prerequisite(s): MA1101, CT1150 or equivalent

EE1130 Curriculum Foundations ● ⊗
This course focuses on the theory and function of play. Students will learn to design play space, plan specific learning and interest centres and choose appropriate equipment and supplies in order to foster the development, creativity and learning of young children. Particular emphasis is given to the provision of well-balanced and integrated programs to meet the needs and interests of the whole child - physical, intellectual, emotional and social. Students are introduced to simple activity planning, preparation, implementation, review and follow-up.

EE1140 Child Development I ● ⊗
This course will focus primarily on the provision of child study methods that will enable a student to observe record and interpret child behaviour. On-site observations will be required. Through application of systematic observation students will be familiarized with the stages and milestones of development from infancy to school age. Students will be familiarized with observation as assessment in inclusive developmentally appropriate settings.

EE1201 Child Development II ● ⊗
This is an introductory course that focuses on development from conception to 36 months with a view to understanding typical growth and developmental patterns. The influence of the environment, the culture and the family on development will be integrated throughout so as to foster awareness, acceptance and understanding. Infants and toddlers with disabilities will be described with a focus on understanding the effects of exceptionality on development. Infants and young children who are at risk will be discussed and the significance of prevention and early intervention will be highlighted.
Prerequisite(s): EE1140

EE1240 Curriculum I ● ⊗
This introductory course focuses on the planning and development of early childhood education curriculum and programs, and provides an overview of the major theoretical models and approaches currently being used in early childhood programs. Throughout this course the unique learning styles and the individual differences and interests among children will be emphasized and used as a basis for individualizing the curriculum. The students will also have the opportunity to further develop their planning skills in specific curriculum areas and apply the principles of cumulative planning to the construction of curriculum themes. An overview of the basic forms of child care will be presented and related to the needs of children and family requirements.
Prerequisite(s): EE1130

EE1241 Curriculum II ⊗
This advanced curriculum course provides the students with the opportunity to further develop curriculum themes by creating learning webs through a webbing process. Students will also plan in three specific curriculum areas - math, science and language, and will relate this knowledge to the construction of learning webs. The use of teacher directed activities will be explored in the context of group planning. Appropriate practice will be considered in school-age care and students will develop competencies in planning for the needs of children from 6 to 12 years of age. This course will emphasize the inclusion of children with special needs in mainstream child care and highlight the integration process, the role of the early childhood educator in implementing individualized education programs, and assessment and evaluation.
Prerequisite(s): EE1240

EE1250 Foundations of Positive Behaviour Guidance ● ⊗
This course provides a foundation for understanding and guiding children's behaviour. The purpose of this course is to provide an overview of principles and strategies needed to guide behaviour. The focus will be on understanding behaviour and implementing techniques that foster positive relationships, self-esteem and create opportunities for learning.
Prerequisite(s): FW1300

EE1260 Infant and Toddler Care
This course focuses on the unique needs of infants and toddlers and how these needs can be met

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through a comprehensive interpersonal-environmental approach to programming and planning for children during the first two years of life. This approach takes into consideration the interrelatedness of the developmental domains - cognitive, social, emotional, physical and language -and individual differences among very young children. Particular attention is paid to the various roles of the caregiver and the special vulnerability of infants and toddlers is considered in program design and planning. The importance of open communication between parents and caregivers will be highlighted throughout the course as one factor that contributes to quality care for infants and toddlers.
Prerequisite(s): EE1201

EE1300 Family Studies I ● ⊗
This course will provide the student with the necessary knowledge and skill to develop an awareness of the needs and experiences of the present day family unit. Attention will be paid to the current changes in family structure, role, definition, and life styles in relation to the family as a social system. Students will be introduced to the diverse needs of families.

EE1301 Family Studies II ⊗
This course focuses on partnerships between parents and early childhood educators. It stresses the significance of positive relationships between parents and educators. Students will become familiar with strategies that promote parent-educator partnerships that create and maintain family-centered and culturally sensitive early childhood education.
Prerequisite(s): EE1300

EE1400 Creative Activities I - Art ● ⊗
This course takes the form of a series of workshops designed to provide students with practical exposure to a variety of art media. This firsthand experience, together with the theory and knowledge in the area of art for young children will prepare students to offer art experiences which are developmentally appropriate. Particular attention will be given throughout the course to the sensory and expressive qualities of each medium, the student's individual creative response to the material and the developmental nature of children's art. The role that art plays in the development of children with and without disabilities will be highlighted.

EE1401 Creative Activities II - Literature ● ⊗
This course will focus on children's literature and its significance for emerging literacy. Students will examine a variety of book types available for young children and learn to choose appropriate quality literature. The use of poetry, puppets and drama will be highlighted to emphasize the various types of activities suitable for young children. Students will learn to choose materials and apply methods that meet a variety of developmental needs.

EE1510 Current Research and Issues Seminar ⊗
This course takes the form of weekly seminars on topics related to the current research, issues, trends and challenges in the field of Early Childhood Education. The student will identify an area of interest relevant to working with young children and will, under the guidance and direction of the course instructor, compile a project which will form part of a total resource for the whole seminar. Individuals may work on projects together depending on the nature of the topics selected. The purpose of the seminar is threefold: (1) to help the student focus on best practice in the field of Early Childhood Education and to further develop informed professional judgement in order to consolidate the learning which has occurred during the diploma program; (2) to provide students with the opportunity to actively participate in the project work of other seminar members; and (3) to provide a forum for presenting projects.

EE1710 Professional Development
This is an introductory course in Early Childhood Education professional development principles.

EE2200 Child Development III ⊗
This is an introductory course that focuses on the development of young children from three to five years of age with a view to understanding typical growth and developmental patterns. Major research studies regarding child development are reviewed. Preschoolers with developmental challenges and those at risk will be described with a focus on understanding the effects of exceptionality on development.
Prerequisite(s): EE1201

EE2201 Child Development IV ⊗
Development through middle childhood, adolescence and adulthood is studied in this course, with a major focus on development during the middle childhood years. In addition, students will consider the special needs of children with developmental challenges during the school-age years. **Prerequisite(s)**: EE2200

EE2250 Advanced Behaviour Guidance Strategies ⊗
This course offers a more in-depth exploration of guidance theory and its application to the study of children with emotional and behavioural challenges. An emphasis will be placed on exploring the possible causes and resulting challenges for children with special needs. Community resources to support children with emotional and behavioural challenges and the families will be identified.
Prerequisite(s): EE1250

EE2260 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 run high quality inclusive Early Childhood Education programs. Provincial legislation and regulations, and factors which contribute to quality will be examined in detail.
Prerequisite(s): EE1241

EE2300 Family Studies III ⊗
Sources of crises in the family are examined, for example, children with special needs, unemployment, divorce, poverty, and death. The impact of such crises on the child and family and the implications for day care centre staff are discussed.
Prerequisite(s): EE1301

EE2301 Family Studies IV ⊗
Sources of family crises due to dysfunctional responses to stress are examined, for example, alcoholism, family violence. The course will also study family networks and relationships within the community. The linkages of independence and assistance among families, social agencies and the community will be examined. Presentations will be encouraged from students and representatives of local agencies.
Prerequisite(s): EE2300

EE2420 Creative Activities III - Music ⊗
An introduction to the role of music in the social, physical, emotional, imaginative and educational development of children. Emphasis will be given to a large repertory of songs and rhymes, basic music literacy, methodology, instruments and resource books and recordings. Call within the context of singing, beat/rhythm, expressive controls and creative movement.

EE2430 Creative Activities IV - Movement ⊗
This course will focus on how to plan and provide a movement program for young children. Planning movement experiences requires an understanding of the significance of large muscle development in young children and the importance of physical activities in a child's growth. Both indoor and outdoor environments are considered in relation to the provision of movement activities. Consideration is given to modifying activities and materials to include children with special needs.

EG1100 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.

EG1101 Engineering Graphics
This is an intermediate CAD - Based drafting course designed to provide students with the ability to interpret and prepare mechanical drawings which extend on the basic principles presented in Engineering Graphics EG1100.
Prerequisite(s): EG1100

EG1200 Engineering Graphics
This course is a continuation of Engineering Graphics 1100. It is designed to provide students with a greater knowledge of fundamentals of both engineering graphics and CADD. Drawing projects will utilize CADD techniques.

This course focuses on basic graphics principles and CADD. Topics include auxiliary views, geometric applications, developments, intersections, advanced dimensioning techniques, data organization and manipulation, advanced drawing, editing and display techniques, isometric drawing using CAD, advanced plotting and Pline and Pedit commands.
Prerequisite(s): EG1100

EG1300 Engineering Graphics
This is an intermediate CAD-based drafting course designed to provide students with the ability to interpret and prepare mechanical and structural drawings which extend the principles presented in Engineering Graphics 1100. Also, prepares the student hands-on practice in reading and interpreting blueprints.
Prerequisite(s): EG1100

EG2110 Engineering Graphics
This is an advanced course in computer aided drafting and design for students enrolled in Mechanical (Manufacturing) Engineering Technology. Emphasis is placed on using CAD as a tool for both development of working drawings and virtual prototyping of mechanical systems. Manufacturing related 3D solid modelling tools available within both AutoCAD 2000 and AutoCAD Mechanical Desktop are introduced, and alternative software tools including Solidworks, Pro Engineer, IDEAS, and Unigraphics are overviewed.
Prerequisite(s): EG1101

EG2200 Engineering Graphics
This course is taken concurrently with Architectural Working Drawings II and Building Services II and is designed to develop student's presentation skills through the use of 3D CAD techniques. Students are exposed to building drawings using the interactive model format, with various 2D and 3D drawings extracted from a building database. Students are expected to produce photo-realistic colour images incorporating shadowing, diffusion, and reflection. A course designed to develop student's presentation skills by using 3D CAD software. Projects are developed in an interactive format with the various drawings extracted from a 3D database. A variety of techniques including shadowing, light diffusion, and reflection are used to produce photo-realistic images.
Prerequisite(s): DR3100
Co-requisite(s)s: DR3101, BU2201

EH1100 Earth Sciences
Transferable to MUN Earth Sciences 1000.
A survey of major earth systems, including the interior of the earth, lithosphere, hydrosphere, atmosphere, and biosphere – their structure, composition and interaction.

EH1101 Earth Sciences
Transferable to MUN Earth Sciences 1001.
The evolution of the Earth's structure and environment through geological time are explored from the rock and fossil record. Particular emphasis is given to the geological history of North America, especially Newfoundland and Labrador.
Prerequisite(s): EH1100 or MUN Earth Sciences 1000.

EH1200 Earth Science
This course is included in the Civil Engineering Technology program to provide the student with knowledge of the principles of geology, landform assessment, map and photo interpretation and GIS systems. These principles will be applied extensively in further courses such as Soil Mechanics, Hydrology, Urban Planning, and Highways Design. Students completing this course will have the ability to read and interpret aerial photos and maps to determine the acceptability of an area for uses such as an aggregate source, reservoir site, highway route, etc.

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.

EL1270 International Issues
This course introduces students to many of the concepts, issues, and organizations related to international development. It explores some of the politics of international development and encourages students to examine their own role in Canada and the world. The course is intended for students who wish to improve their knowledge of international development issues and politics, develop their international perspectives, and consider their role in the struggle for world development. Some students may wish to take the course prior to traveling internationally for further study, work, or leisure.

The course begins by introducing students to internet-based research, and then uses that medium together with class discussions, presentations, round-table discussions and a research project, to explore a variety of current major international issues. The course concludes with an exploration of how students can prepare for international travel for work, study or leisure. Some flexibility is built into the course as students may choose the focus of their research papers and presentations.

EL1420 French
Transferable to MUN French 1500.
This is an introductory course for students with little or no previous knowledge of French and for those who wish to review the basic vocabulary and structure. The course uses only the present tense and a 500-word vocabulary, and covers the most common situations of daily life.

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

EL1440 French
Transferable to MUN French 1502.
This course introduces ways of dealing with future and hypothetical "What if…?" situations, and cases where emotion and personal feelings color the issue. The work of composition and intensive vocabulary building continues, and students are expected to engage in more advanced oral practice.
Prerequisite(s): EL1430 or MUN French 1501.

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. The topics covered in this course are: introduction to environmental science, the inter-relationships of animals with the environment, air and water pollution, environmental management, toxins and the environment, and the role of the people within the environment.

EN1300 Environmental Technology
This course presents an overview of environmental concerns in the oil and gas industry. Both the effect of the industry on the environment and vice versa. This is a seminar course. All students will be expected to complete a minimum of five seminars.
Prerequisite(s): CM2200, CM2300

EN1520 Environmental Sampling Techniques
This course provides the student with the fundamentals of environmental sampling techniques pertaining to procedures, protocol, equipment, and standardized procedures. "Fate and Effects" monitoring will be used as a practical approach to determine the effects of pollution impacts on our environment.

EN1530 Water Quality
This course will introduce students to aspects of water quality as it is related to the local scene and an in-depth review of the Canadian Water Quality Guidelines. Students will study the processes involved in the treatment of water by various end users. The course also covers the issue of water supply for various users and the ways and means to meet those demands.
Prerequisite(s): EN1520

EN1540 Air Pollution: Interpretation, Analysis and Control
This course enables the student to make practical assessments of air pollution problems. Meteorology and its importance with respect to the formation, transportation, and dispersal of air pollutants are examined. Examination of the techniques and equipment necessary for the collection and analysis of airborne pollutants are discussed and reviewed.
Prerequisite(s): EN1530

EN1600 Environmental Site Assessment I
This course, oriented to the needs of the environment industry, introduces the student to the local, provincial and federal environmental legislation, regulations, guidelines and policies that apply to environmental site assessment. The site assessment process is introduced with emphasis on case studies involving a range of projects. It will focus on the CSA/CCME phased approach with projects including a Phase I assessment of a local facility.

EN1601 Environmental Site Assessment II
This course will introduce students to the concepts, principles, methods and techniques involved in reclamation of a site that has been abandoned, accidentally contaminated or required to clean up to conform to environmental standards. This comprehensive course will allow students to make use of course work previously completed in other courses to execute a site remediation plan and supervise contractors performing work, ensuring they complete the project according to the specifications in the contract.
Prerequisite(s): EN1600, EN2300, EN2700, GE1300

EN2120 Environmental Citizenship
This course is designed to foster environmental ethics and sustainable development. It provides an opportunity for students to discuss, debate, analyse and study current controversial issues related t 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.

● Available through @College Distributed Learning Service ⊗ Available through correspondence

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 sledges, drilling fluids, medical, industrial, and radioactive wastes.

EN2300 Environmental Law
This course, oriented to the needs of the environment industry, introduces the students to the local, provincial, and federal environmental legislation, regulations, guidelines and policies. The Canadian system of law and justice is introduced with emphasis on case studies involving environmental law. The legislative framework, court process, role of the prosecutor will be reviewed. An appreciation of the need for environmental protection, due diligence, personal and corporate liability, and liability will be addressed.

EN2320 Occupational Health & Safety
This course enables students to demonstrate knowledge of basic environmental principles and legislation and/or regulations governing the protection of the environment and workplace, together with understanding hazardous materials, how to control them, and learning the necessary skills to work safety.
Prerequisite(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
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 odours. 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.
Co-requisite(s): CH3720

EN2601 Environmental Abatement II
This is a combined theory/laboratory course dealing with water quality and wastewater treatment. The first part of the course focuses briefly on water quality: acidity, alkalinity, Ph, dissolved oxygen, biological oxygen demand, chemical oxygen demand, and hardness. Other parameters are explored; such as physical characteristics, dissolved gases, metals, organics and radionuclides. The second emphasis of the course is an introduction to knowledge and practices, theories and applications relevant to in-plant abatements, followed by the treatment of wastewater flowing from industrial settings. The characteristics of primary and secondary treatment processes, and plant operations will be studied. Sampling techniques, monitoring procedures and instrumental methods of analysis are covered in theory and laboratory sessions. The lab work includes testing for total solids, BOD, suspended solids, settling, and oxygen uptake. Current and innovative waste treatment processes are covered. Special attention is focused on provincial and federal Environmental Acts, in particular how these relate to economics and to employer and employee responsibilities.
Prerequisite(s): CH33720, FM2600

EN2700 Environmental Project Management
This course will enable the technician to effectively plan and implement a project based on environmental engineering principles. Practical applications will assist this goal through techniques and methods studied in this course.

EN3100 Environmental Engineering
This course is designed to acquaint the student with the major areas of pollution and control and mitigation. Students will gain an appreciation of the issues concerning sustainable development and acquire skills in the analysis and design of waste treatment systems. Basic issues in Environmental Engineering are examined. Pollution control, sustainable development and mitigation of the effects of pollution in air, on land and in the water.

EN3200 Environmental Impact Assessment
This course, oriented to the needs of the environment industry, teaches the students the basics of the environmental assessment procedure. The course carries on from the Environmental Law course where a broad overview of the legislation is presented. We review the assessment legislation in detail and develop the tools needed to perform an environmental impact assessment. We conclude the course by performing a case study to assess a small local project.
Prerequisite(s): EN1600, EN2300, EN2700
Co-requisite(s)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

EP1100 Entrepreneurial Studies I ●
This course is designed to develop an appreciation of small business, particularly as it relates to understanding the entrepreneurial process. The student will acquire the necessary skills and techniques to develop a sound business plan. Areas covered will include: market assessment, financing alternatives, organizational structuring, and planning techniques. In addition, a feasibility study will be required to establish the demand for a particular growth sector in the economy.

EP1110 Introduction to Business ●
This course is an introduction to Canadian Business. The areas covered include: Canada's business system, forms of business ownership, production, marketing, finance, personnel and labour relations, international business and small business ownership.

EP1160 Introduction to Business Functions
This is an introductory course to identify and describe the basic line functions of business, and introduce students to small business ownership and entrepreneurship. It will emphasize a basic knowledge of common business functions. 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. Students will also be introduced to the importance of the small business sector of the economy and the issues involved in owning your own business.

EP1170 Business Information Fundamentals
This is an introductory course in business information. It will build upon a basic knowledge of common business practices, processes and systems with emphasis placed upon the data and information needs of each functional area and how data is interrelated across business functions. This discussion will be extended to include electronic commerce.
Prerequisite(s): EP1160

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.

EP2200 Business Planning ●
In this course students will complete a comprehensive business plan. This includes choosing a hypothetical business, determining its product or service, preparing a market survey, finding a source of funding, and deciding a marketing strategy. The students will apply knowledge from previous terms in a practical manner.
Prerequisite(s): EP1100 and MR2100

EP2250 Small Business Development
To prepare the student to own and operate a small business. This course deals with secondary and primary research techniques and analysis. Students will be required to produce a research report establishing the demand feasibility for a particular growth sector in the economy. Topics for this report will be based on personal selection or on a mentoring process with a potential or present business owner. This plan is developed based on two prior years of Business Administration/Management education and is not an introductory level course.
Prerequisite(s): Business Administration/Management Year 1 courses, CM2300, EC1100, EC1200, MA1670

ER1100 Rigging
Upon successful completion of this course, the apprentice will be familiar with rigging equipment, the safe operation of this equipment, and the required inspection procedures needed to ensure safe operation.

ER1110 Hand Tools
Upon successful completion of this course, the apprentice will be familiar with the safe use and care of various hand tools associated with the electrical industry.

ER1120 Power Tools
Upon successful completion of this course, the apprentice will be familiar with the safe use and care of the various power tools associated with the electrical industry.

ER1130 Fasteners
Upon successful completion of this course, the apprentice will be familiar with the safe use and proper installation methods of the various fastening devices associated with the electrical industry.

ER1140 DC Theory
Upon successful completion of this course, the apprentice will be familiar with the direct current circuit theory foundation.

ER1150 Series and Parallel Circuits
Upon successful completion of this course, the apprentice will be able to determine the absolute values of devices connected in series, parallel or any combination of these two.

ER1160 Introduction to Building Codes
Upon successful completion of this course, the apprentice will be able to understand the legalities, layout, and how to use various codes involved with the construction industry.

ER1170 Voltage Drop & Power Loss
Upon successful completion of this course, the apprentice will acquire the knowledge necessary to readily calculate voltage drop and power losses in conductors.

ER1180 Single-phase Theory
Upon successful completion of this course, the apprentice will be familiar with the alternating current theory foundation needed to progress in the electrical industry.

ER1190 Three-phase Theory
Upon successful completion of this course, the apprentice will be familiar with the theoretical base required to work with electrical apparatus and devices which utilize a three-phase power source.

ER1200 Generic Blueprint
Upon successful completion of this course, the apprentice will be able to extract the required information from basic blueprints, specifications, and detail drawings.

ER1210 Electrical Blueprints
Upon successful completion of this course, the apprentice will be able to extract the required information from electrical blueprints, specifications, and detail drawings in order to complete an effective wiring system.

ER1220 Conduit, Tubing, and Fittings
Upon successful completion of this course, the apprentice will be acquainted with the methods of installing rigid conduit, PVC conduit and EMT along with the associated fittings used in these raceway systems.

ER1225 Conduit, Tubing and Fittings
Major Topics: Describe the various types of conduits and fittings and their applications and procedures for installation; Describe the terms associated with the bending of conduits and tubing; Describe the procedures for cutting, coupling, and termination methods used with rigid conduits; Describe sources of corrosion.
Prerequisite(s): ER1130, ER1160

ER1230 Conductors and Cables
Upon successful completion of this course, the apprentice will be able to determine the installation procedures, termination devices, and applications of the various types of conductors and metal-sheathed cables.

ER1240 Residential Wiring
Upon successful completion of this course, the apprentice will be able to install an effective and efficient wiring system in dwelling units.

ER1250 Protective Devices
Upon successful completion of this course, the apprentice will be able to describe the operating characteristics and installation procedures for protective devices rated at 750 volts or less.

ER1260 Principles of Operation of Transformers
Upon successful completion of this course, the apprentice will be able to describe the operating characteristics and installation procedures for transformers.

ER1270 Single-phase Service Entrance
Upon successful completion of this course, the apprentice will be able to install an overhead or underground single-phase service entrance.

ER1280 Three-phase Service Entrance
Upon successful completion of this course, the apprentice will have acquired the skills needed to efficiently install a three-phase service entrance.

ER1290 Distribution Equipment
Upon successful completion of this course, the apprentice will have acquired the skills needed to efficiently install distribution equipment.

ER1300 DC Motors and Controls
Upon successful completion of this course, the apprentice will be able to describe the operating characteristics and installation procedures for various types of DC motors and their associated controls.

ER1310 Electric Heating Systems
Upon successful completion of this course, the apprentice will be able to properly install electric heaters and related wiring.

ER1320 Low-voltage Temperature Control
Upon successful completion of this course, the apprentice will be able to select and install low voltage thermostats and relays.

ER1340 Conventional Fire Alarms
Upon successful completion of this course, the apprentice will be able to understand the basic parts of a fire alarm system, how these parts work together, and how to troubleshoot the system.

ER1400 Safety Measures in Construction
Upon successful completion of this course, the apprentice will understand the requirements and rights of Regulation 91-191 under the Occupational Health and Safety Act as applicable to the construction trades.

ER1710 Signal Transmission
Major Topics: Describe types of signal cable; Describe the installation and testing procedures for signal cable; Describe methods of wiring, calibration and maintenance of signal transducers; Describe the application and installation of intrinsic safety barriers; Describe the application and installation of surge suppressors; Describe the application and installation of mutiplexers; Describe the application and installation of radio telemetry systems.
Prerequisite(s): ER2155

ER1730 Electronics
Major Topics: Describe the basic fundamental characteristics of semiconductor materials; describe the characteristics of PN junction diode; describe the operation of single-phase rectifier circuits; describe the procedures used to calculate and measure power, current and voltage values in rectifier circuits; describe filter circuits for single-phase rectifiers; describe the operation of the zener diode; describe the operation of three-phase rectifiers; describe other diode applications; describe the features of the bi-polar junction transistor; describe the basic action of the transistor as a switch; identify special types of bi-polar junction transistors; describe the features of the silicon controlled rectifier (SCR); describe the action of the SCR in a DC circuit; describe the action of the SCR in an AC circuit; describe the characteristics of the bi-directional triode thyristor (triac); describe the features of the operational amplifier; describe the number system used in digital systems; identify the common binary codes; describe the operation of common logic gates.
Prerequisite(s): ER1190

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ER1740 On-Off Control
Major Topics: Describe the construction and operation of pushbuttons; describe the construction and operation of selector switches; describe the construction and operation of centrifugal switches; describe the construction and operation of limit switches; describe the operation/limitations and installation procedures of proximity switches; describe the operation and installation procedures of photo sensors and switches; describe the operation of temperature-operated switches; describe the methods of determining liquid levels; describe the methods used to determine the movement of air or liquids; describe the basic operation of general purpose relays; interpret wiring and schematic diagrams; describe the purpose and operation of common magnetic starters and controllers; describe the construction and operation of overload devices; describe control circuits used with starters; describe the installation and troubleshooting procedures for annunciator panels.
Prerequisite(s): ER1760

ER1760 Motors
Major Topics: Describe the construction of direct current motors; explain the basic differences between shunt, series and compound motors; explain the operating characteristics of various types of direct-current motors; describe the components of a typical single phase motor; describe the operating principles of single phase motors; describe the operating principles of a universal (series) motor; describe the operating principles of three-phase squirrel cage induction motors; describe motor testing devices.
Prerequisite(s): ER1190

ER1770 Process Analyzers
Major Topics: Describe pH system operations and their maintenance; describe ORP systems and their operation and maintenance; describe specific ion measurement systems and their operations and maintenance; describe conductivity measurement systems and their operations and maintenance; describe dissolved oxygen (D.O.) Analysis systems and their operations and maintenance; describe gas chromatography systems and their operations and maintenance; describe the operation and uses of X-ray analyzers; describe the ultraviolet absorption process analyzer; describe infrared process analyzers; describe oxygen analyzers; describe thermal conductivity gas analyzers; describe density analyzers; describe viscosity measuring system; describe consistency measuring system; describe nuclear radiation analytical instrumentation; describe refractive index analyzers; describe moisture/dew point analyzers; describe the sample conditioning systems for process analyzers; describe the installation procedures for process analyzers.
Prerequisite(s): ER2155

ER1780 Distributed Control System (DCS) Process Applications
Major Topics: Describe the procedures used to interpret DCS programs; describe the procedures used to configure a DCS system; describe the procedures used to employ advanced programming features; describe the procedures used to interpret boiler control application drawings; describe the features of fibre optic cables; describe the components and operation of a fibre optic communication system; describe the procedures for troubleshooting DCS network.
Prerequisite(s): ER2180

ER1790 PLC Process Applications
Major Topics: Describe procedures used to calculate input/output relationships; describe the procedures used to configure analog modules; describe procedures for troubleshooting analog modules; describe the procedure for troubleshooting PID control loops; describe the procedure for interfacing a PLC with an HMI system; describe the procedures for troubleshooting PLC networks.
Prerequisite(s): ER2180

ER2000 Raceways, Wireways, and Busways
Upon successful completion of this course, the apprentice will acquire the skills required to install "accessible after installation" means of conductor support or to install systems which provide a flexible power distribution system.

ER2010 Lighting and Controls
Upon successful completion of this course, the apprentice will be able to install various types of lighting systems, maintain them and troubleshoot problems associated with these systems.

ER2020 Single-phase Motors
Upon successful completion of this course, the apprentice will be able to discuss the operating characteristics and install various types of single-phase motors as well as install the control devices for these motors.

ER2030 Three-Phase Motors
Upon successful completion of this course, the apprentice will be able to select and install three-phase motors.

ER2040 Control Devices
Upon successful completion of this course, the apprentice will be able to select and install the various discrete control devices.

ER2050 Motor Starters and Controllers
Upon successful completion of this course, the apprentice will be able to select and install motor starters/controllers and their associated overload devices according to design criteria.

ER2060 Central Heating Units
Upon successful completion of this course, the apprentice will be able to properly wire and troubleshoot duct heaters and central heating units.

ER2070 Power Supply and Rectifiers
Upon successful completion of this course, the apprentice will be able to install, connect and troubleshoot power supplies and rectifiers.

ER2080 Power Electronic Control Circuits
Upon successful completion of this course, the apprentice will be able to troubleshoot problems with power electronic control circuits.

ER2090 Integrated Circuits
Upon successful completion of this course, the apprentice will be able to understand and troubleshoot problems with the logic functions provided by integrated circuits.

ER2100 Amplifiers
Upon successful completion of this course, the apprentice will be able to troubleshoot problems with amplifier circuits.

ER2110 Troubleshooting Techniques
Apply personal and equipment safety practices, apply conventional troubleshooting methods.

ER2115 Troubleshooting Techniques
Upon successful completion of this course, the apprentice will be able to use conventional troubleshooting methods.

ER2120 Application of Troubleshooting Techniques
Upon successful completion of this course, the apprentice will be able to use meters, devices and equipment to assist in troubleshooting.

ER2130 Communications & Data Systems
Upon successful completion of this course, the apprentice will be able to understand the basics of communication systems, installation and troubleshooting.

ER2140 Security
Upon successful completion of this course, the apprentice will be able to understand the basics of security systems, installation and troubleshooting.

ER2150 Analog Devices
Upon successful completion of this course, the apprentice will be able to understand the terminology, units of measurement, and operating principles of measuring devices and instruments commonly found in processing plants.

ER2155 Process Measurement
Major Topics: Define terminology associated with pressure measurement; describe procedures used to perform calculations that relate to pressure measurement and the properties of fluids; explain the principles involved in pressure measurement equipment; identify and compare common applications and perform calculations using various differential pressure methods; describe pressure measurement procedures to verify proper operation within an acceptable tolerance of error; describe the mounting details of pressure and differential pressure instruments; explain the accepted terminology and concepts of theory for the measurement of temperature; describe the measuring of temperature in an industrial process; describe the considerations and limitations when installing temperature measuring elements and devices in an industrial process; explain the basic concepts and terminology used in industrial flow measurement; determine the considerations, limitations and procedures when installing flow measuring devices in a process; describe procedures used to calculate calibration points (curves) for flow measuring instruments; explain the theory for the measurement of level; describe the various methods of measuring levels in an industrial process; describe the configuration of smart transmitters and their applications; describe the maintenance and calibration of recorders and indicators; describe calibration standards; describe the importance of record keeping procedures.
Prerequisite(s): ER1150

ER2160 Solid State Drives
Upon successful completion of this course, the apprentice will be able to properly install and maintain solid state controls for motors.

ER2170 PLC Fundamentals
Upon successful completion of this course, the apprentice will be able to understand what a PLC is, what it can do, where it is used, and how it is installed as well as how to troubleshoot basic problems.

ER2180 Programming PLC's
Upon successful completion of this course, the apprentice will be able to enter a set of operating instructions in a programmable controller.

ER2190 Process Control
Describe the basic control concepts; Describe the functional structure of feedback control; Describe sensors and transmission systems; Describe the controllers used with process control; Describe process dynamics; Describe tuning control systems; Describe cascade, ratio, and dead time control; Describe digital control; Describe the characteristics of radioactivity and radioactive devices used in the process industries; Describe the procedures involved in humidity measurement and how it affects control process.
Prerequisite(s): ER2150

ER2195 Process Control
Upon successful completion of this course, the apprentice will be able to apply the basic theoretical concepts of automatic process control.

ER2200 Distributed Control Systems
Upon successful completion of this course, the apprentice will be able to operate, install, maintain, and understand the applications of distributed control systems.

ER2210 Pneumatic Control Systems
Upon successful completion of this course, the apprentice will be able to install, maintain, and understand the applications of instrument air supply systems and equipment.

ER2215 Pneumatic Systems (Instrument Air Supply)
Major Topics: Identify and interpret pneumatic drawings and sketches; describe the parts and characteristics of various types of compressors and associated equipment; describe the procedures used to install conditioning devices in instrument air supply systems; describe the procedures used to select and install tubing and fittings; describe the procedure used to install pressure instruments; describe the procedure used to install special applications; describe the procedures used to detect leaks in tubing runs.

ER2220 Servomechanism
Upon successful completion of this course, the apprentice will be able to select and install final control elements in a loop operation.

ER2225 Control Valves
Major Topics: Define control element terminology; describe the different types and application/function of final control elements found in an industrial process; describe the accessories used with control valves; describe the procedures for installing and maintaining control valves; describe the calibration of smart valves and positioners; describe American National Standards Institute (ANSI) and American Society for Testing and Materials (ASTM) standards as they apply to control valves.
Prerequisite(s): ER2155

ER2230 Hydraulic Circuits and Control
Upon successful completion of this course, the apprentice will be able to troubleshoot hydraulic system problems.

ER2235 Hydraulic Systems
Major Topics: Use hydraulic formulas to solve problems; identify the components needed to make up a basic hydraulic system; describe the operation of various plumbing components used in hydraulic systems; describe the operation and purpose of various valves used in hydraulic systems; describe the use of schematic diagrams in troubleshooting systems; describe preventative maintenance procedures; describe fluid maintenance procedures.

ER2240 DC Generators & Motors
Upon successful completion of this course, the apprentice will become familiar with the operating characteristics and installation procedures of various types of DC generators.

ER2250 AC Generators
Upon successful completion of this unit of instruction, the apprentice will become familiar with the operating characteristics and installation procedures of various types of AC generators.

ER2260 Emergency Stand-By Units
Upon successful completion of this course, the apprentice will be familiar with the equipment and devices used in the installation of an emergency stand-by system.

ER2270 Emergency Lighting Systems
Upon successful completion of this course, the apprentice will be familiar with the operating characteristics and installation procedures of various types of emergency lighting units.

ER2280 High-Voltage Breakers & Starters
Upon successful completion of this course, the apprentice will be able to describe the construction and manufacture of high voltage breakers as well as install and maintain them.

ER2290 High Voltage Splices and Terminations
Upon successful completion of this course, the apprentice will be able to describe the construction and manufacture of high voltage cables as well as apply the proper methods and materials used when splicing and terminating such cables.

ER2300 Distributed System Conditioning
Upon successful completion of this course, the apprentice will be able to describe the operating characteristics of electric power that affect the performance of electrical equipment.

ER2310 Furnace Control
Upon successful completion of this course, the apprentice will be able to install safety controls, comfort controls, and wiring to fossil-fuel residential central heating units.

ER2320 Boiler Control
Upon successful completion of this course, the apprentice will be able to install and troubleshoot controls on boilers.

ER2325 Boiler Control
Major Topics: Describe boiler basics and the steaming process; describe combustion of fuels, excess air and products of combustion; describe the steam supply system; describe the firing rate demand for utility and industrial boilers; describe main steam and reheat steam temperature control; describe boiler interlocks; describe feedwater supply and boiler water circulation systems; describe feedwater control systems; describe boiler draft systems; describe the measurement and control of boiler draft; describe the measurement and control of combustion air flow; describe flue gas analysis trimming of combustion control systems; describe fluid and solid fuel burners; describe burner management and flame safety interlocks; describe combustion control systems.
Prerequisite(s): ER2190

ER2330 Heat Pumps
Upon successful completion of this course, the apprentice will be able to select and install heat pumps.

ER2340 Energy Management
Upon successful completion of this course, the apprentice will be able to understand what an energy management system is, what it can do, where it is used, and how it is installed as well as how to troubleshoot basic problems.

ER2350 Electric Surface Heating Units
Upon successful completion of this course, the apprentice will be able to select and install electric surface heating units.

ER2360 Refrigeration and AC Controls
Upon successful completion of this course, the apprentice will be able to install and troubleshoot control circuits on refrigeration and air conditioning systems.

ER2370 Precipitator and Dust Collection Systems
Upon successful completion of this course, the apprentice will be able to troubleshoot problem precipitators and dust collection systems as well as provide regular maintenance to these devices.

ER2380 Vibration Analysis
Upon successful completion of this course, the apprentice will be able to analyse and correct vibration problems with rotating machinery.

ER2390 Fibre Optics
Upon successful completion of this unit of instruction, the apprentice will be able to understand the basics of fibre optics and how to install and terminate cables.

ER2400 HVAC Systems
Upon successful completion of this unit of instruction, the apprentice will be able to understand the operation of a Heating, Ventilating and Air Conditioning system installed in buildings.

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ES1300 Manufacturing Processes I
This course is designed to give the beginning student a broad understanding of the scope of industrial manufacturing processes, with an emphasis on pulp and paper, mineral processing, petroleum production, and petroleum refining. The size, socioeconomic value and product range of each industry specific terminology, manufacturing methods, and the technologies used in product manufacture. Attention is given to the economics of each industry, challenges facing each industry, and future direction. Finally, students discuss the environmental abatement initiatives associated with the different industries and processes.

ES1301 Manufacturing Processes II
In this course students are introduced to the series of processes that convert wood to pulp. Before going into the details of preparing wood for pulping, a brief study is made of the storage of 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.

ES2300 Manufacturing Processes III
The purpose of this course is to present the students with an opportunity to follow the logical progression in the paper making process, starting with the wet-end processes and progressing to the finished product. Wet-end topics include pulp selection, stock preparation, stock proportioning, use of additives, approach systems, forming fabrics, sheet formation, stock dewatering, and wet-end chemical processes. Press section topics include press configurations, press roll designs and materials, and press felt design. Aspects of dryer operation encompass condensate removal, steam control, dryer ventilation, heat economy, hood designs and breaker stacks. After the dryer section, the student investigates unit processes and product qualities related to calendering, super-calendering, winding, coating, sheeting, wrapping and storage. This course also deals with the recovery and recycling of secondary fibres such as waste corrugated containers, newsprint and high quality papers. Finally, sampling and testing methods are covered. Measurements include basis weight, burst, tensile and tearing strengths, smoothness, porosity, stiffness, brightness, opacity, and colour measurements.
Prerequisite(s): ES1301

ES2301 Manufacturing Processes IV
In this course, the students are introduced to petroleum refining. The course begins with a history and overview of the oil and gas industry, including oil and gas production, petroleum refining, and the petrochemical industry. The focus of the course is on petroleum refining processes. Topics include identifying the products produced, types of feed stock, physical and chemical properties of the petroleum produces, distillation, conversion, enhancement and blending. Distillation process topics cover fractionation principles as it applies to atmospheric and vacuum distillation. Conversion processes include fluid catalytic cracking, visbreaking and hydrocracking. Enhancement processes focus on catalytic reforming, isomerization, sweetening (Merox system), and alkylation. Students also investigate the blending processes required to produce finished products (i.e. unleaded gasoline). All processes explored will include basic concepts, an overview of the applicable process chemistry, equipment, process and instrumentation diagram, process flow diagram, feed and product characteristics, and emergency procedures.

ES3300 Manufacturing Processes V
The purpose of this course is to introduce the student t 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 tang 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

ET1100 Electrotechnology
This is an introductory course in electrical theory covering the basic concepts of electricity, circuit analysis and magnetism. The laboratory work is designed to develop skills in the construction of electrical circuits, and the use of electrical measuring instruments to reinforce theoretical concepts.

ET1101 Electrotechnology
This is a continuation of the Electrotechnology course taken in the first semester. It covers the basics of A.C. theory and the application of this to solve circuits containing resistance, capacitance and inductance. An introduction to transformers and polyphase A.C. circuits is also included
Prerequisite(s): ET1100

ET2100 Electrotechnology
This course covers advanced topics in A.C. and D.C. circuit analysis as well as an introduction to D.C. motors and generators. It will provide the necessary background for students to enter second year Electrical and Electronics programs.
Prerequisite(s): ET1101, MA1101

EY1200 Ecosystem Ecology
This course investigates the ecological relationship of a variety of ecosystems that occur in Newfoundland and Labrador. This course will examine the ecological components and focus on identification of these components and the structure, function and adaptations of specific organisms.
Prerequisite(s): BL1400

EY1420 Northern Ecosystems Ecology
This course deals with the analysis of northern ecosystems.

EY1440 Traditional Ecological Knowledge
This course will provide students with an understanding of traditional environmental / ecological knowledge and the differences between scientific biophysical knowledge and TEK. It will identify common nomenclature for flora, fauna and land forms in Labrador and provide an overview of their cultural significance and help develop an understanding of the cultural significance and uses of TEK and its relationship to environmental assessment.

EY2110 Basic Ecology
This course focuses on basic ecological principles and concepts, ecological sampling techniques and field and laboratory exercises carried out in an appropriate environment. It involves significant and relevant field work, as well as the preparation of a report on terrestrial and aquatic ecosystems, populations, species interactions and ecological communities.

EY2210 Silvics/Dendrology I
This is an introductory course to trees and shrubs both native and introduced to Newfoundland and Labrador. Species identification, classification and distribution are studied in detail. The influence of the environment upon the growth and reproduction of trees, stands, and forests are explored. Forest site analysis and classification are introduced and studied in detail.
Prerequisite(s): BL1120

EY2211 Silvics/Dendrology II
This is an advanced course of study in Forest Ecology. Forest site analysis and classification are studied in detail. The influence of forest genetics, the physical and biotic environment, upon the forest ecosystem are covered. Native and exotic tree/shrub identification is a key component within the course.
Prerequisite(s): EY2210, FR1330
Co-requisite(s): FR2360, FT1401

EY2510 Population Ecology
Concepts of population dynamics and modelling and applications in fish and wildlife management.
Prerequisite(s): BL1400, RM1401, RM1500

FH1100 Nutrition ●
This is an introductory course in basic nutrition. The course encompasses 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 of macronutrients are also included. Dietary Guidelines for Healthy Canadians, Recommended Nutrient Intakes, and Canada's Food Guide are presented.

FH1101 Basic Nutrition II ⊗
This course explores the general nutrition needs during pregnancy, lactation, childhood, adolescence, adulthood, and old age. General physiological needs for each life stage are discussed, and resources which describe the specific nutrition needs are identified. Skills required to plan menus for each life stage are introduced.
Prerequisite(s): FH1100

FH1110 Nutrition I ⊗
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 infants and toddlers.

FH1111 Nutrition II - Childhood Nutrition ⊗
This course examines the nutritional needs of growing children. The importance of establishing future eating habits is emphasized as well as a discussion of the influences of the nutritional choices for children. Students will also be involved in hands-on experience in the kitchen, learning food preparation and handling, menu planning and budgeting procedures.
Perquisites: FH1110

FH1200 Principles of Physical Activity
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. The course is designed for potential fitness leaders and active living programmers.

FH1230 Physical Activity Programming for Older Adults
This course provides an introduction to physical activity programming for the older adult. It is designed to enable students to plan and evaluate a variety of programs, based on current knowledge and trends.

FH1310 Health, Safety, Wellness ● ⊗
This course will address the attitudes and knowledge a caregiver must have in order to administer to health and safety needs of young children. Also, wellness will be addressed from a caregiver perspective.

FH2100 Therapeutic Nutrition I
This course consists of a study of diet as it pertains to modification of normal nutrition according to particular disease conditions. Practice in diet writing and marking menus for specific diets is emphasized as it relates to the treatment of illness.
Prerequisite(s): FH1101

FH2101 Therapeutic Nutrition II
This course is a continuation of Therapeutic Nutrition I. The student, through diet therapy, will study disease conditions and the treatment of illness. An introduction to diabetes and the treatment of diabetes in regard to nutrition counselling will be covered.
Prerequisite(s): FH2100

FM2100 Fluid Mechanics I
This is an introductory fluid mechanics course designed to develop both the knowledge of the laws and principles governing fluid mechanics and the ability to apply this knowledge in analyzing related engineering applications. The course also provides a base for advanced courses in piping design, ducting design, and fluid power systems.
Prerequisite(s): PH1100

FM2200 Mechanics
This is a foundation course that provides the fundamental concepts required for the understanding and development of basic engineering sciences, and builds on the principles developed in Physics PH1100. This first course in mechanics concentrates on the all important concepts of statics.
Prerequisite(s): MA1100, PH1100

FM2201 Mechanics (Dynamics)
This course in mechanics introduces the fundamental concepts of dynamics and builds on the basic principles of statics presented in Mechanics of Solids. This course is a basic requirement 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, work and energy, mechanical vibrations.
Prerequisite(s): CF2540

FM2300 Fluid Mechanics
This course is designed to develop knowledge of the laws and principles governing fluid mechanics and the ability to apply this knowledge in analyzing petroleum engineering applications in areas such as drilling technology, production engineering and facilities engineering, which require an in-depth understanding of pipe flow.
Prerequisite(s): MA1101, PH1101

FM2320 Fluid Mechanics
The student will learn the theory and solve problems pertaining to hydrostatic pressure, manometers, the Bernoulli Equation, fluid flow, and head loss. The student will apply this knowledge in the laboratory and in the selection of pipes, piping systems, and pumps. After obtaining an understanding of fluid mechanics fundamentals, the student uses this knowledge to investigate closed hydraulic systems and pneumatics. The associated hydraulic equipment and industrial applications are explored. Pneumatic principles, and pneumatic systems, as used in an industrial plant are introduced.
Prerequisite(s): MA1101, PH1101

FM3100 Fluids (Hyd./Pneu.)
This is an intermediate level course designed primarily for students in the Electromechanical Technician Program.
Prerequisite(s): PH1101

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 and the underlying principles of mechanics of machines and strength of materials demonstrated, thus enabling the student to pursue the goal of the design of machinery supplemented by practical manufacturing exposure and experience.
Prerequisite(s): CF2540

FM3220 Machine Design
This course extends generic machine design concepts presented in FM3200 by introducing students to typical industrial application components used for machine design. Emphasis is placed on students being able to follow accepted industry practice in the design, specification and selection of standard machine design components.
Prerequisite(s): FM3200

FN1100 Personal Finance
This course is an introduction to the basic principles and concepts of personal finance. The course is organized into three parts; financial planning, financial security, and credit. In Part 1, financial planning, the student learns how to make financial plans for saving and spending; the functions of wills; and the basics of the taxation system. In Part 2, financial security, the student examines economic risks and ways to minimize them. In Part 3, credit, the student explores the complexities of consumer credit.

FN2110 Business Finance
This course is an introduction to the complexities of business financial management. Specific topics will include financial analysis and planning, working capital management, capital budgeting, and long-term financing. Financial considerations will be both short term and long term and will integrate concepts from Accounting, Statistics, and Economics.
Prerequisite(s): AC2240

FR1230 Forest Fire Management
This course is an introductory course and will provide the student with basic information on activities concerned with the protection of forests from fire.
Co-requisite(s)s: FT1400

FR1330 Natural Resource Measurements I
This course is designed to introduce basic principles, skills and techniques in the sampling and measurement of natural resources with emphasis on forests and wildlife. Students will become competent in the use of the various tools and equipment used in the measurement and evaluation of natural resources. The application of map and compass, GPS, and aerial photographs through field exercises, in the evaluation of natural resources, is a key component of the course.
Prerequisite(s): SU1150 , MA1100
Co-requisite(s): SU1550

FR1331 Natural Resources Measurements II
This advanced level course in the principles of natural resources measurements places emphasis on the design, conduct and application of a variety of survey methods to access forest characteristics. The application of statistical analysis to timber cruises, forest inventories, growth prediction and site classification is the central focus. The measurement of forest products is addressed, as is the assessment of non-timber values of the forest ecosystem.
Prerequisite(s): FR1330, MA1670, FT1400
Co-requisite(s)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 studies.

FR1550 Environmental Impacts of Forest Practices
To analyse 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

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layout a forest road.
Prerequisite(s): SU1710, FT1400
Co-requisite(s)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 hydrogical processes and principles in general, through detail analysis of the water cycle in particular, and finally to linking of theory to practical applications. The applied aspects of this course center on field and office methodology use to assess water resources from the perspective of input, storage and output at the watershed level. The relationship between water, forests and humans is a central theme.
Prerequisite(s): FR1330

FR2350 Forest Entomology - Pathology
The study of the major forest enemies (excluding fire) of North America. Emphasis will be placed on insects which damage or benefit the forest and on biotic and biotic causes of forest disease. Prevention and protection measures of the above are covered. Field collection and diagnosis are emphasized, stressing the importance of signs leading to early detection.
Prerequisite(s): EY2210 , FR1330

FR2360 Silviculture
A study of a wide range of silvicultural practices as applied to the establishment and tending of forest stands. This includes the design; conduct and monitoring of operational programs in planting, seeding, site preparation, tree seed procurement and improvement and nursery production as well as stand manipulation (i.e. thinning, pruning, and chemical tools). The identification of problem sites, budget preparation etc., are prepared.
Prerequisite(s): FR1330
Co-requisite(s)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 techniques and learn identification and life history.
Prerequisite(s): FR1330

FT1240 Surveying Field Camp
This is a one week field camp to immerse the student in the field applications of Geomatics data gathering, mensuration and presentation. The work is done in a group setting where team play is essential for successful completion of assigned projects. The planning, execution, checking and successful completion of the group projects is emphasized.
Prerequisite(s): SU1310, SU1500

FT1250 Hydrographic 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): SU1500; SU1311; SU1540; SU2320
Co-requisite(s): SU1541; SU3300; SU3500

FT1320 Surveying Camp (Interim)
This course has been designed to provide the student enrolled in the Civil Technology program with the opportunity to further their skills in construction surveying. Since surveying is an important job entry skill, students who have a high degree of competency in this area will have a greater chance of obtaining that all important first job.
This course will be a further application of the previous two courses in surveying. Actual work in the field will give the student greater experience in the area of construction surveying. The student will be exposed to the skills required to become competent in the area of building and highway layout. They will work in the area of building grades, location and layout; road grades, super-elevations, and horizontal and vertical curves.
Prerequisite(s): SU1210

FT1330 Construction Camp
This course has been included in the second technical intersession of the Civil Technology program to introduce the student, in a hands-on environment to various construction processes. In addition the course will provide the student with an insight into on-site supervision of construction.

FT1400 Forestry Field Camp
A two week field camp is conducted at the end of the intersession semester. This 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 I, SU1710
Co-requisite(s): FR1230

FT1401 Forestry Camp/Tour
This five day field tour is designed to insure that students have an opportunity to visit and investigate a number of special forestry facilities and operations across the 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)s: EY2211, FR2360 , FR1560

FT1410 Fish and Wildlife Field Camp
A two-week field camp conducted at the end of the intersession semester. This camp is designed to enable students to take part in major practical exercises using standard practices of measurement and data collection in an operational setting. Throughout the two-week period the proper care of equipment, safety practices, and basic skills such as map interpretation, compassing, vegetation identification, trapping, and other wildlife techniques are emphasized. Major topics reinforce prior learning from the second semester and intersession.
Prerequisite(s): FR1330, SU1550
Co-requisite(s)s: RM1400, RM1500

FT1430 Fish & Wildlife Camp II
A one-week camp conducted during the third semester. This camp is designed to enable students to participate in research/project being undertaken by a major external agency (National parks, Canadian Forest Service, Provincial Wildlife and DFO). Students are involved in the accumulation of field data for these projects.
Co-requisite(s)s: RM2200

FT1600 Drilling Camp
A "Hands on Course" for Petroleum Drilling located at Seal Cove Campus. The students work on a land rig learning the actual drilling operation, equipment and safety procedures.

FV1100 History of Cinema
An examination of the history of cinema from its beginnings to the present. Through lecture, observation, and critical examinations, 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 electrical connections. Reading layouts, schematics, testing, troubleshooting, and practical set ups and light "gags".
Prerequisite(s): FV1200
Co-requisite(s): FV1240

FV1300 Language of Cinema
This course will introduce students to the Grammar of cinematic language. Through lecture, discussion, historical survey and practical analysis students will gain an understanding of the way films are planned

and assembled to present a coherent narrative.
Prerequisite(s): FV1100
Co-requisite(s): CM1550

FV1320 Advanced Digital Video
In Advanced Digital Video students will become familiar with professional standard video cameras and camera accessories associated with cinematic production techniques. Through practical exercises students will gain a working knowledge of the capabilities, limitations and technical issues of modern digital video production.
Prerequisite(s): MM2300
Co-requisite(s): FV1300

FV1400 Avid Editing
This course will introduce students to the practical exploration of editing options and theoretical knowledge required when using an avid suite to edit raw footage.

FV1500 Certifications
Certifications will be a collection of short form courses that will supply a battery of sanctioned certificates required for film production union referral status.

FV2200 Documentary Film Production
This "project oriented" course will introduce students to the demands of development, funding, distribution and small unit / field crew film making normally associated with Documentary film production.
Prerequisite(s): FV1320
Co-requisite(s): FV1400

FV2220 Final Film Production
In Final Film Production students will finalize a show reel illustrating their acquired skills.
Prerequisite(s): FV1220

FV2300 Cinematography
This course will cover the Theoretical issues and practical application of the craft of cinematic photography and lighting.
Prerequisite(s): FV1300
Co-requisite(s): VA1400

FW1300 Field Work I ● ⊗
Students have the opportunity to experience a licensed early childhood education program in action which allows them to begin to link theory to practice. In this first supervised placement, the focus will be on students initially shadowing specific members of the centre's staff in order to become familiar with the role of the early childhood educator and the program itself. Students will practice observing, interacting and responding in positive ways to children. Gradually they will be expected to determine individual children's interests and begin to plan developmentally appropriate activities that relate to specific courses. In addition to the weekly and block placement, students will participate in a weekly fieldwork seminar.

FW1301 Fieldwork II
During the second supervised placement in a licensed early childhood centre, the focus is on students participating fully and assisting with all aspects of the program as it relates to children and families. The focus throughout is making connections between theory and practice. It is expected that confidence in interacting with and guiding children's behaviour will increase. Students will begin to plan and implement a variety of developmentally appropriate activities and materials for individual children with the guidance of faculty and centre staff.
Prerequisite(s): EE1140 and FW1300

FW1440 Field Placement I
This course consists of a four-week placement with a community agency in a voluntary capacity. The instructor will assist each student in securing a placement with an agency which can meet student's personal interests and goals. In conjunction with a field supervisor (who is normally an employee in the placement agency) the instructor supervises and evaluates the student's progress.
Prerequisite(s): One Communication Skills course, SD1130, four of the seven courses in semester 2 including CS1110, and in clear academic standing

FW1441 Field Placement II
This course consists of a seven-week placement with a community-based agency in a voluntary capacity. The instructor will assist each student in securing a placement with an agency which can meet student's personal interests and goals. In conjunction with a field supervisor (who is normally an employee in the placement agency) the instructor supervises and evaluates the student's progress.
Prerequisite(s): FW1440

FW1700 Supervised Fieldwork Experience I
Supervised fieldwork experience is an integral part of the total curriculum and constitutes a basic preparation for a wide range of professional practice.

FW1701 Supervised Fieldwork Experience II
Supervised fieldwork experience is an integral part of the total curriculum and constitutes a basic preparation for a wide range of professional practice. An extension of Supervised Fieldwork Experience I but agency will vary.
Prerequisite(s): FW1700

FW2300 Fieldwork III
During the third supervised placement in a licensed centre, the focus is on students working in teams along with the centre staff to implement the centre's program. Students will continue to link theory to practice as they plan activities for children in small groups and based on the interests of the individual child. With the guidance and assistance of the centre's staff, students will modify and adapt materials so as to include children with special needs in activities and routines. It is also expected that students will collaborate with the staff of the centre to implement the centre staff's specific plans for individual children, including those with challenging behaviours.
Prerequisite(s): FW1301

FW2301 Fieldwork IV
During the fourth supervised placement in a licensed centre the focus is on students working in teams to take responsibility for all aspects of the day to day operation of the Early Childhood Education program. Students will continue to link theory to practice as they plan and implement the routines, schedule, program, and interactions with parents. They will collaborate with staff of the centre to prepare and implement plans that meet the needs of all children, including those with special needs.
Prerequisite(s): FW2300

FW2700 Supervised Fieldwork Experience III
The purpose of this supervised fieldwork experience is to provide experience in administration practices and procedures through placement in community based agencies/organizations. The course is designed to provide the student with an opportunity to gain specific experience in the many aspects of recreation management and administration.
Prerequisite(s): FW1701

FW2701 Supervised Fieldwork Experience IV
The purpose of this supervised fieldwork experience is to provide experience in administration practices and procedures through placement in community based agencies/organizations. The course is designed to provide the student with an opportunity to gain specific experience in the following: financial management, staff and public relations, program development, organizational and government structures and functions, and facility operations.
Prerequisite(s): FW2700

GA1110 Graphic Arts History/Typography
This introductory course provides a clear understanding of the history of the Graphic Arts industry. The historical evolution of typography is studied from its beginning to its application in today's industry.
Co-requisite(s): MC1180

GA1160 Graphic Arts Problem Solving
A practical relevant mathematics course for Graphic Arts Technology, with direct application of relevant mathematics concepts. Topics emphasize problem solving skills with practical application to printing and design.

GA1200 Post Press Operations I
This is an introductory course that provides the student with an understanding of the background and methods used for finishing and related activities that apply to graphic arts.

GA1201 Post Press Operations II
This course provides the student with an understanding to the background and methods used for related activities that apply to graphic arts.
Prerequisite(s): GA1200

GA1340 Film Imposition I
This is a basic film assembly course that will introduce the student to methods and procedures used plus the use of the required tools.

GA1410 Page Layout I
This is an assembly course that provides the student with the basic technique of assembling visual elements. It is primarily a manual course that provides a foundation for electronic page layout techniques.
Co-requisite(s)s: GA1110; MC1180

GA1411 Page Layout II
This is an electronic page assembly course that provides the student with the techniques of page layout software on the computer. The emphasis is on the flexibility of the page layout software as it applies to design and production for graphic arts.
Prerequisite(s): GA1400; MC1180

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GA1510 Digital Imaging I
This is a preparatory course in digital imaging that will give the student the foundational skills required to use equipment and software to record, store and manipulate digital images. The emphasis will be placed on an applied knowledge and understanding of both hardware and skills required for graphic arts.
Prerequisite(s): MC1180; GA1160; GA1110

GA1511 Digital Imaging II
This course is designed to teach the student fundamentals of scanning and image manipulation. A strong emphasis is placed on both the scanner image manipulation software as it is used on MacIntosh and PC/Windows Computers.
Prerequisite(s): GA1510; GA1820

GA1560 Publication Design
This advanced course is designed to further develop students' abilities in publication design. Students will learn how to use industry standard illustration, digital imaging and page layout software to develop long, full colour publications. Emphasis will be placed on developing industry standard skills in design, layout, illustration and typography, as well as developing efficient production skills, students may elect to design and produce a publication on one of several topics.
Prerequisite(s): Successful completion of all first-year graphic design courses, as well as VA2240 Graphic Design III.

GA1600 Lithography I
This is an introductory course in the basic operation of small offset duplicators.

GA1611 Lithography II
This is an intermediate course in the application of the principles and practices of the offset press.
Prerequisite(s): GA1600

GA1630 Illustration I
This course is designed to introduce students to the basics of illustration as it is used in the Graphic Arts industry, and to help student s develop their traditional and digital illustration skills. Observation and experimentation with current traditional and digital graphic arts drawing materials, and an emphasis on graphic arts projects are the focus of this course.
Prerequisite(s): MC1180

GA1631 Illustration II
This course will further develop students' illustration skills using vector-based drawing software current in the Graphic Arts industry. An emphasis will be placed on complex projects that incorporate illustration, typographic and layout skills.
Prerequisite(s): GA1160; VA1230; GA1110; GA1410; MC1180; GA1630

GA1800 Multimedia
This course is designed to develop students understanding of and ability in developing multimedia presentations at an introductory level. Students will develop an interactive multimedia presentation incorporating visuals, audio and text elements using image editing and multimedia presentation software. Students may elect to develop a multimedia presentation for a number of possible clients, including those that specialize in the marketing of products, services or ideas.
Prerequisite(s): Successful completion of first-year Graphic Design courses.

GA1820 Colour Theory for Graphic Arts
This introductory course provides students with the skills necessary to effectively manage and use colour in a digital graphic arts environment. It introduces students to effective colour management principles on both Apple MacIntosh and PC platforms, and covers colour systems and translations between colour gamuts in detail. The course also provides the student with a clear understanding of the elements and principles of colour theory, and how colour can be used to create more effective images in graphic arts projects.
Prerequisite(s): MC1180

GA1840 Digital Output & Calibration
This course teaches the skills necessary for the student to output files to various digital devices such as: computer to film recorder, computer to polyester plate, and various digital printers. For optimum output conditions, each device requires maintenance and calibration.
Prerequisite(s): GA1510; GA1611 and completion of year one.

GA1870 Business Practices for Graphic Design
This course is designed to develop students' understanding of common business practices in the Graphic Design industry. A specific focus of the course is to introduce students to the business requirements of freelance graphic design work, including pricing, estimating, specification-writing, subcontracting, contract and copyright law, time management, taxation and self-promotion.
Prerequisite(s): Successful completion of all first year Graphic Design courses.

GA1875 Business Practices for Graphic Production
This course is designed to introduce the students to common business used in Graphic Production. Students will be introduced to all aspects of competitive job pricing as it applies to a variety of different types of work.
Prerequisite(s): Completion of all first year courses.

GA1930 Introduction to Darkroom
This course will introduce the student to basic principles and procedures of the darkroom.

GA2230 Digital Printing
This course will give the student hands on skills in printing to digital devices. The demand for short run, full colour documents and on-demand printing requires the student to be proficient in these skill areas.
Prerequisite(s): Completion of semesters 1 through 4.

GA2360 Production for Graphic Designers
This course is designed to provide students with the skills necessary to prepare digital files for graphic design projects for production. Students will learn how to prepare electronic files for delivery to printers or service bureaus. An emphasis of the course is teaching students how to design work to avoid problems in the production process.
Prerequisite(s): Successful completion of all core Graphic Design courses in semesters 1 through 4, and the first Intersession.

GA2410 Page Layout III
This is an advanced electronic page assembly course that provides the student with the techniques of page layout software on the computer. The emphasis will be on advanced features of the software plus the exploration of different types of software for page layout.
Prerequisite(s): GA1410; GA1411; MC1180 and completion of year one.

GA2460 Pre-Press Production Practicum
This is an advanced practical course that will help the student gain experience by combining all of their skills and applying them to practical jobs. An emphasis will be placed on production speed quality. It is intended that this course will bridge the gap between the work term and entry to the job market.
Prerequisite(s): Completion of year one; GA1511; GA1611; GA2410; GA1840; GA2610; GA1201; WT1300

GA2470 Offset Press Production Practicum
This is an advanced practical course that will help the student gain experience by combining all of their skills and applying them to practical jobs. An emphasis will be placed on production speed quality. It is intended that this course will bridge the gap between the work term and entry to the job market.
Prerequisite(s): Completion of year one; GA1511; GA1611; GA2410; GA1840; GA2610; GA1201; WT1300

GA2560 Production Workflow & Quality Control
This is an advanced course that delivers the skills required to develop workflow methods while maintaining quality control. These methods will be achieved with the help of computer software and workflow devices developed by the student. Students will develop estimate sheets, quotation sheets, job dockets, and tracking system.
Prerequisite(s): GA1611; GA2610; GA1840

GA2610 Lithography III
This is an advanced course in the application of principles and practices of the offset press.
Prerequisite(s): GA1611

GE1120 Geology
This is an introductory geology course designed to give the student a solid foundation on which to pursue the fundamentals of the science of geology. Topics covered include mineralogy, mineral identification, rock classification, and the economics of mineral resources. Class lectures are supplemented by extensive lab work where students study and examine minerals; and igneous, metamorphic, and sedimentary rocks.

GE1200 Geology
This is an introductory course in physical geology designed for students in the Geomatics program. It covers origin, distribution and deformation of igneous, metamorphic, and sedimentary rocks; plate tectonics; structure; weathering and erosion. Laboratory work includes the study of minerals and rocks with emphasis on identification and classification, topographic maps and profiles.

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
Continuation of Geology I. Geologic processes occurring in and on the earth; structural geology, plate tectonics. Laboratory work; topographic maps and profiles; introduction to construction of sub-surface geology maps and sections. Field trips to places of geologic interest on the Avalon Peninsula.
Prerequisite(s): GE1500

GE2400 Physical Geology (Geomorphology)
This course emphasizes the external and internal processes of the earth. The external processes of geomorphology involve erosion and landscape development. The internal processes involve: earthquakes, the earth's interior, plate tectonics, and mountain building. The lab work involves detailed analysis of topographic maps and is supplemented with field trips. Local geology will be emphasized throughout the course.
Prerequisite(s): GE1100

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): PM2100

GI1100 Historical Geography
This course begins with an overview of the geographic location, climatic conditions of the island of Newfoundland and the mainland Labrador, since the last glaciation. A study of the indigenous peoples of our province beginning with the 7,500 year old Maritime Archaic tradition, followed by the Paleo-Eskimo tradition, the Beothucks, the Naskapi-Montagnais, the Thule Eskimos, the Labrador Eskimos, and the Micmac tradition. The lifestyle, the environmental factors affecting settlements patterns and location of settlement, the food sources, and the religious beliefs of each culture will be discussed.

GM1100 Basic Maintenance Practices
The purpose of this course is to enable the student to work safely and efficiently in an aviation maintenance environment. This is to enable students to position aircraft, select materials and instructions that will provide for the safe completion of a maintenance task.

GM1150 Basic Maintenance Practices
The purpose of this course is to enable the students to work safely and efficiently in a structural repair environment. This is to enable students to select materials and instructions that will provide for the safe completion of a maintenance task.

GM1200 Standard Workshop Practices
This is a course designed for students entering the Aircraft Maintenance Engineering program. This course enables the student to obtain the knowledge and skills required to select and use hand tools, precision measuring instruments, shop equipment, and the knowledge to be able to identify different types of aircraft hardware.

GM1310 Aircraft Weight and Balance, and Non-Destructive Testing
This course is designed to provide a student with an in depth knowledge of Aircraft Weight and Balance. Non-destructive testing techniques, materials, and equipment will be discussed.
Prerequisite(s): GM1100

GM1500 Maintenance Regulations
This course will provide the student with the regulatory guidelines to be followed while performing maintenance on aircraft or aeronautical products as a requirement of the Canadian Aviation Regulations (CARs).

GM1510 Corrosion Control
This course will provide the students with the knowledge and skill to identify various types of corrosion, the causes of corrosion and the susceptible locations of corrosion on aircraft structures. This course is also designed to provide the knowledge and develop the skills needed to inspect aircraft structures for corrosion, assessment of damage, removal of corrosion, treatment of corroded areas and protection methods used to prevent or retard further deterioration of aircraft structural components.

GM1520 Sheet Metal Fabrication
This is an advanced course in aircraft structural fabrication where the students will utilize the knowledge and skills learned in previous aircraft structural repair courses to produce aircraft technical drawings, follow guidelines and specifications to fabricate aircraft structural components and produce the certification as required by the Canadian Aviation Regulations.
Prerequisite(s): AF1160

GM1600 Structural Damages/Repair & Assembly
This is an advanced course in aircraft sheet metal repair that will develop the student's knowledge and skill to assess damaged structures, procure and repair scheme them embody a certified repair that meets airworthiness requirements.
Prerequisite(s): AF1160

HE1100 Equipment Operation Safety
This course in heavy equipment operation fundamentals requires environment, equipment, operator, education, engineering and enforcement. It involves following safety regulations, assessing variable conditions (road, vehicle, driver, light weather and traffic), planning strategies, operating equipment, and preventing emergencies. It includes information on passing and being passed, power line hazards, and types of collisions (head on, behind and intersection).
Prerequisite(s): AF1160

HE1200 Equipment Maintenance
This course in heavy equipment operation fundamentals requires the use of tools and equipment, and materials and supplies. It involves following manufacturers recommendations for the maintenance of equipment and adjustment of components. It includes information on types and operation of equipment and component parts.

HE1300 Regulations and Emergency Procedures
This course in heavy equipment operation fundamentals requires the use of an appropriate environment and equipment. It involves becoming aware of, accessing, interpreting, integrating and gaining experience with the implementation of regulations and emergency procedures. It includes information on regulations and emergency procedures, national safety code and fuel conservation (pro trucker).

HE1500 Bulldozers
This course in off-road equipment requires the use of an appropriate environment and equipment. It involves inspection, start up, manoeuvring, planning strategies, cutting and spreading, winching, ripping, pushing, sloping and benching, excavating and stripping and shut down. It includes information on bulldozer operation and maintenance.

HE1510 Graders
This course in off-road equipment requires the use of heavy equipment and an appropriate environment. It involves inspecting, start-up/shut-down, manoeuvring, planning strategies, grading scarifying, spreading, ditching, shouldering, finishing and removing snow. It includes information on operations, techniques, attachments road systems and construction drawings.

HE1520 Backhoes/Excavator
This course in off-road equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, setting-up, planning strategies, ditching, excavating, loading trucks, lifting, sloping and benching, and stripping. It includes information on operations, techniques, attachments, road systems and construction drawings.

HE1530 Front End Loaders
This course in off-road equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, planning strategies, digging and dumping, excavating, loading trucks, dozing, lifting, sloping and benching, stockpiling and removing snow. It includes information on operations, techniques, attachments, road systems and construction drawings.

HE1540 Tandem Trucks
This course in tandem equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, changing gears, manoeuvring, positioning, hauling and dumping, and driving. It includes information on operations and techniques.

HE1550 Off-Highway Trucks
This course in off-highway equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, changing gears, manoeuvring, positioning, hauling and dumping, and driving. It includes information on operations and techniques.

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HE1560 Excavators
This course in off-road equipment requires the use of machinery and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, setting-up, planning strategies, ditching, excavating, loading trucks, lifting, sloping and benching, and stripping. It includes information on operations, techniques, attachments, road systems and construction drawings.

HM1500 Quality Management in Food Service
This course involves an introduction to quality management principles and supervision in the food service industry. Establishment of standards and application of quality assurance, risk management and waste utilization principles are practiced. Strategic planning, disasters plans and management information systems as they apply to health care and hospitality will be covered.

HM2100 Cost Controls I
This is an introductory course in the concepts of cost controls. The course deals specifically with the food control skills and techniques that are practiced in the hospitality industry.
Prerequisite(s): MA1110

HM2101 Cost Controls II
This is the second course in the concepts of cost controls. The course deals specifically with the skills and techniques of beverage cost management, labour cost controls, and staff scheduling as they are practiced in the hospitality industry.
Prerequisite(s): HM2100

HM2110 Hospitality Menu Management I ●
This course addresses a full spectrum of food service menus including: breakfast, ethnic, airline and health and fitness. Students are introduced to the fundamentals of menu planning, layout and design.

HM2111 Management of Institutional Menus II
This course is a continuation of Menu Management I with the major emphasis on menu planning for health care. Students will cover procurement practices for the food service industry, principles of food purchasing, receiving and correct storage. Waiter/Waitress training is also introduced in this course.
Prerequisite(s) HM2110.

HM2120 Convention and Banquet Management
This course instructs the student in the theory and skills required to manage conventions and banquets. It will expose the student to the design and responsibilities of a banquet department and will cover the techniques used in the industry to develop a function which meets the standards and expectations of its clientele. Topics covered include type of function, customer relations, banquet service styles and conference planning.
Prerequisite(s): HS1130 Dining Room Operations

HM2140 Food & 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.

HM2170 Food and Beverage Cost Controls
This is an introductory course in the concepts of cost controls. The course deals specifically with the skills and techniques of food and beverage cost management and labour cost controls.

HM2210 Hospitality Marketing
This course is an introduction to the concepts and techniques of hospitality advertising and marketing. Students study the history of marketing and advertising in the hospitality industry, government regulations, segmentation of the industry, marketing and advertising methodologies, travel marketing, sales goals, packaging, pricing, successful promotions and public relations.

HM2240 Supervision ●
This course explores practical and effective management skills for the hospitality workplace.Emphasis is placed on the technical and human relations skills considered essential for today's managers.
Prerequisite(s): HS1100

HM3110 Restaurant Menu Management III
This course lends itself more towards the hospitality industry. Students will cover the basics of doing room design and layout as well as the design principles for institutional kitchens. Students will study the design of banquets and buffets with a major emphasis on the planning aspects. An introduction to beverage and bar service in reference to beers/wines and spirits is also included in this course.
Prerequisite(s): HM2111.

HN1100 Introduction to Industrial Relations
This is an introductory course in the theory and practice of industrial relations in Canada. Practical examples will be explored to reinforce the theoretical concepts and to highlight important industrial relations issues. The course will examine the collective bargaining process, the grievance procedure, the related laws and regulations, and the administration of collective agreements.

HN1200 Human Resource Management ●
This is an introductory course in the theory and practice of human resource management. The following topics will be explored in this course: human resource planning, recruitment, selection, orientation, training and development, performance appraisals, compensation, employee rights and labour relations. Specific attention will be directed to Newfoundland Labour Legislation, particularly as it relates to industry.

HN1230 Human Resource Management I
This is an introductory course in some major functions with the area of human resource management. The following topics will be explored in this course: Strategic Human Resource Management, The Law and Human Resource Management, Human Resource Planning, Job Analysis and Job Design, Recruitment, Selection, Socialization and Orientation, Training, Development and Career Planning.

HN1240 Human Resource Management II
This is an introductory course in some major functions with the area of human resource management. The following topics will be explored in this course: performance appraisals, compensation, indirect compensation/employee benefits, communication and motivation, workplace safety and health, industrial relations framework, collective bargaining and collective agreements, international human resource management, and human resource auditing/evaluation.

HN2100 Collective Agreement Administration
This course will examine the issues and process involved in both negotiating and administering a collective agreement. Students will be introduced to the process of collective bargaining as well as the various issues involved in understanding, interpreting and administering a collective agreement. Practical simulations will be used to reinforce the theoretical material.
Prerequisite(s): HN1100

HN2110 Dispute Settlement
This course will explore the various types of third-party assistance available to both management and union in resolving disputes. A variety of dispute resolution procedures commonly used in Canada will be examined including conciliation, mediation, fact-finding, and arbitration. Practical simulations will be used to reinforce the theoretical material.
Prerequisite(s): HN1100

HN2130 Recruitment/Selection
The primary objective of this course is to provide an understanding of process, issues and techniques involved in training and development functions. Attention is given to the importance of each of these areas within the Human Resource Management field
Prerequisite(s): HN1240

HN2140 Attendance and Disability Management
The primary objective of this course is to provide an understanding of the functional areas of attendance and disability management within the field of Human Resource Management, giving due consideration to areas in the field that are affected by Federal and Newfoundland and Labrador Provincial law and regulations.
Prerequisite(s): HN1240

HN2150 Training and Development
The primary objective of this course is to provide an understanding of process, issues and techniques involved in training and development functions. Attention is given to the importance of each of these areas within the Human Resource Management field
Prerequisite(s): HN1240

HN2200 Compensation and Benefits
The objective of this course is to provide an understanding of the process, issues and techniques involved in developing and administering a compensation system. Attention is given to a compensation system that rewards employees fairly while motivating them to perform and permitting the organization to operate properly. In addition, key issues relating to employee benefits planning, design, and administration will be reviewed. Practical simulations will be used to reinforce the concepts and techniques.
Prerequisite(s): HN1200

HN2210 Human Resource Planning
The primary objective of this course is to provide an understanding of the essential elements of the human resource planning process. Quantitative as well as qualitative concepts, approaches, and techniques are emphasized.
Prerequisite(s): HN1200

HN3110 Current Topics in Human Resource Management
This course will examine issues, topics and trends in the areas of human resource Management and Industrial Relations that are of recent and current concern to professionals in the field.
Prerequisite(s): HN1200; HN1100

HR1100 Human Relations
This course is designed to create an awareness of the importance of effective interpersonal skills in an employment environment and to provide an opportunity for the student to learn and practice these skills. The student will examine the basic elements of interpersonal communication and practice effective communication skills in personal and professional relationships. The course emphasizes interpersonal skill development through the process of experiential learning.

HR1200 Introduction to Human Services
This course introduces the human service field as a profession. The principles which underlie the delivery of human services will be examined; and the knowledge, skills, and values relevant to human service work will be identified and analysed. A systems theory approach will be used to explore the environment in which human services are delivered.

HR1300 Communications and Human Relations I
The study of communication as it relates to effective human relations involving staff, children and parents. This course will include effective listening, oral and written skills as well as non-verbal communication.

HR2120 Public Relations
This course concentrates on the skills necessary to develop public relations for business purposes. A combination of theories/concepts and practical illustrations are used to explain the application of public relations.

HR2130 Industrial Relations
This course is designed to provide the student with an introduction to the complexities of human interaction with respect to the work place. It is also the intent that the course material will contribute to a better understanding of subject matter studied in other courses such as, construction law and construction management.

A basic course in Human/Labour relations with emphasis on the role of the individual within an organization. Topics to be covered include but are not limited to; self analysis, including attitudes, self-concept, communication style, motivations and organizational values; improving Human Relations, constructive self-disclosure, emotional control, positive reinforcement and first impressions; leadership and supervision, considering conflict management, prejudice, discrimination, and sexism. Students will be required to submit a term paper on a suitable topic as partial fulfillment of requirements of the course.

HR2200 Human Relations
This course is a study of the basic principles of human relations, and the behaviour of the people in organizations as they strive to achieve both personal and organizational goals.

HR2400 Professional Development
This course is designed to prepare the students for the workplace. The focus is on acquiring the skills of a successful professional employee. The students will learn how to assess and refine their own skills and to match these skills with employment opportunities.

HS1120 Introduction to Food Preparation I ●
This course is an introduction to the basic principles and techniques of food preparations as they relate to the food industry. The theory taught in the classroom is followed up by actual food preparation in a laboratory facsimile of a commercial operation.

HS1121 Food Preparation II
This course is a continuation of Basic Foods I. The students will be able to understand, recognize and have a knowledge of food preparation and production with reference to yeast breads, dairy products, meats, poultry, seafood, appetizers, soups, cookies and cakes.
Prerequisite(s): HS1120.

HS1130 Dining Room Operations
This course provides the student with a basic program in Dining Room Operations. It stresses the practical application of food and beverage service skills. The student receives training of a practical nature in the College's training dining room.

HS1260 Front Desk
This course introduces the student to the operations and procedures of a front office within the accommodation sector, combining theory and practical components. This course has been designed to include the National Occupational Standards for the Canadian Tourism Industry.

HS1340 Bar and Beverage Operations
This course introduces the student to the basic principals and techniques of bartending. Theory is combined with practical labs to ensure the student is given the opportunity to practice the skills learned. Responsible service of alcohol and guest contact techniques are stressed.

HS1420 Housekeeping
This course is designed to introduce the student to the responsibilities of a room attendant and also those of the executive housekeeper in a lodging property in the hospitality industry. The student acquires the skills and knowledge that will enable them to effectively work in the housekeeping department.

HS1520 Hospitality Sales
This course is designed to emphasize the skills and techniques necessary to sell products and services in the competitive environment of the hospitality industry. Students will study the selling process, meeting the client's needs, developing customer trust and rapport, sales closing and follow-up techniques.

HS2120 Food Preparation III
This course is designed to give practical experience on how to plan, produce and serve in quantity, nutritional meals suitable for institutional operations without deterioration in quality and with minimum waste. Students will learn how to purchase foods; evaluate, test and standardize recipes; develop and use portion control and calculate portion costs. Each student will be placed in a supervisory role in order to practice the skills of planning, organizing, directing and controlling staff and equipment during quantity food production. Throughout the course, through assignments, students will also receive practical experience in preparing and serving high quality meals suitable for restaurant meal service in a dining room setting.
Prerequisite(s): HS1121

HS2121 Food Preparation IV
This course is designed to give advanced practical experience in the operation of a cafeteria. The course builds upon fundamental concepts from previous courses and provides the student with supervisory experience of cafeteria management and small café service.
Prerequisite(s): HS2120

HT1110 Salon Fundamentals
This course in salon management requires the use of basic tools and equipment, and materials and supplies. It involves sanitizing tools and equipment, doing laundry, receiving clients, interpersonal communication, preparing clients for services, keeping record cards, adhering to work schedules and practicing safety. It includes information on salon management techniques and requirements, interpersonal relations, and equipment quality.

HT1210 Styling I
This course in styling requires the use of curling irons and hot rollers, brushes and combs, blow dryers and applicators. It involves personal consultation, client preparation, hair analysis, shampooing, treating and styling hair. It includes information on types of shampoos and rinses, and scalp and hair analysis and treatment.

HT1211 Styling II
This course in styling requires the use of basic implements and rollers. It involves personal consultation, client preparation, hair analysis, shampooing, treating and styling. It includes information on hair styles and types of hair pieces.

HT1300 Cutting I
This course in cutting requires the use of a straight razor, a clipper/edger, a shaper/razor, scissors and shears, and applications. It involves personal consultation, client preparation, determining type of haircut, cutting and finishing. It includes information on cutting techniques for various types of haircuts.

HT1301 Cutting II (Barbering)
This course in cutting requires the use of lather, straight razors, clipper/edgers, shaper/razors, scissors, shears and mannequins. It involves client consultation and preparation; determining haircut, beard trim and shave; cutting, trimming and shaving; and finishing. It includes information on cutting, trimming and shaving techniques.

HT1400 Basic Perming
This course in basic perming techniques requires the use of basic perms, perm rods, applicators and materials and supplies. It involves client consultation and preparation, hair analysis, perm and perm rod selection, winding, processing, neutralizing, rinsing and

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finishing. It includes information on hair analysis, types of perm rods, processing techniques, and neutralization.

HT1410 Chemical Relaxing/Straightening
This course in specialty perming techniques requires the use of specialty perms, perm rods, applicators and materials and supplies. It involves client consultation and preparation, hair analysis, perm and perm rod selection, winding techniques, processing, neutralizing, rinsing and finishing. It includes information on hair analysis, types of perm rods, processing techniques, neutralization and chemical relaxing.

HT1510 Colour Fundamentals
This course in hair colouring requires the use of applicators, implements and supplies. It involves client consultation and preparation; patch testing, strand testing and removal of residue. It includes information on hair analysis, types of colors, mixing, developing and semi-permanent and temporary colouring.

HT1511 Hair Colour
This course in hair colouring requires the use of applicators, implements and supplies. It involves client consultation and preparation, application of colour solutions and removal of residue. It includes information on hair analysis, types of colors, mixing, developing and permanent colouring.

HT1600 Introduction to Aesthetics
This course in aesthetics requires the use of applicators, implements and supplies. It involves client consultation and preparation for the aesthetic service and performing the required procedures. It includes information on types of aesthetics products and their uses.

HT2300 Advanced Cutting
This course in advanced cutting requires the use of a variety of tools necessary for current hair styles. The course is specifically aimed at those who have achieved proficiency in the rudimentary aspects of hair cutting with emphasis on the creation of individualistic hair styles. It includes information on communication skills necessary for client consultations, hair analysis, hair cut adjustment and finishing techniques necessary to enhance the design lines of the hair shaping.

HT2400 Advanced Perming Techniques
This course in advanced perming techniques requires the use of a variety of implements, materials and manufacturer products necessary for waving and straightening of hair. The course is specifically aimed at those who have achieved proficiency in the rudimentary techniques of all aspects of hair perming. It involves client consultation, hair analysis to determine desired effects, use of appropriate tools and equipment, wrapping and winding hair, application of processing solution, rinsing and neutralizing, performing finishing techniques and advising client on home maintenance.

HT2500 Lightening and Toning
This course in hair colouring requires the use of applicators, implements and supplies. It involves client consultation and preparation, patch testing, strand testing, applying bleaching solutions and removal of residue. It includes information on hair analysis and effects of bleaching and toning.

HT2501 Advanced Coloring
This course in advanced coloring requires the use of a variety of implement and supplies required for the application of hair coloring. The course is specifically aimed at those who have achieved proficiency in the rudimentary techniques of all aspects of hair coloring. It includes information on communication skills necessary for client consultations, hair analysis, color options, corrective coloring, mixing and the application of colors and advising on home care maintenance.

HY1100 Art History I
This is a survey course covering Western Art History to 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".

HY1101 Art History II
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

HY1300 Newfoundland 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.

HY1320 Newfoundland History
This course is a general survey of Newfoundland and Labrador in the twentieth century. The course begins with an examination of the major economic and political issues around the turn of the century, including construction of the railway, the First World War, political corruption and economic deprivation. It then focuses on major issues such as the Commission of Government, Confederation, and on the policies of subsequent governments. The course also examines the history of major industries and the emergence of major political and social movements and institutions.

HY1400 Architectural History
A brief architectural history course covering the period from ancient Egypt to modern day. Emphasis is placed on the factors which shape and influence architectural styles. The course discusses the impact of political, religious, climatic, economic, line of progression, and other factors on the thinking of designers. The relationship of design in related fields is also discussed. Students are expected to analyze present day buildings and identify the factors which influence their design.

HY2100 Art History III
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
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

IN2100 Introduction to Research Online ●
Introduction to Research On-line's primary goal is to learn how to effectively plan, construct and implement a search strategy. Students, after completing this course, will gain a deeper understanding and appreciation for the complexity and scope of researching online.

JL1110 Reporting & 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, interviewing, writing leads, story development and style. Accuracy and deadlines are essential. Students learn how to conceive newsworthy story ideas and develop them. The role of journalism in society is examined through lectures, group discussions and written assignments.

JL1111 Reporting & News Writing II
This course is designed to help journalism students build upon the fundamentals learned in Reporting and News Writing I. Particular attention is paid to researching, interviewing and writing skills. General assignment reporting introduces students to many of the kinds of stories they will encounter early in their careers
Prerequisite(s): JL1110

JL1240 Beat Reporting
This course familiarizes journalism students with major news beats. As well, each student is required to become proficient in covering one beat of his/her choice.
Prerequisite(s): JL1111, JL2240

JL1330 Electronic Layout & Design I
This course is designed to help students become functional in electronic layout and design. It introduces students to QuarkXPress for Windows and to the basic principles of newspaper layout and design.

JL1331 Electronic Layout & Design II
This course introduces students to the principles and techniques of newspaper layout and design. It teaches students how to lay out newspaper and outline pages using desktop publishing skills acquired in Electronic Layout and Design I.
Prerequisite(s): JL1330

JL1410 Journalism, Ethics and The Law
This course serves as an introduction for Journalism students to the Canadian legal system. Emphasis is placed on areas of the law encountered in journalism.

JL1530 Intro. to Radio Journalism
This course introduces students to broadcast radio journalism. The course emphasizes professional radio news formatting and presentation. Students will be introduced to the technical operation of tape recorders and microphones, the broadcast studio console and Sound Forge, an audio editing software package. Students will be required to tape interviews, and actualities in the studio and in the community, assemble news packages for grading and broadcast on the College's radio station CHUG 740 AM. Students are taught line-up and logging format, the use of continuity, stings, and station identification production.

JL1550 Intro. To Television Journalism
This course is designed to familiarize students with portable video equipment, microphones and video editing suites. Students are weaned from simple mic and camera "fright" by repeated practice in ad-libing, and interviews. This course emphasizes professional television news formatting and presentation Students tape interviews, and produce news clips in the studio and in the community, assembling news packages for grading and broadcast on Troubadour 12. The course includes video projects directed and filmed by student-teams.

JL1800 Newsroom I
Newsroom I is primarily a lab 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 produce a weekly on-line newspaper. Emphasis is placed on establishing good journalistic habits early in their learning career, such as meeting deadlines and meeting editors' expectations. Students are expected to apply the principles they are learning in Reporting and News Writing Fundamentals, Electronic Layout and Design I, and Photography. The students learn about working in the journalism industry and in the newsroom in particular.

JL1801 Newsroom II
This course will give the students the opportunity to apply skills learned in other courses in the production of an online paper. It will also include some radio work, but the bulk of the course will be devoted to print and online journalism. Issues related to the newsroom workplace will also be discussed.
Prerequisite(s): JL1800

JL2240 Feature Writing & Investigative Reporting
This course provides students with advanced news writing and reporting skills. Emphasis is placed both on the basics and the finer points of writing as well as basic and advanced investigative skills.
Prerequisite(s): JL1240, JL1110

JL2720 Special Project(s)
Students will produce a major piece of public service journalism in either print or broadcast. The resulting product must be suitable for publication or broadcast. The print feature stories will be published in a special newspaper highlighting the best stories produced over the past year and/or they could be free-lanced to other publications. Radio features will be broadcast on the College's student radio station and/or free-lanced. The television documentaries could be broadcast on cable.
Prerequisite(s): JL1111, JL1811, JL1240, JL1530, JL2800 (Radio Placement) JL1550 (TV Placement).

JL2800 Newsroom III
This course facilitates the practical application of principles and skills learned throughout the journalism program. Students become acquainted with the principles and practices of a newsroom environment. Students learn about freelancing and are encouraged to write for publications outside the college. The course devotes some time to writing and presentation skills for television, however the bulk of the lab time will be devoted to developing skills that are common to all journalism.
Prerequisite(s): JL1801

JL2801 Newsroom IV
Newsroom IV is primarily a practical lab where the students will learn by doing. The course seeks to mirror as closely as possible a newsroom setting, complete with story meetings, assignments and deadlines. The students are expected to apply the principles and skills they have learned throughout the journalism program. This course helps the students develop their skills by giving them as much practical experience as possible. Also, the instructors teach the students about working in the journalism industry and in the newsroom in particular.
Prerequisite(s): JL2800

LW1100 Business Law ●
This course is an introduction to the legal system; the Canadian and provincial judicial system; civil law, tort law; and introduction to contract law (types of contracts, offer and acceptance, breach of contract, discharge of contract, and capacity to contract).

LW1130 Tourism 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, travel agent and traveller, and private host and guest. Pertinent legislative acts relevant to the hospitality industry on 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, criminal and 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 is designed to give students an understanding of the Canadian system of labour law. Students will examine the law governing the collective bargaining relationship and the common law and statute law regulating the relationship between the employee and the employer. The Labour Relations Act (NF), The Labour Standards Act (NF), and The NF Human Rights Code will be examined in detail.
Prerequisite(s): HN1100, HN1200

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 in the student an understanding of fundamental concepts and a frame of reference guiding the application of these principles.

LW1600 Construction Law
This course has been designed to provide the student with a background in the tort law and contract laws of Canada. Its purpose is to familiarize the student with the responsibilities required of them under the law. Also, to relate to students how the law applied to the construction industry. Students will be given the opportunity to analyze the various documentation required for the legal operations of a construction project.

An introductory course dealing with the application of tort and contract law as applied to the construction environment. Topics to be covered include but are not limited to a study of various acts, provincial, federal and municipal that affect the construction phase of project development; the law of contract, insurance and bonding, the law of torts, construction claims, CCDC documents, ethics, etc. Lecture material will, as far as possible illustrate the application of the law using selected Newfoundland and Canadian court decisions.
Prerequisite(s): CM1401, CT1150

LW1610 Management Construction Law
This is a course dealing with management principles and various laws applicable to the design and construction industry. It is designed to enable the student to become familiar with a number of generic management systems and the specific laws and codes of ethics which govern this industry.

LW2100 Business Law II ●
This course is designed to familiarize students with the criminal law system and criminal offences, employment law (employer-employee relations, collective bargaining, provincial labour legislation, principal and agent), real property (buying, building, and leasing), and contract law (Sale of Goods Act, consumer protection, and negotiable instruments).
Prerequisite(s): LW1100

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

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and protection of natural resources. Topics critical to the understanding of Canadian law, including the Charter of Rights and Freedoms, the criminal code, resource policies, regulations and relevant acts will be addressed.

LW2211 Law Enforcement
This course requires the use of legal documentation and enforcement equipment. It involves the role of a peace officer and the proper investigation, recording and reporting of natural resource infractions. It includes information patrolling, covert operations, use of decoys, powers of arrest, search and seizure, and interviewing techniques, as well as preparation for court proceedings and sentencing.
Prerequisite(s): LW2210

LW2400 E-Business Law & Regulations
This course will focus on the legal, security and privacy issues pertaining to doing business on the Internet. Students will gain knowledge of various legal and regulatory issues including: copyright, intellectual property, trademarks, confidential information encryption and privacy. Business contract appropriate for the Internet will also be addressed. Guest speakers from the legal community with expertise in the areas identified will be invited to share their experience with students.

MA1000 Essential Mathematics
This is a course in basic mathematics designed to help alleviate specific weaknesses in student's mathematical skills. This course is a non-credit prerequisite for Mathematics 1100 for those students identified by the placement testing procedure.

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 realistic application for Aircraft Structural Repair.

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.
Prerequisite(s): MA3201, MA3203

MA1101 Mathematics
This is a course designed to prepare students for the study of calculus as well as to familiarize them with the concepts of differentiation necessary for a better understanding of a variety of technology courses.
Prerequisite(s): MA1100

MA1104 Mathematics
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. Major topics include: fundamentals of algebra, functions and their graphs, exponential and logarithmic functions, trigonometry, analytical trigonometry, polynomials and rational functions.
Prerequisite(s): MA1100; at least 75% in Level III Advanced Mathematics or at least 95% in Level III Academic Math

MA1120 Mathematics
Transferable to MUN Mathematics 1050.
This course is designed to satisfy part of the first year mathematics requirement for prospective teachers in primary and elementary education programs. This course is also suitable for students headed into a non-science area of study.
Prerequisite(s): Level III Academic or Advanced Mathematics.

MA1121 Mathematics ●
Transferable to MUN Mathematics 1051.
This course is designed to satisfy part of the first year mathematics requirement for prospective teachers in primary and elementary education. This course is also suitable for students headed into a non-science area of study.
Prerequisite(s): Level III Academic or Advanced Mathematics.

MA1130 Mathematics
Transferable to MUN Mathematics 1000.
An introduction to differential calculus including logarithmic, exponential, and trigonometric functions with applications. A brief introduction to integration.
Prerequisite(s): Pass in Level III Advanced Mathematics.

MA1131 Mathematics
Transferable to MUN Mathematics 1001.
An introduction to integral calculus with applications.
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.

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.

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.

MA1670 Statistics ●
This course is designed to introduce students to the basic principles of probability and statistics.

MA1700 Mathematics
This is a course in pre-calculus mathematics designed to help alleviate specific weaknesses in student's 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 students 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.

MA1910 Introduction to Numerical Problem Solving
A practical mathematical background is provided in this course ass it applies to business data processing. This course deals with various approaches to problem solving and decision-making using management science techniques (quantitative analysis). The student will investigate the following business oriented problem and decision making topics: optimization, transportation schedules, assignment problems, waiting line (Queuing) model analysis, and deterministic inventory models.
Prerequisite(s): MC1800, MA1900

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 Applied Electrical / Electronics Mathematics
This is an advanced calculus course designed to meet specific requirements of the Electrical/Electronics Engineering Programs.
Prerequisite(s): MA2100

MA2110 Applied Petroleum Mathematics
This is a course in advanced calculus and statistics. After a brief introduction to some selected topics in multivariate calculus, students are introduced to solution techniques in first order ordinary differential equations (with specific applications) and partial differential equations. The course then deals with introductory concepts in probability and statistics, leading to some standard results in both discrete and continuous distribution theory.
Prerequisite(s): MA2100

MA2120 Applied Geomatics Mathematics
This course consists of introduction to probability and statistics, partial differentiation, theory of errors, complex functions, conformal mapping and general transformation, complex differentiation and integration.
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

MA2400 Mathematics of Finance II ●
This is an advanced course designed to provide a more in-depth study of the mathematics of finance in such areas as interest, annuities, amortization, sink-

ing funds and bonds.
Prerequisite(s): MA1400

MA2610 Introduction to Management Science
This course deals with various approaches to problem-solving and decision-making using management science techniques (quantitative analysis). The student will investigate the following business oriented problem and decision making topics: optimization, transportation schedules, assignment problems, waiting line (queuing) model analysis, and deterministic inventory models. Applications of computers in quantitative techniques will also be emphasized.

MA3120 Advanced Geomatics Mathematics
Review of differentiation including partial differentiation and integration. Topics included in the course are spherical trigonometry, matrix algebra, least-squares method and complex integration.
Prerequisite(s): MA2120

MB1100 Equipment Operation Safety
This course in heavy equipment operation fundamentals requires environment, equipment, operator, education, engineering and enforcement. It involves following safety regulations, assessing variable conditions (road, vehicle, driver, light weather and traffic), planning strategies, operating equipment, and preventing emergencies... It includes information on passing and being passed, power line hazards, and types of collisions (head on, ahead, behind and intersection).

MB1110 Equipment Maintenance
This course in heavy equipment operation fundamentals requires the use of tools and equipment, and materials and supplies. It involves following manufacturers recommendations for the maintenance of equipment and adjustment of components. It includes information on types and operation of equipment and component parts.

MB1120 Regulations and Emergency Procedures
This course in heavy equipment operation fundamentals requires the use of an appropriate environment and equipment. It involves becoming aware of, accessing, interpreting, integrating and gaining experience with the implementation of regulations and emergency procedures. It includes information on regulations and emergency procedures, national safety code and fuel conservation (pro trucker).

MB1130 Crane Operation Fundamentals
This course in hoisting equipment requires the use of a crane, equipment, a suitable environment, a load and a load chart. It involves inspecting the machine, moving the crane, considering the variables, making calculations, setting-up, rigging the load, confirming the LMI, signalling and moving the load. It includes information on load moment indicators, operations, techniques, and safety requirements.

MB1140 Mobile Lattice Boom Cranes
This course in hoisting equipment requires the use of mobile lattice boom cranes and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, assembly, setting-up, planning strategies, hoisting and dismantling. It includes information on operations, techniques and attachments.

MB1150 Mobile Hydraulic Boom Cranes
This course in hoisting equipment requires the use of a hydraulic boom crane and a suitable environment. It involves inspection, start-up/shut-down, manoeuvring, assembly, setting-up, planning strategies, hoisting and dismantling mobile hydraulic boom cranes. It includes information on operations, techniques and attachments.

MC1000 Windows & Productivity Tools Seminar
This seminar is designed to provide students with sufficient working knowledge in the areas of Windows operating systems, word processing, electronic spreadsheets, presentation software, electronic mail and the Internet. This will enable students to quickly adapt to the courses in the first semester, thus eliminating the significant learning curve that is normally attributed to startup in a program such as Applied Business Information Technology.

MC1050 Intro 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.

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.

MC1151 Advanced Productivity Tools ●
This course is designed to teach students the advanced features of common office software packages applicable to the information industry.
Prerequisite(s): MC1150

MC1180 Computer Systems for Graphic Arts
The introduction to basic computer operating systems and its various versions, and Apple/MacIntosh with its icon operating system of graphical interface. A comparison will include the PC operating with Windows as compared to the MacIntosh operating system. Students receive exposure to a cross platform networked environment with a variety of printers and peripherals.

MC1220 Productivity Tools I
This course is designed to teach students the fundamental concepts of the Windows operating environment, keyboarding by the touch method, basic word processing procedures, the use of e-mail and the internet. Students will apply concepts through practical application.

MC1221 Productivity Tools II
This course is designed to teach students more advanced word processing features building on the fundamentals of Word Processing I, to introduce students to the basic concepts and applications of electronic spreadsheets, and to introduce students to the basic components of presentation software. Students will apply concepts through practical application.
Prerequisite(s): MC1220

MC1240 Computer Applications for Arts Management
This course exposes students to a selection of computer applications and functions of particular use in an arts administration environment. These include advanced database and spreadsheet functions, basic HTML editing and accounting software.
Prerequisite(s): MC1150

MC1450 Music Computer Applications
This course is designed to enable students to use computers to enhance musical creativity and performance. A range of contemporary applications, which may vary from semester to semester, will be used and evaluated by students.

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.

MC1801 Software Applications II
This course is designed as a continuation of Software Applications I. It will explore such topics as Database Software, Diagramming Software, and Project Management Software. Students will be proficient in the fundamental competencies necessary to use a database package. Students will be able to create diagrams with diagramming software for exporting to other applications and planning applications. Project management software features will be explored to prepare students for the use of this software when planning projects.
Prerequisite(s): MC1800

MC2220 Productivity Tools III
This course introduces students to the concepts and applications of database , teaches students advanced features of electronic spreadsheets building on the concepts presented in Spreadsheets I, and provides practice in integrating the features of word processing, database and spreadsheet software programs.
Prerequisite(s): MC1220, MC1221

ME1110 Media and Applications & Public Relations ⊗
This is an applied media and public relations course for students intending to work in the human service 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.

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.

MH2310 Power Plant Components
This is a course designed to develop the basic skills needed to operate and maintain power plant systems.
Prerequisite(s): MH1110

MH2800 Process Systems
This is a course designed to develop the basic skills to operate and maintain process systems.
Prerequisite(s): MH2310

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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

MH3310 Power Plant Systems
This is a course designed to develop the basic skills needed to operate and maintain power plant systems.
Prerequisite(s): MH1110

MH3320 Building Systems
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

MH4400 Refrigeration Systems
This is a course designed to develop the basic skills needed to operate and maintain a power plant system within the scope of a third class classification.
Prerequisite(s): MH3310

MH4500 Prime Movers
This is a course designed to develop the basic skills needed to operate and maintain a power plant system.
Prerequisite(s): MH1110

MH4600 Plant System Design
This course will provide the student with the understanding and knowledge of acoustic, automatic control, adjustment and balancing of ventilation air, energy audit equipment and ancillary schedule and cost estimation.
Prerequisite(s): MH2801

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

ML1211 Hematology
This course 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 theoretical and practical aspects of histology as follows: methods of collection, fixation, processing and blocking of tissues; decalcification of bone; use and care of microtomes and section cutting.
Prerequisite(s): Completion of all third semester courses.

ML1310 Introduction to Biological Staining
This course is provided to instruct the student in the theoretical and practical aspects of histology as follows: principles of staining, uses of various staining techniques and the identification of pigments and artifacts, and the microscopic identification of tissue sections.
Prerequisite(s): ML1300

ML1500 Introduction to Transfusion Science
This course will provide the student with a fundamental knowledge of both the theoretical and technological aspects of blood transfusion, hemolytic disease of the newborn and autoimmune hemolytic disease.
Prerequisite(s): ML2400

ML2210 Hematology
This course allows students to develop technical competence while reviewing theoretical material given in ML1200 and ML1211.
Prerequisite(s): ML1211

ML2211 Hematology
This course is a working theory of special hematology stains and blood cell morphology.
Prerequisite(s): Pass 6th semester

ML2310 Histology
Upon successful completion of this course, the student will be able to carry out the routine techniques performed in a histopathology laboratory.
Prerequisite(s): Successful completion of 5th semester

ML2311 Histology
Upon successful completion of this course, the student will be able to carry out the routine techniques performed in a histopathology laboratory.
Prerequisite(s): Successful completion of 6th semester

ML2400 Introduction to Blood Group Systems
The course of study will provide students with a fundamental knowledge of both the theoretical and technological aspects of the human blood group systems.
Prerequisite(s): Completion of all 3rd semester courses.

ML2510 Transfusion Science
This course will provide the student with an intermediate understanding of both the theoretical aspects of the blood group systems and related technological aspects.
Prerequisite(s): ML1500

ML2511 Transfusion Science
This course will provide the student with an advanced understanding of both the theoretical aspects of the blood group systems and related technological aspects. Following completion of this course the student will have sufficient skills and knowledge to enter the hospital clinical phase of the program.
Prerequisite(s): Pass 6th semester

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): Pass 7th semester

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 7th semester

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): Pass 7th semester

MM1100 Authoring Systems
This course is designed to introduce students to the various authoring tools available for creating multimedia applications. Icon based systems, scripting and screen design utilities will be among the topics discussed.
Prerequisite(s): MC1050

MM1200 Instructional Design I
This course will provide students with the methodologies associated with the design of instructional material. Procedures for the identification of concepts in instructional material will be covered. Analysis of tasks and related competencies and development of learning units and learning objectives are also among the topics discussed.

MM1201 Instructional Design II
This course will show students how to apply the principles covered in Instructional Design I to produce a multimedia instructional package. Topics to be covered include creative development, content design, technical design, and visual design.
Prerequisite(s): MM1200

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.

MM1710 Multimedia Design Project
The multimedia project course is offered during intersession. During this course the students will research and design a multimedia CBT course for a skill set that meets the approval of the instructor. The students will be expected to carry this design through to production in the following semester.
Prerequisite(s): MM1201

MM1730 Multimedia Web Design Project
The multimedia project course is offered during intersession. During this course the students will research and design a multimedia CBT course for a skill set that meets the approval of the instructor. The students will be expected to carry this design through to production in the following semester.

MM1800 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
This course is designed to provide students with the skills and knowledge necessary to effectively work in a team environment.

MM2100 Multimedia Authoring I
This is an introductory course to courseware design and authoring which will introduce students to the basic concepts and methodologies of applying design principles and authoring a multimedia application.
Prerequisite(s): MC1050

MM2101 Multimedia Authoring II
This is an intermediate course in courseware authoring designed to provide students with concepts and methodologies for authoring a multimedia application. Topics to be covered include animation, sound, video, setting up user interactions, functions and variables, and reusing content and logic.
Prerequisite(s): MM2100

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.
Prerequisite(s): MM1300

MM2310 Digital Video Techniques
This course will provide students with 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.
Prerequisite(s): MM1300

MM2350 Multimedia Production
This course will expose the student to the actual preparation of a project for delivery, packaging, physical production, and follow-up of a multimedia product. Students will have the opportunity to actually master a CD-ROM, prepare applications for delivery on diskette, and explore the delivery of an application on the net.
Prerequisite(s): MM2101

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.
Prerequisite(s): MC1050

MM2501 Computer Graphics II
This course provides students with an introduction to three dimensional graphics. Experience in the generation of 3D graphics will be explored through the use of several commercial 3D drawing programs. Topics to be covered include 3D primitives, transformations, surfaces, and rendering.
Prerequisite(s): MM2500

MM2550 3D Texture and Digital Paint
Using standard image processing programs, 3D Texture and Digital Paint will introduce students to the artistic approach and technical aspects of custom texture generation, digital painting and application techniques for 3D.
Prerequisite(s): MM2500
Co-requisite(s): MM2660

MM2600 Computer Animation I
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.
Prerequisite(s): MM2500

MM2601 Computer Animation II
Computer Animation II introduces students to the concepts and methodologies of three dimensional computer animation. 3D animation techniques and virtual reality will be among the topics discussed.
Co-requisite(s): MM2500

MM2610 Introduction to 3D Animation
Introduction to 3D Animation will introduce students to the fundamentals of 3D animation. The course will include a general knowledge of the history, and potential applications of the medium, the basics of workflow organization and specific tool use.

MM2660 3D Character Modeling
3D Character Modeling will expand on the fundamentals of digital modelling presented in Introduction to 3D Animation and will introduce the concepts and practical applications of model optimization, animation rigging and weighting.
Prerequisite(s): MM2610
Co-requisite(s): MM2550

MM2680 3D Character Animation
3D Character Animation will expand on the fundamentals of digital character animation covered in Introduction to 3D Animation. Practical exercises in a variety of animation scenarios, and essential editing and control features will be explored.
Prerequisite(s): MM2550

MM2700 Multimedia Lab I
This lab course will provide students with the opportunity to work on their multimedia applications with formal lab assistance and supervision. In this course students will apply principles and practices covered in the program to practical applications.
Prerequisite(s): MM2100

MM2701 Multimedia Lab II
This lab course will provide students with the opportunity to work on their multimedia applications with formal lab assistance and supervision. In this course, students will apply principles and practices covered in the program to practical applications.
Prerequisite(s): MM2101

MM2710 Multimedia Lab II
This lab course will provide students with the opportunity to work on their multimedia applications with formal lab assistance and supervision. In this course, students will apply principles and practices covered in the program to practical applications.
Prerequisite(s): MM2101

MM2750 Special Topics
The Digital Animation field is characterized by frequent changes in software and hardware applications. The pace of progress is accelerating and new applications offer exciting potential for students in this field. This course was designed to enable students to select a contemporary leading edge software application and to refine their animation skills within the context of that application.
Co-requisite(s)s: MM2601; MM2501

MM2760 Animation Design Project
Animation Design Project is offered during the intersession. This course will expose students to the rigors of the 3D production design environment. Through research and design assignments the students will be expected to produce a fully developed dossier of production documentation, subject to the instructor's approval.
Prerequisite(s): MM1800

MM2780 Work Term
(Under Development)

MM2800 Multimedia Trends
This course includes selected areas of computing with a unifying theme (instructor's choice) to be explored in depth. The topics may be selected from: Data Communications, Website Administration, Website Management, Website Design, Website Server, E-Commerce, and/or other related areas. Course materials will be selected in the semester prior to the semester in which the course will be delivered. Course material will be selected by the Information Technology Faculty in consultation with the Advisory Committee for the Multi Media Program.

MM2830 3D Post-Production and Visual FX
Using an industry standard animation package 3D Post-Production and Visual FX will explore the concepts and techniques used to digitally create realistic simulations of various environmental conditions and natural phenomenon.
Prerequisite(s): MM2660

MM2850 Digital Compositing
In Digital Compositing students will learn the concepts, language and fundamental skill sets required for advanced digital image processing and assembling visual effects for film and video.

MM2900 Portfolio Development
Portfolio Development will establish the skills of objective, critical self assessment, required to select, collate, and present a body of work that best represents core strengths with a view to identifying and achieving career objectives.

MM3100 Multimedia Design and Authoring III
This is an advanced course in courseware authoring designed to provide students with advanced concepts and methodologies for authoring a multimedia application. Topics to be covered include more on animation, sound, video, functions and variables, using external functions and application distribution.
Prerequisite(s): MM2101

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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.

MN1420 Tour Management
This course is an introduction to the world of tour management. A good tour conductor has the self-assurance and tact of a diplomat, the knowledge of a scholar, the performance skills of an entertainer, and the organizational abilities of a time management expert. Don't be misled, leading a tour is no easy job. Throughout this course, strategies for dealing with many challenges of the job will be examined in detail.
Prerequisite(s): TR1700 Local Tour Guide

MN1800 Integrated Resource Management
This course is designed to provide a working knowledge of sustainable forest management principles, procedures and concepts. Technical, esthetical, environmental, hydrological, wildlife, and financial considerations of management practices are reviewed. Emphasis is placed on owner's objectives while employing a sound, practical, forest technical approach to resource management. Students are expected to apply knowledge from all forestry courses throughout the program to construct a strategic sustainable forest ecosystem management plan for an assigned forest.
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.

MN2400 Technology Project Management ●
This course is designed to introduce students to project management concepts as they apply to technology applications. Students will gain a knowledge of what is required to develop and implement a project plan for launching an online product for a new or existing product/service from inception to evaluation.

MN2500 Customer Relations Management ●
This course provides an overview of the various issues relating to the management of customer relations in the context of changing technology and customer demands.

MN2600 Strategic Management
This 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): Completion of all First Year courses.

MP1310 AC/DC Fundamentals
This course in electrical fundamentals requires the use of electrical tools, circuit components, and measuring instruments. It involves constructing circuits, taking measurements, reading scales and making calculations. It includes information on Ohm's Law and Kirchhoff's Laws; DC voltage, current and resistance; conductor sizes and resistivity, line voltage drop, open circuit voltage, electric power and energy, power loss, static electricity, electron theory, units and symbols; meter operations and utilization techniques, operational circuits, characteristics of conductors and insulators and system grounding; DC series and parallel circuits; magnetic fields, electromagnetism and electromagnetic induction; AC current and voltage, capacitance and inductance, AC circuits, AC power, power factor and vector analysis.

MP1320 Single Phase Transformers
This course in electrical fundamentals requires the use of electrical tools and supplies, test equipment and safety equipment. It involves installing, connecting and troubleshooting single phase transformers. It includes information on electromagnetic induction, types of transformers, cooling methods, pad mounted transformers, protective devices, electrical code, polarity, current transformers, potential transformers, paralleling transformers, voltage ratings, protective grounding and bonding, impedance and V-A ratings.

MP1430 AC Motors and Starters
Course provides the training to install and maintain AC motors and starters.

MP2100 Electrical Machines and Devices
This is an intermediate level electrotechnology course designed for industrial instrumentation technology students. It is intended to familiarize the student with the construction, connection, operation and maintenance of rotating electric machines. Additionally, this course should expand the student's understanding of electro-mechanical conversion principles. The laboratory work is included to reinforce theoretical concepts and enhance skills in the use of measuring instruments.
Prerequisite(s): ET2100

MP2300 AC Circuits
This course is designed to be a continuation of the electrotechnology courses. It is designed to strengthen the student's ability to analyze single and three phase AC circuits as well as reinforce the student's understanding of magnetic circuits. The laboratory work is included as an application of the theoretical concepts and to enhance skills in the use of AC measuring instruments.
Prerequisite(s): ET2100, MA1101

MP2330 Power Control Circuits
This control circuit course requires the use of electrical tools and components, wiring diagrams, data books, and test equipment. It involves the installation, operation and maintenance of control circuits and devices. It includes information on AC motor starters, synchronous motor starters, types of control devices and sending units, electrical code, types of control circuits, types of wiring, LEDs, phototransistors, fibre optics, tunnel diodes, markings and lockout procedures.

MP2340 Three Phase Systems
This course in electrical fundamentals requires the use of electrical tools and equipment and test equipment. It involves constructing three phase circuits, taking measurements and making calculations; and installing, connecting and troubleshooting three phase transformers. It includes information on Wye and Delta type circuits, high leg characteristics, phase rotation, power factor, three phase power, types of three phase transformers, types of hookups, construction of three phase transformers, balance and neutral, lightning arrestors, surge suppressors, protective devices, and electrical code.

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 analyse 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

MP2900 EMD 1 (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

MP2901 EMD 2 (AC Machines)
This course follows Electrical Machines MP2900 and covers topics in AC machines. 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): MP2300, MP2900

MP3100 Motor Control Systems
This control system course requires the use of basic tools and test instruments, circuit components, computer software and documentation. It involves installing, testing and maintaining computerized control systems, and keeping records. It includes information on types of computerized control systems and specifications.
Prerequisite(s): MP2350

MP3130 Industrial Electronic & Power Systems
This course is a study of motor controls starting from relay logic to PLC control and electronic variable

speed motor drives. Power electronic device theory is covered as background for drive electronics. A.C. and D.C. drives, with application in the instrumentation field.
Prerequisite(s): ET2100, MP2100

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): AE2250, MP3100

MP3201 Power Transmission & Distribution
This is the follow-up course to AC Circuits MP3100 (Power Transmission and Distribution) and covers further topics in power system analysis. Short circuit calculations for symmetrical and unsymmetrical faults are covered. Students will get hands on usage of a commercial power system analysis computer simulation program (Electrocon 2000). Students will be introduced to the principles of protection and coordination.
Prerequisite(s): MP3210

MP3210 Power Transmission & Distribution
This course covers the basics of electrical utility power transmission and distribution. The theory of transmission lines is covered. Distribution networks and their place in the transmission network is discussed. The different types of conductors and mechanical aspects of transmission lines are covered as well as tension calculations.
Prerequisite(s): MP2100, MP2350

MR1100 Marketing I ●
This course is an introduction to the concept of marketing. Students will learn the origins, evolution, and principles of modern marketing management including marketing information services, marketing research, consumer behaviour, and marketing strategies. In addition, international marketing will be studied.

MR1150 Tourism Marketing I
Marketing is one of the most important business functions of the hospitality and travel industry and must be strongly customer focused. This course will explore marketing in detail from a customer perspective.

MR1151 Tourism Marketing II
This course was designed to complement Tourism Marketing I, with a focus on tourism products. The student will study product design and management, pricing, distribution, promotions, public relations, professional sales and the total marketing plan.
Prerequisite(s): MR1150

MR1210 Customer Service ●
This course focuses on the role of the employee in providing quality customer service. It is important that employees have a positive attitude and the necessary skills to effectively listen and interpret customers concerns about a product, resolve customers' problems, and determine customers' wants and needs. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistently high level of service to the customer.

MR1220 Customer Service
This course focuses on the role of the telemarketer in providing quality customer service. It is important that the telemarketer have a positive attitude and the necessary skills 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.

MR1230 Customer Service in the Food Service Industry
This course focuses on the role of quality customer service in the hospitality industry. It stresses the importance of a positive attitude; skills for effective listening and interpreting; skills for problem solving; and skills for determining customer wants, needs and concerns. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistent high level of service to customers in the hospitality industry.

MR1340 Marketing for Graphic Design
This course is designed to develop students' understanding of the relationship between marketing and graphic design. A specific focus of the course is to introduce students to the process of applying marketing principles when translating clients' needs to specific target audiences.
Prerequisite(s): Core graphic design courses in semesters 1 and 2.

MR1500 Consumer Behaviour
This course is designed as an introduction to the concepts, theories and techniques of consumer behaviour. It illustrates how models of consumer behaviour are developed and used in marketing strategies. Discussion will take place on such topics as environmental influences, individual differences, and psychological processes.
Prerequisite(s): MR1100

MR1600 Professional Selling
This course outlines the basic concepts of professional selling. It provides an overview of the selling environment and sales career paths. The course will assist in the preparation and making of a successful sales presentation and show techniques for closing a sale. Also, the functions of the sales manager will be discussed.
Prerequisite(s): CM2200, CM2100 and MR2100

MR2100 Marketing II ●
This course builds on the concepts and techniques introduced in Marketing I. Students will examine in detail the elements of the marketing mix. Students will focus on planning, implementation and evaluation of the marketing management process. International marketing and service marketing are also studied.
Prerequisite(s): MR1100

MR2110 Marketing Methods & Promotional Media
This course introduces the concepts and techniques of marketing. Students will learn the principles of modern marketing management and the resources required to successfully promote and market a product. A major aspect of the course is the development of a marketing plan related to the student's program of studies.

MR2120 Internet Marketing ●
This course will focus on marketing products and services on the World Wide Web. Students will gain knowledge of the tools, techniques and strategies that can be used to market on the Internet. This course will build on previous knowledge of marketing strategies and principles.

MR2200 Retailing
This course is an introduction to modern retailing management techniques with a comprehensive view of principles and practices.
Prerequisite(s): MR2100

MR2300 Marketing Research
This course will bring together all the various techniques and principles, skills and activities that are required to conduct an effective survey project. It will familiarize students with the many ways that marketing information can be obtained or produced and how it is used.
Prerequisite(s): MR2100

MR2350 Introduction to Electronic Commerce ●
This course is designed to introduce students to the managerial and technical aspects of electronic commerce. Students will gain a knowledge of the competitive electronic commerce field and will be equipped to help businesses assess possible business opportunities through this rapidly evolving technology.

MR2360 E-Customer Service
Now more than ever, customer service is critical to business success. New emerging business models involving the internet are demanding a new level of customer service from companies if they want to remain successful. These new demands and refined relationships are challenging most traditional marketing principles. This course will assist students understand this new business reality and provide skills and strategies which can be applied to business situations to help them understand their existing customer relationships. Students will also gain knowledge of how to implement new methods of customer support for both small and large businesses.

MR2400 Marketing Communications
This course in an introduction to marketing communications, the development of advertising, the advertising business, marketing and advertising planning, communications media characteristics, planning, management, the development of creativity in copywriting and art direction; production concepts for print and electronic media; local advertising and promotion practices; strategies for effective management of public relations and non-commercial communications, and other topics of interest.
Prerequisite(s): MR2100, CM1100 and CM2100

MR2450 Services Marketing
This course is designed to enable students to apply the concepts of marketing to the services sector. The course will enable students to apply marketing concepts and strategies relevant to services organizations.
Prerequisite(s): MR2100

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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

MR2630 E-Commerce Trends
This course includes selected areas of emerging e-commerce trends to be explored in depth. The topics may be selected from: emerging technology applications, government e-commerce policies, e-commerce growth trends, changing shape of e-commerce market sector, on-line auctions, wireless e-commerce tools, emerging security threats and strategies, globalization impacts, and/or other related areas. Guest speakers from industry will be featured throughout the course. Topics will be determined in the semester prior to the semester in which the course will be delivered.

MR2640 E-Commerce Transactions
This course will cover all issues relating to business as well as business to customer sales. Students will gain knowledge of what is required to implement various payment systems, and how to manage sales and distribution systems. The course has a non-technical focus and is intended to introduce students to concepts and language transaction technology applications.

MR2670 Online Business Development
This course is designed to provide students with an understanding of all the issues relating to starting an online business (product or service). Students will have to generate an online business idea, complete business planning process including all the steps to starting a business. Students will be required to select, develop, plan, design including selecting appropriate technologies, conduct market research, develop a customer service plan, seek funding alternatives, determine business feasibility and all other business plan requirements.

MR2700 International Marketing
This course is designed to enable students to apply the concepts of marketing in an international context. The course will enable students to research and understand foreign markets, and to apply marketing concepts relevant to strategy development in foreign markets identified by exporting and transnational organizations.
Prerequisite(s): MR2100

MR2800 Business-to-Business Marketing
This course is designed to enable students to apply the concepts of marketing in a business customer context. The course will enable students to research and understand business markets, and to apply marketing concepts relevant to strategy development in manufacturing, trade, institutional, and not-for-profit organizations.
Prerequisite(s): MR2100

MT2400 Mineral Processing I
This course is designed to train the student to function efficiently in an ore concentration facility. The subject matter consists of sampling methods and procedures, flow-sheeting, screens and screen analysis, pulp density, calculations, grinding-crushing equipment and size reduction calculations, classification, concentration and tailings disposal.
Prerequisite(s): PH1100, JA1100, CH1100

MT2401 Mineral Processing II
(Under Development)
Prerequisite(s): MT2400

MU1100 Introduction to Music
This is an introductory course which explores basic theory and terminology of music. The intent is to provide students with the skills to read music and to write a simple composition while learning the vocabulary of the industry.

MU1110 Music and Culture ●
This course is designed to trace the history of music and to explore the reciprocal relationship between music and culture. The course traces the development of distinct musical genres and illustrates that these genres serve as mirrors of their respective societies.
Prerequisite(s): MU1100

MU1120 Musical Theatre
This course explores the role of music in theatre arts. The primary focus is upon the role of music, and the musical director, within theatre.

MU1200 Songwriting
This course provides an overview of effective songwriting principles. Students will review these principles and will listen critically to a wide range of selections from a variety of genres. By the end of the course, students will be composing their own pieces.

MU1400 Performance
This course combines in-class sessions on stage presence and performance with live performances in local venues as either lead or back-up performer.

MU2110 Instruments
This introductory course explores the families of instruments used in all civilizations. Students will use a classification system to categorize instruments and to identify common operating principles.
Prerequisite(s): MU1110

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

MV1100 Engine Operations
This course in engines requires the use of basic tools, shop equipment and test equipment. It involves compression testing and valve timing. It includes information on the operation of different types of engines and component parts.

MV1110 Lubrication Systems
This course in lubrication systems requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling lubrication systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of lubrication systems and component parts.

MV1160 Light Duty Engines
This course in engines requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling light duty engines; and inspecting, testing, adjusting and repairing/replacing component parts. It includes information on the operation of different types of light duty engines and component parts.
Prerequisite(s): MV1100

MV1240 Medium Duty Steering and Suspension
This course in steering and suspensions requires the use of basic tools, equipment, and test instruments. It involves disassembling and reassembling medium duty steering and suspension systems; and inspecting, testing, and repairing/replacing components. It includes information on the types of components and systems, and their operation.

MV1310 Gas Engine Air & Fuel Delivery Systems
This course in fuel systems requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling gasoline air and fuel delivery systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of gasoline air and fuel delivery systems and component parts.

MV1400 Body Electrical Circuits
This electromechanical course requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling body electrical circuits; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of body electrical circuits and component parts.

MV1420 Ignition Systems
This course in ignition systems and emissions requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling ignition systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of ignition systems and component parts.
Prerequisite(s): MP1310

MV1430 Light and Medium Duty Starting and Charging Systems
This electromechanical course requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling light duty starting and charging systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of light duty starting and charging systems and component parts.
Prerequisite(s): MP1310

MV1550 Small Equipment Transmissions
This course in small equipment transmissions involves servicing lawn and garden equipment transmissions and differentials, chainsaws and drive systems, hydrostatic drives, snowmobile chain cases, motorcycle transmissions and crankshafts, motorcycle clutches, and marine equipment transmissions and velvet drives. It includes information on the design and function of transmissions, types of snowmobile chain cases, motorcycle transmission operations, motorcycle gear shifting mechanisms, motorcycle kickstarting operations, and motorcycle primary drives and clutch operations.

MV1620 Light & Medium Duty Cooling Systems
This course in cooling systems requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling light and medium duty cooling systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of light and medium duty cooling systems and component parts.

MV2310 Gasoline Injection Systems
This course in fuel systems requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling gasoline injection systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of gasoline injection systems and component parts.
Prerequisite(s): MP1310

MW1130 Power Transmissions
This course in industrial mechanics requires the use of tools and equipment, and materials and supplies. It involves disassembling and reassembling, installing, aligning and maintaining power transmissions. It includes information on the operation of power transmissions and components parts.

MW1140 Conveyor Systems
This course in industrial mechanics requires the use of tools and equipment, and materials and supplies. It involves disassembling and reassembling, installing, aligning and maintaining conveyor systems. It includes information on the operation of conveyor systems and component parts.

MW1150 Vibration Analysis
This course in industrial mechanics requires the use of tools and equipment, and materials and supplies. It involves analyzing vibration and balancing and aligning machinery. It includes information on the operation of balancing and alignment equipment.

MW1160 Alignment
This course in industrial mechanics requires the use of tools and equipment, and materials and supplies. It involves maintaining and replacing motors and aligning shafts using optical levelling and optical laser alignment equipment. It includes information on variable speed reduction units, optical levelling, optical laser alignment and shaft alignment techniques.

MW1210 Introduction to CNC Machining
This machining course requires the use of tools and accessories, and materials and supplies. It involves the basic operation and maintenance of computerized numerical controlled milling machines and lathes. It includes basic information on types and operation of CNC milling machines, component parts, and CNC lathes.

MW1220 Introduction to Milling
This machining course in milling requires the use of tools and equipment, and materials and supplies. It involves operating and maintaining milling equipment. It includes information on the operation of milling machines and component parts.

MW1310 Milling
This machining course in milling requires the use of tools and equipment, and materials and supplies. It involves operating and maintaining milling equipment. It includes information on the operation of milling machines and component parts.

MW1320 Advanced Machining (Lathes)
This machining course in advanced lathe work requires the use of tools and equipment, and materials and supplies. It involves precision machining on lathes. It includes information on the operation of lathes and accessories.

MW1330 Precision Grinding
This machining course requires the use of tools and accessories, and materials and supplies. It involves operating and maintaining grinders. It includes information on types and operation of grinders and component parts.

MW1340 Computerized Numerical Controlled Machining
This machining course requires the use of tools and accessories, and materials and supplies. It involves the operation and maintenance of computerized numerical controlled milling machines and lathes. It includes information on types and operation of CNC milling machines, component parts, and CNC lathes.

MW1350 Planers and Shapers
This course in planers and shapers requires the use of tools and accessories, and materials and supplies. It involves operation and maintenance of planers and shapers. It includes information on types and operation of planers and shapers and component parts.

MW1400 Precision Layout
This machining course requires the use of tools and equipment, and materials and supplies. It involves precision layout of bench work. It includes information on the operation of computerized numerical controlled machining mills and component parts.

MW1410 Basic Lathes
This machining course requires the use of tools and equipment, and materials and supplies. It involves using and maintaining lathes. It includes information on the operation of lathes and component parts.

MW1420 Emergency Power Systems
This course in power engineering requires the use of tools and equipment, instruments and material and supplies. It involves operation and preventive maintenance of emergency power systems. It includes information on types and operation of emergency power systems.

MW1430 Engine Operations
This course in engines requires the use of basic tools, shop equipment and test equipment. It involves compression testing and valve timing. It includes information on the operation of different types of engines and component parts.

MW1440 Seals and Bearings
This course in industrial mechanics requires the use of basic tools and equipment and materials and supplies. It involves removing, selecting, installing and maintaining seals and bearings and lubricants.

MW1500 Stationary Power Tools
This machining course requires the use of tools and equipment, and materials and supplies. It involves using and maintaining specialized machining tools. It includes information on the operation of specialized machining tools and component parts.

MX2100 Radiographic Anatomy
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 students be able to identify anatomical structures on the radiograph; differentiate between the normal and abnormal radiographic images; use 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 and cardiovascular system and their radiological significance will be discussed.
Prerequisite(s): Successful completion of 3rd semester.

MX2101 Radiographic Anatomy
This course is designed to thoroughly familiarize students with the structure, function, location, pathology and radiographic appearance of structures in the skull, as well as anatomical systems: Axial Skeleton (Skull), Digestive, Respiratory, Urinary, Reproductive, Nervous and Endocrine Systems. Included will be a discussion of the special sense organs of the eye and ear. Pathology especially that which may be demonstrated radiographically is also discussed.
Prerequisite(s): MX2100

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, film identification, patient/technologist relationship, examination protocol, radiation protection and technologist responsibility. Emphasis will be placed on basic, alternate, and specialized imaging of the appendicular and axial skeleton, angiography, and lymphangiography.
Prerequisite(s): BL2100

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, Reproductive, Endocrine and Skeletal and Nervous Systems. Discussion, demonstration and clinical application will include such areas as foreign body localization, mobile, operating room, accident radiog-

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raphy, and CT imaging.
Prerequisite(s): MX2100

MX2200 Image Recording
This course is designed to give students a comprehensive knowledge of the photographic process involved in the formation of the latent image as the sensitive emulsion of film is acted upon by radiant energy. It will allow the student to be knowledgeable about the construction of film material, as well as the many factors that affect the quality of the radiographic image so that the maximum amount of information becomes visible to assist in the diagnosis of any pathological or other causes of abnormal conditions that might be present.
Prerequisite(s): Successful completion of 3rd semester.

MX2201 Image Recording
This course is a continuation of MX2200. It is designed to provide students with a comprehensive knowledge of the physical design, function and maintenance of the processor. Performance of specific quality assurance procedures necessary to maintain a high standard of image quality will be emphasized.
Prerequisite(s): MX2200, MX2300
Co-requisite(s): MX2301

MX2301 Apparatus and Accessories
This course is developed to allow the student to gain a comprehensive knowledge of the major components of x-ray generating units. They will acquire the skills necessary to operate basic and present day sophisticated equipment effectively and efficiently. The student will be taught the physics of operation of advanced imaging modalities such as computerized axial tomography and digital radiography.
Prerequisite(s): MX2200, MX2300

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 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 3rd semester.

MX2400 Patient Care
This course is designed to provide the student radiographer with the necessary knowledge to provide good patient care in a variety of situations which might be encountered 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 3rd semester.

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, MX2100, MX2310

MX3200 Clinical Radiography I
This course is designed to expand on the clinical experience of 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 students to become competent in performing radiographic examinations in the following areas: vertebral column, thoracic cage, pelvic girdle / upper femora, shoulder girdle and operating room / mobile radiography. Students will also acquire clinical experience in Mammography and Arthrography.
Prerequisite(s): Successful completion of 5th semester

MX3210 Clinical Radiography II
This course is designed to expand on the clinical experience of 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: digestive system, accessory organs, urinary system, skull and operating room / mobile radiography. Students will acquire clinical experience in Myelography, Tomography, /Cardiovascular Imaging.
Prerequisite(s): Successful completion of 5th semester

MX3220 Clinical Radiography III
This course is designed to expand on the clinical experience of 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 students to become competent in performing all radiographic examinations on a pediatric patient, including urinary system (cystourethrography), upper extremity, lower extremity, pediatric chest and operating room / mobile radiography.
Prerequisite(s): Successful completion of 5th semester

OF1100 Office Management I ●
This course is designed to acquaint students with the significant role of the office employee in business, the importance of effective communication and the various communications methods used, and to enhance desirable personality traits and attitudes. Topics covered: office careers, interpersonal communications, electronic communications, telephone technology and techniques, and written information distribution (mail).

OF1101 Office Management II ●
This course examines filing systems and procedures used by office workers, manual and electronic methods of information storage and retrieval, types of microforms, and the need for records retention. Also, managing time, planning and organizing business travel, researching information, and planning meetings and conferences are explored.

OF1300 Professional Office Procedures
This course is designed to acquaint the student with the basic skills necessary to function in today's modern office.

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 conference and job search skills to refine the skills needed to become a successful and professional employee.

OF2101 Office Management IV
Students will complete an office simulation which will require them to perform research, make decisions, and apply time management skills.
Prerequisite(s): DM2200

OF2300 MCP Billing ●
This course is designed to emphasize the preparation of MCP claims forms relating to various medical procedures in accordance with the guidelines established by the Newfoundland Medical Care Commission.

OF2400 Medical Office Management I ●
This course is designed to acquaint the student with the role of the secretary in a hospital or in the office of a physician or other health care professional. It provides opportunities for the student to acquire knowledge on such topics as interpersonal relationships, reception and client management, health insurance, and general issues relating to prescriptions. There is a strong emphasis on the need for confidentiality in a medical environment throughout the course.
Prerequisite(s): OF1101

OF2401 Medical Office Management II ●
This course further develops the student's ability to function efficiently in a medical environment. Topics include medical ethics and medical law, current medical issues, records management, and planning and organizing meetings and conferences. As well, a time-limited medical office practice simulation program is utilized to acquaint the student with typical medical cases and to assist in the development of organizational, time management, and decision-making skills. Students are also given an opportunity to acquire job-search skills in the preparation of letters of application and resumes and in simulated interviews.
Prerequisite(s): OF2400

OF2500 Legal Office Procedures I
This course acquaints students with the role of the legal secretary and in particular educates the student in such areas as sources of law, memoranda of

law, diaries and client records, the Newfoundland court system, civil litigation, and incorporation procedures for Newfoundland. In addition, emphasis is placed on personal development of the students in such areas as tact, confidentiality, personality development, human relations, and personal appearance.
Prerequisite(s): OF1101
Co-requisite(s): DM2210

OF2501 Legal Office Procedures II
Students are informed of the basic legal procedures in Newfoundland regarding wills, the probate and administration of estates, the purchase and sale of real property, and family law. Emphasis is also placed on office management skills and further personal development in areas such as human relations, job awareness, and poise. This course closely parallels Legal Document Production II to ensure that students may again apply the theory learned. The students are also exposed to a legal or quasi-legal work environment through a four-week work exposure program.
Prerequisite(s): OF2500
Co-requisite(s): DM3210

OJ1100 Work Exposure (required for Certificate level)
Students gain an appreciation of the real work environment in a business or industry directly related to the area of training. This two-week period will be required in addition to academic content covered thus requiring students to attend intersession.

OJ1240 Work Exposure
Students gain an appreciation of the real work environment in a business or industry directly related to the area of training. This four-week period will be required in addition to academic content covered thus requiring students to attend intersession.

OJ1300 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 or a forestry related agency.
Prerequisite(s): Successful completion of all courses within the Forestry program (must be eligible to graduate).

OJ1301 On-The-Job-Training
This three-week unpaid workplace exposure program is designed to 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).

OJ1440 Work Term I
This is the first of two field related courses designed to assist students in obtaining occupational experience. This course is a two week workplace experience for students pursuing a Tourism Studies 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 during the last two weeks of the scheduled intersession.
Prerequisite(s): Successful completion of all courses in semesters one and two.

OJ1441 Work Term II
This is the second of two field related courses designed to assist students in obtaining occupational experience. This course is a three week workplace experience for students pursuing a Tourism Studies 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 during the last three weeks of the third semester.
Prerequisite(s): OJ1440 and satisfactory completion of all courses in semester three.

OJ1520 Work Exposure
Students are expected to complete four weeks of work exposure for completion of the diploma requirements.

OJ1530 Work Exposure
Students are expected to complete four weeks of work exposure for completion of the diploma requirements.

OJ1540 Work Exposure
Students are expected to complete four weeks of work exposure for completion of the diploma requirements.

OL1220 Motorized Equipment
This fundamental course requires the use of mechanical equipment and maintenance tools. It involves the operation and maintenance of motorized equipment. It includes information on specialized vehicles, hydraulic equipment and vehicle grounding.

OL1230 Power Tools and Utility Equipment
This fundamental course requires the use of maintenance tools and equipment. It involves operating and maintaining utility equipment and electric and gas power tools. It includes information on climbing equipment, dead-ending equipment, ladders and work platforms, small gasoline engines, power saws, gas and electric drills, hydraulic tools and rock drills.

OL1360 Power Lines Structures I
This transmission line installation course requires the use of tools, equipment and accessories. It involves handling, transporting and storing poles; digging holes; erecting, setting and moving poles; installing anchors. It includes information on rights of way, line construction (Helicopter), pole and anchor locations, submarine cables, transportation of poles, and pole line hardware.

OL1400 Primary Control Devices
This transmission line installation course requires the use of basic tools and equipment and test equipment. It involves installing, maintaining, and troubleshooting primary control devices. It includes information on high voltage switching, air break switching, metering, voltage regulation, isolation and protection, reclosing and sectionalizing, and supervisory control.

OL1500 Workplace Management
This fundamentals course requires the use of motorized patrol equipment, rescue equipment, and work site barriers and traffic cones. It involves patrolling, inspecting and reporting on transmission line problems; bucket rescue, pole top rescue, and rescue from confined spaces; installing and maintaining work site barriers; and controlling pedestrian traffic. It includes information on pole numbering, environmental regulations and transmission line problems such as broken conductors, cracked insulators, loose guy wires, and trees on the line; rigging and rescue harnesses; and warning devices and traffic regulations.

OL2110 Safety Grounding
This course in transmission line installation requires the use of basic tools and equipment. It involves de-energizing transmission lines and installing safety grounding. It includes information on safety regulations, power outage and tagging procedures, shorts and grounds, grounding theory and equipotential grounding.

OL2120 Quantity Cost Line Estimate
This transmission line maintenance course requires the use of transmission line specifications and costing information. It involves designing a line and estimating quantities and cost. It includes information on line components and types of transmission line systems.

OL2340 Primary Conductors
This transmission line installation course requires the use of tools, equipment and accessories. It involves installation and maintenance of primary conductors. It includes information on armour rods, connectors, conductor ties, lightning arrestors, types of conductors, stringing, sagging, tensioning and splicing.

OL2350 Secondary Conductors
This transmission line installation course requires the use of tools and equipment, and secondary conductor components. It involves installation and maintenance of secondary conductors. It includes information on types of armour rods, conductor ties, conductors, stringing, sag, tension, splicing and connectors.

OL2360 Power Line Structures II
This transmission line installation course requires the use of tools, equipment and accessories. It involves handling, transporting and storing poles; digging holes; erecting, setting and moving poles; installing anchors; and straightening and replacing poles. It includes information on rights on way, line construction (Helicopter), pole and anchor locations, transmission towers, submarine cable, transportation of poles, and poleline hardware.

OL2400 Underground Residential Distribution
This transmission line installation course requires the use of basic tools and equipment and test equipment. It involves installing, maintaining and troubleshooting underground residential distribution systems. It includes information on safety codes, primary and secondary bus underground, isolating and protective devices, and pad mounting transformers.

OL2410 Live Maintenance (Rubber Gloves)
This transmission line maintenance course requires the use of protective equipment, basic tools and test equipment. Live maintenance usually requires suitable weather conditions. It involves maintenance and installation of transmission line components on live lines. It includes information on safety requirements,

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overhead isolating and protecting devices, and hot stick equipment.

OL2420 Hot Stick Live Line Maintenance <35 kV
This transmission line maintenance course requires the use of protective equipment,
<35 kV hot stick equipment, block and tackle, and live line jack. Live line maintenance usually requires suitable weather conditions. It involves troubleshooting, maintenance and repair of <35 kV live transmission lines. It includes information on hot line tools, testing equipment, and tagging and permits.

OL2430 Hot Stick Live Line Maintenance 35 kV - 69 kV
This transmission line maintenance course requires the use of basic tools and equipment, protective equipment, 35 kV - 69 kV equipment, and tension pullers. Live maintenance usually requires suitable weather conditions. It involves troubleshooting, maintaining and repairing live transmission lines from 35 kV to 69 kV. It includes information on safety requirements, hot line tools, and bare hand maintenance.

OL2440 Hot Stick Live Line Maintenance > 69 kV
This transmission line maintenance course requires the use of basic tools and equipment, protective equipment, > 69 Kv equipment and strain carriers. Live maintenance usually requires suitable weather conditions. It involves troubleshooting, maintaining and repairing live transmission lines > 69 kV. It includes information on > 69 kV tools and equipment, tagging and permits.

OM1100 Basic Oil Burners
This course in heat generation systems requires the use of basic tools and equipment and materials and supplies. It involves sizing, installing, maintaining, testing and troubleshooting oil burner system components. It includes information on oil burner operations, types of oil burners, atomization and vaporization of fuels, fuel supply systems, principles of combustion, purpose of cleaning, advantages and disadvantages of oil burning units and component parts.

OM1110 Oil Burner Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

OM1200 Fuel Delivery Systems
This course in heat generation systems requires the use of tools and equipment, and materials and supplies. It involves design, installation and maintenance of fuel delivery systems. It includes information on operation and types of fuel delivery systems and component parts.

OM1220 Oil Burner Electrical Systems
This course is designed to give the Oil Burner Mechanic a knowledge of the principles of electricity. The course requires the use of electrical tools, various circuit components, and measuring instruments. It will involve constructing basic circuits, taking and reading various measurements, and performing basic calculations using Ohm's Law. It will cover such topics as DC voltage, AC voltage, current and resistance, electric power, line voltage drop, open circuit voltage, electron theory, low voltage transformer theory, magnetism, static electricity, motors, units of measure, and symbols. It will also cover conductors and insulators, grounding, series and parallel circuits, as well as series/parallel circuits and electromagnetism.

OM1310 Control Systems
Course provides training for the installation, operation and maintenance of piping and heating control systems.

OM1400 Warm Air Systems
This course in warm air systems requires the use of tools and equipment, test equipment and materials and supplies. It involves installation, testing and maintenance of warm air systems. It includes information on warm air systems and component parts.

OM1420 Alternate Wood Heating Generators
This course in heat generation systems requires the use of tools and equipment, and materials and supplies. It involves sizing, installing, maintaining, testing and troubleshooting alternative heat generators. It includes information on operation and types of alternate heat generators and component parts.

OM1430 Hot Water Systems
Course provides training for installing and maintaining hot water heating systems.

OM1510 Residential Mechanical Ventilation
This course in residential mechanical ventilation installation requires the use of tools and equipment, test equipment, material and supplies. It involves the installation, selection of equipment, system design and the balancing of residential mechanical ventilation systems in accordance with the National Building Code and Canadian Standard Association B326-M91.

OM1520 Combustion Venting Systems
This course in combustion chambers and venting of combustion gases requires the use of basic tools, equipment materials, and supplies. It involves the sizing, designing, selecting, installing, testing, and troubleshooting of combustion chambers and venting systems.

OM1530 Low Pressure Steam Heating Systems
Course provides training for the installation, operation and maintenance of low pressure hot water and steam boilers

PC1100 Political Science
An introductory course in political science with emphasis on Canadian, Provincial and Municipal institutions. Topics included are: The House of Commons, The Cabinet, The Judiciary, The Bureaucracy, Elections and Political Parties.

PE1500 Electrical Machines
This course introduces the student to electrical machines and transformers. It covers theory, typical configurations and operating parameters for both rotating machines and transformers. The students gain an appreciation of the machine types, circuit arrangements, and operating characteristics through lab exercises.
Prerequisite(s): ET2100

PE1610 Aircraft Electrical
The purpose of this course is to give the student an overview of aircraft power systems. Batteries, generators, alternators and ground power sources will be examined. 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.

PE2120 Electrical Practices
This course introduces the student to the plant electrical distribution system. It provides a foundation in the principles applied to the distribution, protection and control of plant power.
Prerequisite(s): PE1500

PE2430 Plant Electrical Systems
This course introduces the student to the plant electrical systems needed to support a modern production process, one that focuses on distributing, converting and controlling electrical energy in an effort to improve product quality and reduce operating costs. Topics include energy sources, power distribution in an industrial plant, energy conversion using motors, motor protection and control requirements, and digital controllers used for energy management (demand controller) and motor control (PLC).
Prerequisite(s): ET1101

PE2500 Electrical Practice (Main. & Des.)
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): CI1300, ET1101

PE2501 Electrical Practice (Main. & Des.)
This is an intermediate level course that covers the testing and repair of DC and AC motors, as well as an introduction to motors for use in hazardous areas, and ship safety electrical systems.
Prerequisite(s): PE2500, MP2900

PE2700 Industrial Instrumentation Practices
This course covers the care and use o f hand tools, safety, types of electrical protection.

PE2800 Industrial Mechanical Systems
The purpose of this course is to introduce the students to industrial mechanical systems. The students are expected to use this knowledge to assist with improving the efficiency of common mechanical processes, in an effort to improve product quality. Topics covered include the operation, application and maintenance of pumps, power transmission equipment, conveyors, seals and bearings; condition monitoring and preventive measures, including alignment issues, vibration analysis, and fluid sampling, and preventive and predictive maintenance techniques.
Prerequisite(s): PH1101, FM2320

PE3100 Electrical Practice
This course covers the installation of heating and lighting controls, transformer protection, short circuit analysis, commercial and industrial demand loads.
Prerequisite(s): PE2501

PE3101 Electrical Practice (Bldg. Elect.)
This is an advanced level course designed for electrical engineering technology students. It is intended to provide them with necessary information about electrical power systems. It is also to train them in the area of electrical system design. A project is included to reinforce theoretical concepts and enable students to apply them in the design process.
Prerequisite(s): PE3100

PE3110 Electrical Power Systems
This course is designed to upgrade the basic knowledge and skill learned to date. As 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): PE1610

PE4100 Electrical Practice (Bldg. Elect.)
This course is a continuation to Electrical Practice PE3101 (Building Electrical Design). It is designed for advanced electrical engineering technology students to provide them with the necessary information for completing electrical system design. The project started in the first term is continued and to be completed as a part of this course.
Prerequisite(s): PE3101

PF1100 Pipe Fabrication
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves using handbooks to perform pipe layout on the pipe, joint preparation, cutting, fitting and tack welding. It includes information and tables on cutbacks, cutlines, angles, angle of cuts, factors and constants.

PF1110 Pipe Fabrication (Template Development)
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves lay outs and template development. It includes information on various types of layouts, structural shapes, design and layout of pipe turns, laterals, end caps and special connections non-stock type welded joints.

PF1120 Ferrous Pipe Assembly
This course in ferrous piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting, measuring, cutting, fitting and tack welding. It includes information on the assembly of different types of pipes and component parts.

PF1130 Non-Ferrous Pipe Assembly
This course in non-ferrous piping fundamentals requires the use of tools and equipment, materials and supplies. It involves selecting, measuring, bending, threading, flaring, swaging and compression joints. It includes information on the assembly of different types of pipes and component parts.

PF1140 Plumbing Fundamentals
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting, measuring, bending, threading, flaring, swaging and compression joints. It includes information on the assembly of different types of pipes and component parts.

PF1150 Introduction to Piping and Heating Control Systems
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting, measuring, bending, threading, flaring, swaging and compression joints. It includes information on the assembly of different types of pipes and component parts.

PF1160 Piping Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

PF1170 Pipe Blueprint Reading
This drafting course requires the use of pipe drawings, specifications, bills of materials, drawing instruments and facilities. It involves reading industrial pipe drawings, sketches, flow sheets, spool sheets, plot plans, orthographic pipe projection, isometrics, isometric dimensioning, interpretation of pipe specifications. It includes information on locating specific points using Cartesian coordinates and the compass points and elevations.

PF1210 Piping and Heating Control Systems
This course in piping systems requires the use of tools and equipment, and materials and supplies. It involves installation, operation, testing and maintenance of piping and heating control systems. It includes information on types and operation of control systems and component parts.

PF1220 Pump Installation
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting, installing, testing and adjusting pumps. It includes information on various types of pumps and component parts.

PF1240 Pump Maintenance
This course in piping fundamentals requires the use of tools and equipment, materials and supplies. It involves operating, maintaining, testing and adjusting pumps. It includes information on various types of pumps and component parts.

PF1300 Low Pressure Steam Boiler Systems
This course in low pressure steam boiler systems requires the use of tools and equipment, test equipment and materials and supplies. It involves sizing, installing, operating, testing and maintaining low pressure steam boiler systems. It includes information on operating parameters and types of steam boilers and component parts.

PF1330 Alternative Heat Generators
This course in heat generation systems requires the use of tools and equipment, and materials and supplies. It involves sizing, installing, maintaining, testing and troubleshooting alternative heat generators. It includes information on operation and types of alternate heat generators and component parts.

PF1510 Plumbing Venting Systems
This course in piping systems requires the use of tools and equipment, and materials and supplies. It involves sizing, selecting and installing plumbing venting systems. It includes information on operation and types of venting systems and component parts.

PF1520 Plumbing Appliances
This course in piping systems requires the use of tools and equipment, and materials and supplies. It involves installation and maintenance of plumbing appliances. It includes information on types and operation of appliances and component parts.

PF1530 Drainage and Sewage Disposal Systems
This course in piping systems requires the use of tools and equipment, and materials and supplies. It involves design, installation, testing and maintenance of drainage and sewage disposal systems. It includes information on drainage and sewage disposal systems and component parts.

PF2210 Valves
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting installing, operating, maintaining, testing and adjusting valves. It includes information on types of valves and component parts.

PF2230 Steam Systems
This course in piping requires the use of tools and equipment, test instruments and materials and supplies. It involves installing, operating, testing and maintaining steam systems. It includes information on types and operation of steam systems and component parts.

PF2240 Hot Water Heating Systems
This course in piping systems requires the use of tools and equipment, test equipment and materials and supplies. It involves installing, operating, testing and maintaining hot water heating systems. It includes information on types and operation of hot water heating systems and component parts.

PF2300 Industrial Burners
This course in heat generation systems requires the use of tools and equipment, test equipment and materials and supplies. It involves sizing, installing, operating, maintaining, testing and troubleshooting industrial burners. It includes information on types of industrial burner systems and component parts.

PF2410 Specialized Piping Systems
This course in piping systems requires the use of tools and equipment, test instruments and materials and supplies. It involves installation, testing and maintenance of specialized piping systems. It includes information on types and operation of specialized piping systems and component parts.

PF2440 Specialty Piping
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting, measuring, cutting, threading, and joint preparation and installation procedures for stainless steel, chromyl and heavy wall pipe.

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PF2500 Cross Connection Control
This course involves selecting, testing, and troubleshooting various types of back-flow prevention devices. It includes information on code requirements, industry standards and manufacturer's specifications.

PH1100 Physics ●
This is an introductory physics course designed to extend students knowledge and understanding of basic physics principles, concepts and applications relating to mechanics. This course also extends abilities in data handling, problem solving and experimentation.
Prerequisite(s):

PH1101 Physics
This is a second semester course designed to extend the student's knowledge and understanding of basic Physics principles, concepts and applications relating to kinetic theory, heat, vibrations, sound and light. It also extends abilities in data handling, problem solving and experimentation.
Prerequisite(s): MA1100, PH1100

PH1120 Physics
This is an introductory course designed to extend students knowledge and understanding of the basic concepts, principles and applications of mechanics. Topics covered include: kinematics in one and two dimensions, vectors, dynamics, equilibrium, work and energy, and linear momentum.
Prerequisite(s): Level III Academic Mathematics with a minimum mark of 70%, or a pass in Advanced Mathematics; or successful completion of PH1010. Transferable to MUN Physics 1020.

PH1121 Physics
Transferable to MUN Physics 1021.
This introductory course is a continuation of PH1120. Topics covered are fluids, vibrations and waves, sound, electric charge and electric field, electric potential and potential energy, electric current, D.C. circuits and instruments, magnetism and geometrical optics.
Prerequisite(s): PH1100 or MUN Physics 1020.

PH1200 Physics
This is a second semester course designed to extend students knowledge and understanding of basic physics principles, concepts and applications relating to waves, sound, light, heat and electricity.
Prerequisite(s): PH1100 or PH1120

PH1201 Physics
This is an intersession course designed to extend students knowledge and understanding of physics principles, concepts and applications relating to electricity and magnetism.
Prerequisite(s): PH1200 or PH1121

PH2200 Radiation Physics
This is a radiation course designed for medical radiography students. It will give them an understanding of:
1. X-ray physics; the nature of x-rays, the production of x-rays with matter.
2. Radiation dosimetry; radiation exposure, absorbed dose, dose equivalent, effective dose equivalent, detection of radiation and dosimeters.
Prerequisite(s): PH1201

PH2400 Analytical Mechanics
This course is intended to provide the student with the solid base in the concepts of mechanics and their application to structures and electric machinery.
Prerequisite(s): MA1101, PH1100

PH3100 Geophysics
Geophysics involves the study of the earth through the application of physics. Geophysics is a broad discipline with applications in mineral exploration, oil and gas exploration, industry and academic research. This course is a basic introduction to geophysical exploration in the oil and gas industry. Topics will center around the major exploration tools -- Seismic, magnetics and gravity.
Prerequisite(s): GE2500

PM2100 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): CF2520, FM2300, GE1501

PM2101 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): PM2100

PM2200 Petroleum Production I
An introductory course in Petroleum Production operations introducing the major processes and equipment involved in initiating and maintaining production from a wellbore. The course stresses an interdisciplinary approach to well completion and work over planning by introducing concepts of total quality management. Topics include well completion design for both conventional and horizontal wells, tubular selection including interactions with packers, subsurface control equipment, formation damage, completion and work over fluids, perforating oil and gas wells, scale deposition, prevention and removal treatments, surfactants, acidizing, hydraulic fracturing and work over and completion systems.
Prerequisite(s): PM2500, PM2100

PM2201 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): MA2110, PM2200

PM2300 Reservoir I
A first of two courses designed to provide an introduction to the principles and practices of petroleum reservoir engineering. The first course serves as an introduction allowing the student to master the concepts of basic reservoir engineering theory and application, providing him/her with the knowledge and skills to effectively study more complex problem solving techniques covered in the second course.
Prerequisite(s): MA2110, TD2110

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 analyse flow problems for a variety of reservoir boundary conditions. The course also deals in significant detail with the analysis of oil and gas well test data, utilizing the methods of pressure build-up testing and type curve matching. The course concludes with the presentation of the unsteady state water influx theories to enable prediction of the amount of water influx into a reservoir.
Prerequisite(s): MA2110, PM2300

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): CH2310, GE2500, PH3100

PM2401 Production Logging & Applications
This is a course in interpretation. It will cover production logging tools and the interpretation of the data obtained from those tools.
Prerequisite(s): PM2400

PM2500 Facilities Engineering
This course presents the basic concepts and techniques necessary to design, specify and manage oil field processing equipment. The course has a project component where course work is related to the development of an oil field.
Prerequisite(s): CF2520, FM2300, MA2100

PM2501 Facilities Engineering
A course which presents the basic concepts and techniques necessary to design, specify and manage gas processing equipment. Major topics include: heat transfer theory, heat exchangers, hydrates LTX and indirect fired heaters, condensate stabilization, acid gas treating, gas dehydration, gas processing, compressors, mechanical design of pressure vessels, pressure relief, safety systems and electrical systems overview.
Prerequisite(s): PM2500, TD2110

PM3100 Drilling Technology III
This is an advanced course in drilling engineering which uses simulation software to perform engineering analysis and optimization, well planning and data management. Students build on and apply the skills and knowledge developed in two previous drilling engineering courses by using simulation software to carry out well planning and drilling engineering analysis and optimization. As a complement to the course labs, students are required to prepare a detailed drilling program and Application for Expenditure (AFE).
Prerequisite(s): PM2101

PM3200 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): PM2201

PR2110 Project ●

This Website Administrator project course is offered during the fourth semester. During this course students will research and develop website concepts. Students will design and create customized homepages specific for e-commerce clients. Students will maintain and administer websites in a theoretical framework (classroom). The Website Administrator student will research the client's concept, refine the concept, design and develop the web page that will articulate that concept.

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.

PR2201Technological 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

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

PR2230 Technical Thesis (Seminar)

The investigation of subjects of interest for the selection of a topic for the students Technical Thesis. The period will be used for individual investigation and evaluation of geomatics subjects in consultation with an academic instructor.
Prerequisite(s): All courses in previous academic semesters.

PR2231 Technical Thesis

The technical thesis will allow for the integration of the academic, laboratory and workplace knowledge gained during the course of study in the Geomatics Engineering technology program. The Technical Thesis will allow the student to demonstrate the knowledge and skills developed during their course of study. The thesis will allow the student to do a more in-depth study and experimentation and analysis in a particular area and on a topic of interest.
Prerequisite(s): All courses in previous academic semesters.

PR2300 Major Technical Project

This course exposes students to a major technical project that will be continued and developed in subsequent semesters. It is also designed to provide students with the opportunity to apply knowledge and skills gained in previous semesters to this project. Topics covered are broken down into the following areas: Architectural Working Drawings, Building Services, and CAD. It is intended that students develop a preliminary data base of their projects and to extensively address site development problems. Individual student presentations will be made.
Prerequisite(s): DR3101, BU2401, CF2601, BU2301, BU2201, BU2200, EG2200

PR2450 Systems Project Proposal

The Systems Project Proposal enables students to use the time during the semester prior to PR2451 to prepare for their project. Groups will be assigned during this semester and the project will be distributed to the groups. Because of the diverse work term locations of the students, communication will be done using e-mail. The proposal will be due for presentation during the first two weeks of the next term. Students taking this course will work in teams of four, or five on a project, under the supervision of a faculty supervisor, and will perform a preliminary analysis of a problem.
Prerequisite(s): CM2200, CP3420, CP4420 or equivalent.

PR2451 Systems Project

The systems project enables students to demonstrate the application of knowledge and skills developed through their program. Students taking this course will work in teams of four on a project, under the supervision of a faculty supervisor, and will perform the following: (1) an in-depth analysis of a problem; (2) a design and implementation of the problem; (3) full documentation and a presentation of their solution.
Prerequisite(s): CM2200, CP3420, CP4420 or equivalent, PR2450

PR2500, PR2510, PR2511, PR2601, PR2610, PR2611, PR2620, PR2630, PR2631, PR2632 Technical Thesis (Seminar)

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): All courses in previous academic semesters.

PR2550 Technical Thesis I

This course is designed to instruct students in the proper methods of research techniques and report writing. Data collection strategies will be explored; and the planning, organizing, and presenting of information will be emphasized. Students will be required to submit a research proposal that, upon approval, will lead to the development of a technical report.
Prerequisite(s): CM1400, CM1401

PR2551 Technical Thesis II

This technical thesis project enables the student to demonstrate the application of knowledge and skills developed through the program. Students will learn to plan and execute a series of experiments or investigations in one of the three subject areas of biology, chemical, or environmental engineering. The student will carry out an in depth study of a problem, design or technological application, and fully document and present their findings. Emphasis is on long-term planning, organization of information and equipment, record keeping, and presentation of findings. The communication of results, formally and informally, in writing and orally, is stressed throughout. Students taking this course will work independently on a project under the supervision of a faculty advisor.
Prerequisite(s): PR2550

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 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): semester 6 Complete & GPA of 2.00

PR2650 & PR2651 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.
Prerequisite(s): CM1401

PR2660 Technical Project and Presentation

This technical thesis project enables the student to demonstrate the application of knowledge and skills developed throughout the program. Students will learn to plan and execute a series of experiments or investigations in a subject area related to the field of study. The student will carry out an in-depth study of a problem, design, or technological application, and fully document and present his/her findings. Emphasis is on long-term planning, organization of information and equipment, record keeping, and

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presentation of findings. The communication of results, formally and informally, in writing and orally, is stressed throughout. Students taking this course will work independently on a project under the supervision of a faculty supervisor.
Prerequisite(s): CM1401

PR2680/PR2681 Technological Thesis
The technological thesis enables the student completing a Diploma Program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. Students will select project topics, in consultation with instructors and industry contacts. Students will carry out an in-depth study of a problem, design, or technological application, and fully document and present their findings. The technical thesis development process includes problem solving and the engineering design process, project identification, project analysis, project research, report preparation and report presentation.
Prerequisite(s): Successful completion of all courses scheduled before the last term.

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

PR2800 Technological Thesis (Seminar)
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 a technological application, and fully document and present their findings.
Prerequisite(s): CM1401

PR2801 Technological Thesis (Project Analysis)
The technological thesis enables the student completing a diploma program to demonstrate the application of knowledge and skills developed throughout the program. Students taking this course will work independently on a project, under the supervision of a faculty supervisor. They will carry out an in-depth study of a problem, design or technological application, and fully document and present their findings.
Prerequisite(s): CM1401

PR3711 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 a 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

PR3800 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 a technological application, and fully document and present their findings.
Prerequisite(s): CM1401

PS1100 Psychology ● ⊗
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.

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

PS1151 Psychology ●
Transferable to MUN Psychology 1001.
An introduction to psychological theory and research in the areas of human cognition and emotion, motivation, personality, psychological disorders and treatment, social psychology, health and stress, and sexuality.
Prerequisite(s): PS1150 or MUN Psychology 1000.

PS1230 Understanding Addictions
This course takes a detailed look at how alcohol and/or drug addiction affects an individual. (1) It examines the nature of dependency on a physical, psychological, and emotional level. (2) This information will then be utilized to teach students basic assessment, intervention, and counseling techniques. (3) Students will receive a detailed understanding of the process of change, relapse prevention, and stages of recovery in addiction. (4) They will also learn how addiction impacts upon a family, and utilize this information to conduct a comprehensive assessment. (5) Students will also acquire more knowledge on how addiction affects specific populations, (youth, women, seniors, natives, and adult children of alcohol/drug users). (6) Finally, they will develop an understanding of gambling addiction, individuals with FAS/ARBD, and addiction and violence.
Prerequisite(s): PS1100; PS1101; PS1200, CS2200

PS1330 Organizational Behaviour
This course is designed to provide an understanding of the basic principles underlying workplace behaviour with particular emphasis on the applications for effective supervision in the contemporary workplace.

PS1360 Behaviour Management
This course covers the principles and practice of behaviour modification and introduces the student to principles of Gentle Teaching. These principles are viewed as tools to facilitate teaching persons with development disabilities as well as methods of understanding behaviour.

PS2200 Developmental Psychology
This course covers the basic concepts, principles, and theories and examines each stage of development from conception to adolescence.
Prerequisite(s): PS1100 or PS1101

PS2220 Developmental Psychology ● ⊗
This course will explore human development at different periods of the lifespan, including physical and psychological growth. It will provide a perspective on the many changes that occur during a person's life, and examine reasons for developmental change or disturbance.

PS2340 Organizational Behaviour ●
This course is an introduction to the study and practical application of organizational behaviour. It concerns itself with the behaviour of people within organizations to achieve personal and organizational goals. Topics to be covered include: introduction to organizational behaviour, motivation, stress management, individual differences, attitudes and ethics, interpersonal communications. It covers the principles and processes of socialization, communications, decision making, and adapting to change in today's workplace.

PT1100 Power Plant Fundamentals
This course will provide students with the basic knowledge of the design construction and theory of operation of aircraft reciprocating engines. Students will perform engine ground-runs and basic servicing.
Prerequisite(s): GM1100, GM1200

PT2100 Reciprocating Engine Systems
This course will provide knowledge of reciprocating engine internal systems, their design, construction, operation and maintenance.
Prerequisite(s): PT1100, AS2500

PT2101 Reciprocating Engine Overhaul
This course will provide the student with the knowledge of reciprocating engine inspection removal, installation, overhaul and maintenance procedures, so that he/she can develop sound maintenance practices.
Prerequisite(s): PT2100

PT2200 Turbine Engine Maintenance
This course is designed to provide the student with a comprehensive knowledge of turbine engine design and operation.
Prerequisite(s): GM1100, GM1200

PT2201 Turbine Engine Systems
A detailed description of turbine engine systems and installations. Particular attention is paid to the lubricant systems and fuel controls of the PT6 and Allison 250 engines. Helicopter application of turbine

engines is discussed in detail.
Prerequisite(s): PT2200

PY1100 Basic Photography
This course introduces students to basic photographic techniques, teaching the use of the 35 mm camera as a tool for expression. It also teaches the fundamentals of black and white film processing and printmaking. It lays the ground work for further use of the camera in creative photography and photojournalism. Students will learn to expose a composed, focussed image on film and print the image on paper with the tonal qualities of the existing scene.

PY1101 Photography
In this course Visual Arts students continue to improve and refine the skills and concepts acquired in PY1100 Photography. Emphasis is on print quality, photo composition and using the camera for effective personal expression.
Prerequisite(s): PY1100

PY1310 Photojournalism
This course introduces students to basic photographic principles and techniques, teaching the use of 35 mm and digital cameras as a tool for expression. It teaches the fundamentals of black and white film processing and printmaking. Students learn to digitize their negatives and prints and are introduced to imaging software.

PY1311 Photojournalism II
This is an advanced course in photography for journalism students. Students apply basic camera, darkroom and digital processing skills to the task of producing photographs for print and online publications.
Prerequisite(s): PY1300

RF1100 Refrigeration Fundamentals
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves testing refrigeration systems for temperature and pressure. It includes information on refrigeration principles, refrigerants, testing, heat loss and gain, insulation and types of systems.

RF1120 Refrigeration Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

RF1130 Refrigeration Systems & Components
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves selecting components, testing components, sizing metering devices, planning system, mounting components, building system, testing pressure, evacuating the system, charging the system, operating the system and recovering refrigerant. It includes information on types and operation of refrigeration systems and component parts.

RF1140 Refrigeration Piping
This course in piping fundamentals requires the use of tools and equipment, and materials and supplies. It involves selecting, measuring, bending, threading, flaring, swaging and compression joints. It includes information on the assembly of different types of pipes and component parts.

RF1200 Packaged and Split Air Conditioning Systems
This course in air conditioning requires the use of tools and equipment, test instruments and materials and supplies. It involves designing, installing, troubleshooting and servicing packaged and split conditioning systems. It includes information on types and operation of packaged and split air conditioning systems and component parts.

RF2110 Domestic Refrigeration Systems
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves installation, troubleshooting and repair of domestic refrigeration systems. It includes information on types of domestic refrigeration systems and component parts.

RF2130 Refrigeration Control Systems
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves moving, inspecting, testing, rebuilding and replacing refrigeration control devices. It includes information on types and operation of control devices and component parts.

RF2140 Commercial Refrigeration Systems
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves sizing, installation, troubleshooting and repair of commercial refrigeration systems. It includes information on types and operation of commercial refrigeration systems and component parts.

RF2150 Industrial Refrigeration Systems
This course in refrigeration systems requires the use of tools and equipment, measuring instruments and materials and supplies. It involves sizing, installing, troubleshooting and repairing industrial refrigeration systems. It includes information on types and operation of industrial refrigeration systems and component parts.

RF2160 Compressors
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves removal, inspection, testing, rebuilding and replacing compressors. It includes information on types and operation of compressors and component parts.

RF2210 Central Air Conditioning
This course in air conditioning requires the use of tools and equipment, test instruments and materials and supplies. It involves designing, installing, troubleshooting and servicing central air conditioning systems. It includes information on types of central conditioning systems and component parts.

RF2300 Heat Pumps
This course in refrigeration systems requires the use of tools and equipment, test instruments and materials and supplies. It involves sizing, installing, troubleshooting, and repairing heat pumps. It includes information on types and operation of heat pumps and component parts.

RM1400 Wildlife Techniques I
This course will expose students to the various techniques used in wildlife research and management. This course provides theoretical and practical training of mammal and bird capture techniques, handling and tagging, chemical immobilization and radio / biotelemetry techniques.
Prerequisite(s): BL1400

RM1401 Wildlife Techniques II
This course investigates methods to determine sex, age, size and maturity of mammals and birds. Current techniques used to inventory and monitor mammal and bird populations will be studied.
Prerequisite(s): BL1400

RM1500 Fisheries Techniques I
This course will expose students to the various techniques used in fisheries research and management. This course provides theoretical and practical training of fish capture techniques, handling and tagging, chemical immobilization and radio / biotelemetry techniques.
Prerequisite(s): BL1400

RM1501 Fisheries Techniques II
This course investigates methods to determine sex, age, size and maturity of fish. Current techniques used to inventory and monitor fish populations will be studied.
Prerequisite(s): BL1400

RM2200 Habitat Assessment
This course will enable students to identify and classify fish and wildlife habitats.
Prerequisite(s): FR1330

RM2410 Wildlife Techniques III
This course is designed to train individuals in field and laboratory techniques used in wildlife research and management. It involves determining the cause of death of mammals and birds, the collection and preservation of biological samples, analysis of diet and the identification of parasites and diseases. It includes information on anatomy, necropsy techniques, parasites, diseases, preservatives, collecting methods, species identification and safety precautions.
Prerequisite(s): BL1400

RM2420 Habitat Management
This course involves management including habitat enhancement, reclamation, and protection techniques.
Prerequisite(s): RM2200

RM2500 Fisheries Techniques III
This course is designed to train individuals in field and laboratory techniques used in fisheries research and management. It involves determining the cause of death of fish, the collection and preservation of biological samples, analysis of diet and the identification of parasites and diseases. It includes information on anatomy, necropsy techniques, parasites, diseases, preservatives, collecting methods, species identification and safety precautions.
Prerequisite(s): BL1400

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RP1100 Introduction to Records Management
This course is designed to introduce students to the records and information management discipline. The topics covered will make students aware of the history and role of records management, career opportunities, and professional associations. Students will study the life cycle of records, records inventory procedures, records appraisal, records retention principles, the use/function of records manuals, and current trends in the discipline.

RP1101 Management and Control of Records
This course is designed to further explore the records and information management discipline. The topics covered will further develop the student's ability to manage all types of documents. Students will also be introduced to records control, quality control and improvement, and special media.
Prerequisite(s): RP1100

RP1200 Archives Principles
This course introduces students to the study of archival storage. Archives will be examined from their evolution to their current role/function. Students will examine archival principles and procedures and career opportunities in the discipline.

RP1300 Active and Semi-Active Records
This course involves a detailed examination of active and semi-active records. Students examine each group of records in terms of storage, maintenance, and retrieval procedures; supplies and equipment are examined in terms of suitability and cost. Records destruction policies and procedures are examined.

RP1400 Information Security and Procedures
This course is designed to teach students the fundamentals of information security and procedures. The topics covered will make the students aware of the legislation and litigation procedures involved with information security. Students will study retention requirements, the need for security, and the classification of vital records, as well as disaster prevention and recovery and the use/function of manuals.

RP2200 Classification Systems
This course is designed to teach students the fundamentals of classification systems. The topics covered will make students aware of the different types of classification systems and show them how to select one that is appropriate for a particular group of records; they will be given an opportunity to work on projects involving these various systems.
Prerequisite(s): RP1300

RS1100 Community Recreation Leadership
This course is an introduction to the community recreation delivery system. The importance of dynamic leadership in the recreation delivery process will be emphasized. Students will complete the certified Play Leadership Program of the Newfoundland and Labrador Parks and Recreation Association (NLPRA) and will be involved in practical hands-on leadership techniques.

RS1230 Creative Activities in Recreation
This course is an introduction to basic materials, supplies and methods necessary to present activity programs with emphasis upon quick crafts. These crafts may be used in a variety of leisure and recreation programs such as: guiding/scouting groups, boys and girls clubs, senior citizen homes and community recreation centres.

RS1240 Recreation Activities/Racquet Sports
This course is designed to expose the student to a variety of recreational related activities creating a better understanding of their role in recreation service programming and as a regular component of active living. Students will participate, plan, lead and evaluate recreation activities such as walking, hiking, gardening and indoor games. Students will be provided with the opportunity to attain certification in the 3M National Coaching Certification Program.

RS1250 Introduction to Recreation Activities
This course is designed to provide exposure as well as develop leadership skills in a variety of recreation activities. It is designed to provide theory on such topics as; the place of sport in society, in particular the role of all levels of government in administering sport, leadership techniques, safety in recreation activities, history of indoor/outdoor recreation activities. Students will be introduced to the methods of scheduling teams and individual sports competitions. Students will be directly involved in the planning and conducting of a provincial sport governing body sanctioned tournament. Students will, as well, be provided with the opportunity to create an awareness of the potential for meaningful recreational pursuits available in our community.

RS1280 Program Planning
This course is an introduction to the six steps of the programming process required to produce quality recreation programs. In addition, participants will apply planning principles to college activities.

RS1320 Recreational Administration
This course is a study of the administrative and organizational procedures used in the management systems of community and voluntary recreation agencies. Topics included are: history of recreation management, roles of recreational departments, advisory boards, and commissions, legal aspects of recreation, risk management and insurance, basic budgeting principles, examination of grant programs, and basic office management procedures.

RS1370 Recreation Activities II
This course is a study of the principles of effective outdoor leadership and the application of these principles to selected outdoor experiences. Outdoor recreation, tourism, ecotourism, and the organized recreation program potential in Newfoundland will be examined with a focus on leadership skills and group dynamics.

RS1400 Community Agencies
This course is a study of local organizations involved in providing community and recreation services in Newfoundland, with emphasis upon those organizations concerned with youth and special interest groups.

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
The purpose of this course is to introduce the student to the field of therapeutic recreation. The course addresses the provision of recreational services to and meeting the recreation needs of the special clients in our society. Some of the special clients include: the hearing impaired, the mentally challenged, the visually impaired, the physically challenged, and the aging.

RS1460 Gerontology & Recreation Programming
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. The course will provide the student with the framework necessary to design recreation programs for older adults. It prepares students who will assist older adults to continue to maintain a sense of self-worth, dignity and fulfillment.

RS1520 Risk Management in Recreation
This course will discuss the various forms of business and legal issues concerning recreation administration and operation of organizations and facilities operated by recreation practitioners. The Canadian legal system will be addressed. Risk management techniques will be examined. Insurance coverage, overview of legal process, areas of concern to the sport/recreation educator/administrator as well as legal authority and risk management.

RS1530 Therapeutic Recreation Program Design
The students will be introduced to a number of key principles and procedures that are paramount in the development and delivery of comprehensive therapeutic recreation services and programs. The course material will focus on the importance of therapeutic recreation programming and various other theoretical and philosophical foundations for therapeutic recreation services.
Prerequisite(s): RS1450

RT2200 Gas Supply and Control
A study of the administration of medical gas therapies with the primary emphasis on the principles of operation of the various types of equipment utilized in the delivery of respiratory therapy.
Prerequisite(s): Successful completion of 3rd semester.

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 4th semester

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 4th semester

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 3rd semester

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 and anesthetized patient and complications of anesthesia.
Prerequisite(s): Successful completion of 4th semester

RT2440 Neonatal/Pediatric Respiratory Care
This course introduces students to the impact of anatomical and physiological difference between infants, children, and adults on the clinical management of these patients. Major areas of study are gestational lung development; fetal-neonatal transition; newborn assessment; thermoregulation; neonatal and pediatric cardiopulmonary pathophysiology.
Prerequisite(s): Successful completion of 4th semester

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 3rd semester

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-lead ECG strips, clinical significance, and basic treatment of arrhythmias is also studied.
Prerequisite(s): Successful completion of 4th semester

RT2600 Advanced Life Support
A study of the American Heart Association/Canadian Heart Foundation guidelines for Advanced Cardiac Life Support, Pediatric Advanced Life Support, and Neonatal Resuscitation. Formal certification is not granted at the end of this course.
Prerequisite(s): Successful completion of 5th semester

RT2800 Adult Care I
This clinical rotation allows the Respiratory Therapy student to acquire clinical skills in many different areas of adult respiratory care. Students will acquire competencies and clinical proficiency through the care of patients' in the: Emergency Room, Intensive Care Unit, Medical and Surgical Wards, Pulmonary Function Laboratory, Sleep Study Laboratory and Anesthesia environment.
Prerequisite(s): Successful completion of second year

RT2801 Adult Care II
This clinical rotation is designed to develop the student's clinical proficiency in Adult Respiratory Care in Critical Care, General Therapeutic and Anesthesia settings.
Prerequisite(s): Successful completion of second year

RT2900 Pediatric Neonatal Care
This clinical rotation allows the Respiratory Therapy Student to acquire clinical skills in many different areas of adult respiratory care. Students will acquire competencies and clinical proficiency through the care of patients' in the Pediatric, and Neonatal Intensive Care Units, Medical & Surgical Wards, Pulmonary Function Laboratory, Anesthesia environment, and Home Care.
Prerequisite(s): Successful completion of second year

RT3100 Clinical Elective/Review
During the last four weeks of the program, the students may select or be assigned to an elective area. Review of the didactic and clinical training will be conducted to prepare the students to sit the CSRT examinations.
Prerequisite(s): RT2800, RT2801, RT2900

RT3400 Comprehensive Respiratory Care
This course is designed to assist students with integration of knowledge and skills necessary for clinical care of all patients requiring respiratory treatment. Through problem-based learning and supervised clinical experience, students will focus on the therapeutic management of all categories of patients.
Prerequisite(s): Successful completion of 5th semester

RW3100 Rotary Wind Aircraft
The purpose of this course is to introduce the student to the helicopter and the helicopter industry in Canada. To provide students with a knowledge of helicopter fundamentals, theory of flight and main rotor systems. This is to enable students to perform maintenance functions on a helicopter main rotor and associated systems.
Prerequisite(s): GM1100, GM1200

RW3101 Rotary Wind Aircraft Systems
The purpose of this course is to provide students with a knowledge of the basic systems found on a helicopter. This will enable the student to perform inspection maintenance and repair functions on the aircraft as a whole.
Prerequisite(s): RW3100

SC1100 Sociology
This course examines the rapidly growing field of sociology in its relation to the pressing social issues of contemporary society. Its intent is to introduce students to the fundamental concepts of sociology and provide data and discussion of sociological analysis from a Canadian perspective.

SC1120 Sociology I
This is an introductory sociology course. Students are introduced to the methods and perspectives of sociology, and then apply these approaches to the study of contemporary Canadian society.

SC1121 Sociology II
A critical look at Newfoundland and Labrador society and culture. By developing a sociological perspective, students gain a better understanding of their own society and culture.

SC1150 Sociology ●
Transferable to MUN Sociology 1000.
This course introduces the concepts, principles and topics of sociology. The theoretical foundations of modern sociology are examined. The works of such social theorists as Karl Marx, Emile Dukheim and Max Weber are studied in conjunction with 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, collective behaviour, groups and organizations, social stratification, deviance and crime, race and ethnicity, sex and gender, and work and the economy.

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

SC1240 Healthy Aging-The Older Adult
This is an introductory course. 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 Women's Studies I
The course overviews events leading to the Women's Movement in a Canadian and Newfoundland context. It examines many of the contributions and achievements made by women, while also analyzing many of the persistent barriers to full equality for women.

SC1301 Women's Studies II
This course examines and analyzes issues and concerns facing women in contemporary society from a feminist framework. Topics for examination and analysis include women and violence, women and power, women and the media, women and addictions, and women's health issues.
Prerequisite(s): SC1300

SD1130 Field Work Preparation
This course is the first in a series of field-related courses designed to assist students in obtaining occupational experience. It is designed to prepare students for placement with human service agencies.

SD1400 Work Term Preparation
This is a pass/fail course that is to be completed by all co-op students in the School of Information Technology two semesters prior to the first co-op work term. This course will allow the student to obtain an information technology industry overview and to experience a self and career assessment process. An Experiential Education Model will be introduced as part of the co-operative education process.

SD1401 Work Term Preparation
The goals of this course are to introduce job search techniques and identify hidden job sources, assist each student in preparing for interviews and under-

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standing guidelines to follow prior to, during and after the interview.

SD1420 Workplace Skills
This course develops sound customer service skills in the student and assists the students in preparing for job search and the office environment. Practical exercise cases and behavioural modelling are conducted to assist the student's skill development and knowledge of customer service and expected work ethic, attitude and skills.

SD1450 E-Business Career Development ●
This course is designed to assist students acquire skills in job search preparation and techniques. Emphasis will be placed on achieving a professional approach. Students will learn how to assess and refine their own skills and to match those skills with employment opportunities in an e-business environment. Techniques for effectively using electronic job banks and other online job search tools will be explored.

SD1520 The Technologist and the Workplace
This is an introduction to the conduct that is expected of a Geomatics Engineering Technologist in his career. This conduct is expected of the students both in their work and personal life. The responsibilities and liabilities of professionals and para-professional will be investigated. The regulations concerning workplace safety and the role of the technologist in assisting in workplace safety will be discussed.

SD1610 Clinical Orientation
The clinical orientation gives students an opportunity to perform basic respiratory therapy procedures under direct supervision and enhance their knowledge of the role of the respiratory therapist.
Prerequisite(s): Successful completion of 3rd semester.

SD1611 Clinical Orientation
The clinical orientation gives students an opportunity to perform basic respiratory therapy procedures under direct supervision and enhance their knowledge of the role of the respiratory therapist.
Prerequisite(s): Successful completion of 4th semester

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 their graining 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

SD1621 Clinical Orientation
The clinical orientation of the student during the fourth and fifth semesters is designed to reinforce in a practical manner, the theoretical knowledge he/she is acquiring during the didactic segment of their graining 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

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 healthcare.

SD1700 Workplace Skills
This course involves participating in meetings, doing safety inspections, completing employment insurance forms, writing letters of employment insurance appeal, and filing a human rights complaint. Includes information on formal meetings, unions, workers' compensation, employment insurance regulations, workers rights and human rights.

SD1710 Job Search Techniques
Seminar (10-12 Hours).

SD1720 Entrepreneurial Awareness
Seminar (10-12 Hours).

SD1800 Communications Co-op Education
This two hour a week co-operative education component of the communications course will familiarize students with the concept and operations of co-operative education. Students focus on preparing for a co-op work term that includes eligibility, placement processes, realistic learning objectives, resume writing as it relates to co-operative education, and interview skills. The course introduces student, employer, and institute responsibilities and how each of these constituents work together to benefit from co-operative education. Other topics include: technical work-term reports, report outlines, daily work diaries, work ethics, occupational safety, monitoring, and evaluation and debriefing sessions.

SD1860 Portfolio Development
This course is designed to provide students with the skills necessary to develop a professional portfolio and resume for employment in the Graphic Design industry. Students will learn how to assemble a professional looking portfolio, how to edit their work for a portfolio, how to design and prepare a resume, how to act in a job interview and job search techniques. It is expected that students in this course will already have developed a substantial body of their own work.
Prerequisite(s): Successful completion of Graphic Design core courses in semesters 1 through 4; all Graphic Design core courses in Intersession 1.

SD2610 Interdisciplinary Studies ⊗
This course concentrates on the integration of knowledge gained in all courses in the program. Students will challenge five comprehensive examinations over the course of the semester one (1) examination per week. Students will concentrate on analyzing and solving problems involving all disciplines.
Prerequisite(s): Pass 8th semester

SD3400 Graduation Preparation
This is a course that is to be completed by students during the academic semester preceding graduation. It is designed to allow the students to share the technical aspects of their work term and to give them support in gaining graduate placement opportunities.
Prerequisite(s): Enrollment in the final semester of program.

SE1060 Workplace Safety Legislation
This is an introductory course that explores the nature and dimension of health and safety in the workplace and the role of government agencies in the process. This course will provide students with a brief overview of the field of occupational health and safety. Legislation governing occupational health and safety and the Workers' Compensation Act will be examined.

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.

SE2200 Fire Arm Education/Hunter Safety
Under Development by the Department of Natural Resources (Wildlife Division)

SF1100 Metal Preparation and Shop Flow
This structural fitting course requires the use of basic tools and equipment, and materials and supplies. It involves determining material requirements; selecting and inspecting materials, surface preparation, cutting and edge preparation. It includes information on shop flow and metal preparation techniques, corrosion, and paints and primers.

SF1120 Blue Print Reading for Fabricators
This course requires the use of drawings, views, joint configurations, abbreviations and weld symbols. It includes information on joints and welding symbols for weldment fabrication and the interpretation of structural drawings.

SF1130 Introduction to Sub Assembly and Assembly Fabrication
This metal fabrication course will introduce students to the basic tools and metal forming equipment. It involves reading blueprints, selecting the correct materials, using fabrication aides and following outlined quality control procedures to fabricate sub-assemblies and assemblies.

SF1200 Introduction to Template Development
This structural fitting course requires the use of basic fitting tools, and materials and supplies. It involves determining specifications and preparing templates. It includes information on geometry and trigonometry, measuring systems and Pythagoras' Theorem.

SF1220 Introduction to Plate Development
This structural fitting course requires the use of basic tools and equipment, and materials and supplies. It involves developing templates, plate layout, dimension control, cutting, edge preparation, forming and assembling structures. It includes information on types and properties of metals and alloys, and mathematical calculations.

SF1300 Advanced Template Development
This structure fitting course is a continuation of fundamental template development requiring further use of fitting tools, and materials and supplies. It involves determining specifications and preparing templates. It includes information on geometry and trigonometry, measuring systems and Pythagoras' Theorem.

SF1310 Advanced Plate Development
This structural fitting course is a continuation of fundamental plate development requiring the use of tools and equipment, and materials and supplies. It concentrates on forming and assembling structures, and developing advanced plate development skills. It includes information on types and properties of metals and alloys, and mathematical calculations.

SF1320 Sub-Assemblies
This structural fitting course requires the use of basic tools and equipment, and materials and supplies. It involves plate layout, dimension control, cutting and edge preparation, and forming and assembling structures. It includes information on expansion and contraction, pre-heating, tack welding techniques and bridge tacking.

SF1330 Structural Assembly
This structural fitting course requires the use of basic tools and equipment, an overhead crane, rigging equipment and sub-assemblies. It involves preparing the site; documenting dimensions; installing rigging; and laying out, erecting and outfitting the structure. It includes information on load balancing and rigging techniques.

SI2300 Materials Science
This course will focus on the structure and composition of materials used industrial equipment. Emphasis will be placed on the properties of these materials in relation to strength, fatigue and corrosion. Commercial classifications of materials will be examined in relation to engineering specifications.
Prerequisite(s): CH1121, PH1101

SN1100 Introduction to Sound
This is an introductory course in sound and music. Students are introduced to the fundamentals of sound, the mechanics of hearing, and basic music theory. Musical styles will be discussed in reference to popular music in videos, film and advertising, as well as ear training for pitch, tonality and musical textures.

SN1140 Physics of Sound
This course provides a theoretical base in the science of sound for subsequent study of applied sound content. The intent of this course is to explore the objectives at a greater level of detail than in traditional Physics courses and to conduct laboratory activities more specifically related to careers in sound.

SN1200 The Music Business
This course will give students an insight into the Music Business. It will deal with Contractual Agreements between participants as well as Copyright laws and Performing Rights Organizations. Sound related jobs and other employment opportunities will be discussed as well as the perks and pitfalls of Independent Record Productions.

SN1300 Engineering Graphics for Recording Arts
This is an introductory course in Engineering Graphics which uses CAD as a tool to produce various drawings and diagrams. Engineering Graphics provides visually oriented data that is usable by technicians to assist in equipment layout and stage design. Topics covered include an introduction to CAD, geometric terminology and constructions, orthographic projection, sketching, dimensioning, and preparation of charts, diagrams and plots.

SN2100 Electro-Acoustic Devices and Design
This course is designed to give students a comprehensive look at the various types of microphones and loudspeakers. General purpose and speciality microphones will be studied with respect to their uses in recording and sound reinforcement. Loudspeaker types and enclosures for sound reinforcement and studio monitoring will studied with design considerations for indoor and outdoor sound systems.
Prerequisite(s): SN1100

SN2200 Recording I
This course is an introduction to sound recording. The evolution of the industry is traced through exploration of the technologies used since sound was first captured and moves to a comprehensive overview of contemporary technologies. A recording session will be discussed in terms of its participants and their respective roles, as well as typical recording procedures.
Prerequisite(s): SN1100
Co-requisite(s)s: SN2100

SN2201 Recording II
This course will give a comprehensive overview of a recording session. It is intended to give students a hands on experience of a session from the studio set-up through final mix down.
Prerequisite(s): SN1100, SN2100, SN2200

SN2300 Broadcast Audio
This course will introduce the student to the latest broadcast technologies. A brief history of the industry will give an insight into the beginnings of radio and TV and trace the technological advances to present day.

SN2400 Sound Production - Animation Film
This course explores the unique requirements for sound recording and production in film and video industries. Students will review the key technical requirements of the industries and, through practical sessions, will demonstrate required competencies.

SN2410 Sound Production - Live Theatre
This course explores the unique requirements for sound recording and production in live theatre venues. Students will review the key technical requirements of theatre venues and through practical sessions, will demonstrate required competencies.

SN3100 Sound Reinforcement
This course is designed to introduce the student to the components and applications of the Sound Reinforcement System. Mixing sound at outdoor and indoor venues with the appropriate equipment will be discussed in detail.
Prerequisite(s): SN1100, SN2100

SN3200 Synthesizers and MIDI
The intent of this course is to give the student a working knowledge of Music synthesis and the Music Instrument Digital Interface (MIDI). Hands on experience will be gained in a MIDI Project Studio environment and students will be required to produce music assignments using this technology.
Prerequisite(s): SN1100
Co-requisite(s)s: SN2100

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.

SP1300 Radiation Safety
This is an introductory course dealing with the regulations pertaining to and the safe practices to be followed while carrying out radiographic testing. Health effects from radiation, monitoring radiation, controlling dose, standard operating procedure, regulations.

SP1400 Facilities Engineering
This course is designed for Mechanical, Mechanical (Manufacturing) and Industrial Engineering Technology students. Development and application of preventive and predictive maintenance programs for industrial equipment and facilities is emphasized. Condition monitoring of equipment, 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.
Prerequisite(s): CT1150

SP1700 Computer Numerical Control (CNC Machining I)
This course is designed to be an introductory course in Computer Numerical Control (CNC) machining. 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 SP1701 Computer Numerical

Control (CNC Machining II)
This course is a continuation of SP1700 for Computer Numerical Control (CNC) using Computer Applied Manufacturing (CAM)) software. This course 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 lectures, computer labs and hands-on work in the shop.
Prerequisite(s): SP1700

SP1800 Precision Metrology
This course is a bridge between Machine Shop Practice and Quality Control dealing with the physical data gathering for quality assessment. Measurement using small hand tools, optical com-

● Available through @College Distributed Learning Service ⊗ Available through correspondence

parator and a Coordinate Measuring Machine (CMM) will introduce students to inspection procedures.
Prerequisite(s): SP1200

SP2300 Quality Assurance
This course is designed to introduce the concepts, philosophy and application of Total Quality Management, Statistical process Control and the International Standards Organization (ISO) 9000 quality standards. Emphasis will be on the integration of the total quality management philosophy into the production process. Development of quality control procedures and documentation will be discussed including reference to existing industry quality control specifications. The implementation process for quality assurance manuals and their auditing procedures will be outlined.

SP2301 Quality Control
This course is designed to provide knowledge and skills **prerequisite** to the development, implementation, maintenance and evaluation of Quality Control Systems.

SP2310 Quality Control and Inspection I
To develop the student's ability to work in an organization which is involved in Quality Control and Inspection. To properly take measurements and do dimensional checks on materials under control. To perform basic visual, LPI and MPI tests on weldments. An introductory course in Quality Control and Non-Destructive Testing methods. The topics include introduction to Quality Control, Metrology, CSA standards Z299.1-85, Visual, LPI and MPI testing.
Prerequisite(s): WD1100, PH1100

SP2311 Quality Control and Inspection II
This course requires that the student develop an understanding of the theory and concepts behind both ultrasonics and liquid penetrant evaluation, it then provides practical applications of these and requires that the student use typical industrial codes and standards to evaluate results.
Prerequisite(s): CF1100, SP2310

SP2330 Quality Assurance
This general studies course requires the use of basic tools and equipment and materials and supplies. It requires controlling drawings and specifications and/or calibrating measuring devices in applicable occupations. It involves interpreting standards, controlling the acceptance of raw materials, controlling quality variables and documenting the process. It includes information on quality concepts, codes and standards, documentation, communications, human resources, company structure and policy, teamwork and responsibilities.

SP2400 Safety Engineering
This course will provide the student with an overview of the fundamentals of occupational health and safety in the workplace.

SP2410 Safety Engineering Technology
This course will provide the student with an overview of the fundamentals of occupational health and safety in the oil and gas drilling and production environment.

SP2510 Plant and Facility Layout
The course examines the contribution that a competently performed plant or facility layout plan can make toward achieving a profitable and efficient company or non-profit organization. The course combines fundamental principles and practical methodologies in plant and facility layout and material handling. The student will investigate and apply these principles and techniques in a variety of realistic situations. Further, since any proposal for innovation or change must be analyzed and described thoroughly, this course also emphasizes development of competencies in CADD and communications, with emphasis on the written report.
Prerequisite(s): EG1101

SR1100 Lawn and Garden Equipment Servicing Fundamentals
This course involves servicing carburetor intake systems; performing routine maintenance and tune-ups; servicing engine auxiliary components, single component ignition modules and mower decks and attachments; reconditioning carburetor and auxiliary systems; servicing brake and steering components; and servicing chain saws. It includes information on the operation of governors and chainsaw chain and bar failures.

SR1110 Lawn and Garden Equipment Troubleshooting and Repair
This course involves servicing valve trains, engine components, clutches and drives, hydraulic systems, engine driven water pumps, chainsaw engines, lawn and garden equipment cooling systems, AC generators, and remote starters. It includes information on the causes for piston failure, types of bearing failure and the causes, the importance of maintaining the correct quantity and quality of lubrication, the design and function of clutches, hydraulic theory and systems, the operation of water pumps, function of chainsaw engine components, and the operation of AC generators.
Prerequisite(s): SR1100

SR1200 Snowmobile Servicing Fundamentals
This course in snowmobile maintenance involves servicing and repairing recoil operations, carburettors, oil injection systems, braking systems, cooling systems, steering components, independent front suspensions, frame components, cosmetic damage, and track suspension units. It includes information on the operation of fuel systems, the venture principle, variable and fixed venture carburettors, starters, oil injection systems, liquid and air cooling systems, cosmetic repair procedures, drive clutches, bogie wheel suspensions, slide rail suspensions and snowmobile handling.

SR1210 Snowmobile Troubleshooting and Repair
This course in snowmobile servicing involves troubleshooting and repair of electronic ignition systems, lighting and charging systems, fuel systems, gas charged shocks, drive clutches, driven clutches, engines, and exhaust systems. It includes information on operation of a fuel injection systems, carburetted fuel systems, altitude-compensated carburettors, clutches, engines and labyrinth seals.
Prerequisite(s): SR1200

SR1300 Motorcycles and ATV Servicing Fundamentals
This course in motorcycle and ATV maintenance involves servicing and repairing recoil starters, engines, motorcycle air cleaners, wheels and tires, brake systems, front forks, final drives, handling problems, clutches, and body damage. It includes information on the operation of starters, motorcycle air filters, drum and hydraulic disk brakes, motorcycle front forks and clutches.

SR1310 Snowmobile Troubleshooting and Repair
This course in snowmobile servicing involves troubleshooting and repair of electronic ignition systems, lighting and charging systems, fuel systems, gas charged shocks, drive clutches, driven clutches, engines, and exhaust systems. It includes information on operation of a fuel injection systems, carburetted fuel systems, altitude-compensated carburettors, clutches, engines and labyrinth seals.
Prerequisite(s): SR1200

SR1400 Marine Equipment Servicing Fundamentals
This course in marine equipment maintenance involves servicing recoil starters, carburettors, outboard powerheads, remote controls, cooling systems, stern drive engines, electrical systems, stern drive boat and motor rigging, fibreglass hulls, outboard controls and accessories, marine toilets, bilge pumps, bilge blowers and boat trailers. It includes information on carburettor components and circuits, carburettor fundamentals, the operation of a fuel injection system, corrosion protection systems, maintenance procedures for stern drive engines, four-stroke engine operating principles, safe boating practices, rigging requirements and powerboat fibreglass hull design.

SR1410 Marine Equipment Troubleshooting and Repair
This course in marine equipment involves the troubleshooting and repair of ignition systems, starting and charging systems, fuel systems, tilt and trim systems, propellers, impellers, upper gear housings, lower gear housings and lower units. It includes information on carburettor fundamentals and the theory of propeller operation.
Prerequisite(s): SR1400

ST2100 Fibre Arts I
This art-based course provides the student experience in working with various fibres and practicing basic dye techniques. It provides the student with information and skills relative to fibre through which the student can develop creative solutions to assignments.

ST2101 Fibre Arts II
This advanced studio elective course allows for specialized study in one or more fibre arts areas. Projects will be devised in consultation with the instructor.
Prerequisite(s): ST2100

ST2110 Jewellery I
This course is designed to give the Visual Arts student an experience working with metal as a 3-dimensional sculptural material. It will provide the student with basic information and skills in jewellery and metal sculptural areas. Sawing, filing, basic casting, simple soldering, forming and finishing techniques

will be experienced along with design principles for metal works.
Prerequisite(s): VA1301

ST2111 Jewellery II
Students will gain a greater skill and understanding while working with metal. This course emphasizes the use of metal as a medium for personal expression. Students are expected to expand their use of skills learned in the previous semester and execute more advanced design ideas.
Prerequisite(s): ST2110

ST2120 Painting I
This is an introductory course in painting designed to acquaint students with basic techniques. 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. Careful observation and experimentation with various painting media are still major themes.
Prerequisite(s): ST2120

ST2130 Ceramics I
This is an introductory course in Ceramics which covers a wide range of basic information and techniques. The fundamentals of throwing on the potter's wheel as well as hand-building techniques will be presented.
Prerequisite(s): VA1301

ST2131 Ceramics II
This is an intermediate course in ceramics which will require students to specialize in hand building or throwing on the wheel. Students will be taught to load and fire kilns independently, test and use glazes and design special clay bodies. Students will produce a series of works in a format which they have selected in consultation with the instructor.
Prerequisite(s): ST2130

ST2140 Printmaking I
This is a beginning course in printmaking, designed to acquaint the student with several forms of printmaking through demonstrations and assignments. Wood and line-block, intaglio, monotypes, and serigraphy will be included.
Prerequisite(s): VA1301

ST2141 Printmaking II
This is the final course in printmaking and in many respects is an extension of Printmaking 2140. In close consultation with the instructor, students will be able to define problems, directions, and projects for the semester. Individualized instruction and evaluation are an important component of the course. Students will be able to research and develop printmaking skills of particular interest to them.
Prerequisite(s): ST2140

ST2160 Photography I
This course is designed for the Visual Arts student who has a strong interest in the photographic medium as a means of personal expression. The student is introduced to various colour processes, as well as further exploration of black and white techniques.
Prerequisite(s): PY1101

ST2161 Photography II
This course is an extension of ST2160 Photography I where the student continues to explore colour as well as black and white techniques. 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

ST2170 Knit I
This art-based basic course provides the student with experience in working with single element construction with concentration in the knit structure. The student will apply creative solutions to assignments.
Prerequisite(s): VA1100; VA1200; VA1400
Co-requisite(s)s: VA1101; VA1201

ST2171 Knit II
This art-based intermediate knit course provides the student with experience in working with more complex machine and supporting hand knit techniques. It gives the student information and skills relative to knit structure and fabrics ensuring a personal creative approach to assignments.
Prerequisite(s): VA1101; VA1201
Co-requisite(s)s: VA2100; VA2210

ST2180 Weaving I
This art based introductory weaving course provides the student with experience in working with woven techniques. It gives the student information and skills relative to the loom and the woven fabric, through which the student can develop creative solutions to assignments.
Prerequisite(s): ST2100, VA1100; VA1200
Co-requisite(s)s: VA1101; VA1201

ST2181 Weaving II
The intent of this course is to introduce the students to more complex woven structures including hand controlled manipulations on and off the loom. The purpose of this course is to further encourage the student's creative development in a more controlled environment. Students are invited to work in a personal individual manner, employing learned information and skills.
Prerequisite(s): VA1101; VA1201; ST2180
Co-requisite(s)s: VA2100; VA2210

ST2500 Design Studio
This course is designed to provide advanced graphic design students with the opportunity to investigate a design project of their choosing, in consultation with the instructor. Students may choose to partner with a private, government or non-profit organization in developing a joint project or they may choose to pursue a self-directed area of exploration. It is expected that students taking this course will be completely familiar with the design process, as well as with the tools of the design industry.
Prerequisite(s): Successful completion of all core Graphic Design courses in semesters 1 through 4, and Intersession 1.

ST3170 Knit III
This final art based knit course provides the student with an opportunity for self-directed study. Specialized information pertinent to individual project needs will be provided. Although this course stresses self-direction and an independent approach to study, the student must fulfill the course requirement outlined by staff.
Prerequisite(s): ST2171, VA2210, VA2100
Co-requisite(s)s: VA2101; VA2111

ST3180 Weaving III
This final art based weaving course provides the student with an opportunity for self-directed study. Specialized information pertinent to individual project needs will be provided. Although this course stresses self-direction and an independent approach to study, the student must fulfill the course requirement outlined by staff.
Prerequisite(s): ST2181, VA2210, VA2100
Co-requisite(s)s: VA2111; VA2211

SU1150 Field Navigation
This course is designed to expose students to concepts of field navigation. It is essentially a field oriented course in which students will be introduced to navigational skills using: map and compass aerial photos, and GPS. Students will also be introduced to viewing and manipulating digital data through desktop mapping.

SU1200 Plane Surveying
Plane Surveying is an introductory surveying course for technologists. Topics studied include, but are not limited to: measure of angle, direction and distance with appropriate instruction in the corresponding areas of traverse and coordinate computation. Included also are differential, profile, cross-section levelling. Field labs will emphasize use and care of surveying equipment, note taking and interpretation and plotting of field notes.
Prerequisite(s): MA1101
Co-requisite(s)s: DR1210

SU1210 Construction Surveying
This course is the second course in surveying being offered to students in the Civil Technology program. Its purpose is to strengthen the surveying skills of students enrolled in the third term of the program, to teach them new skills in surveying that are directly related to the construction of buildings, roads and municipal services and to provide them with the required skills to successfully complete the construction camp to be offered in the second Technical Intersession.
Prerequisite(s): SU1200, DR1210

SU1220 Surveying
This course is an introductory course designed to provide students with a basic understanding of the various types of surveys commonly used in the design and construction industry. This course deals mainly with surveys of relatively small areas such as building construction sites.
Prerequisite(s): MA1101, EG1100

SU1310 Plane Surveying (Basic)
This is an introductory course in surveying presented to Geomatics Engineering Technology program. The topics to be covered are: introduction to the theory of surveying on a plane, the acquisition of linear distances, horizontal angle, vertical angles, the calculation of coordinates and areas, the determination of elevations using spirit levelling, profiles and cross-

sections, the graphical presentation of acquired data. The student will use tapes, theodolites and spirit levels to acquire the required data.
Prerequisite(s): EG1100, MA1101, PH1100

SU1311 Plane Surveying
This is the second course in plane surveying for the Geomatics Engineering Technology program. This course expands on topics covered in SU1310, vertical and horizontal datums, data transformation, total station instrumentation, horizontal and vertical curves, and construction surveying.
Prerequisite(s): SU1310, SU1500

SU1400 Surveying I
This course will acquaint the student with the basic concepts of engineering surveying. While theory is a vital part of the course, heavy emphasis is placed throughout on instrumentation and hands-on training with the various types of equipment. The student's progress and expertise in handling survey instruments will, therefore, be continuously monitored and evaluated and a significant portion of the total mark will be assigned to instrumentation testing.

SU1440 GIS I
This is the first of two GIS courses and has focus on vector structure. The course introduces the GIS and its interlink with the real world. The topological structure and the linking between the graphical database and the textual database is explored. The various types of textual databases are introduced. The use of GIS as a facility management tool is addressed with emphasis on the combining of the various themes to answer posed questions.
Prerequisite(s): SU1530, SU1310, SU2500

SU1441 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 analysis. 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 EG1100.
Prerequisite(s): MA1101, PH1100, EG1100

SU1530 Digital Mapping
This course is an introduction to Digital Mapping. The main focus is on the structuring of conventional hard copy data for entry into an Automated Mapping or Geographics Information System.
Prerequisite(s): SU1500, SU1310

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): SU1311

SU1541 Hydrography II
This course is an advanced course in hydrographic principles and procedures. It is a continuation of Hydrography I SU-1540 with emphasis on advanced hydrographic systems and their use in marine engineering projects.
Prerequisite(s): SU1540, SU2570

SU1550 Mapping/Remote Sensing
This course is designed to introduce the basic principles and skills associated with remote sensing. Aerial photography interpretation and GPS technology are addressed through lectures and practical applications. Students are exposed to satellite imagery, processes and products.
Prerequisite(s): SU1150
Co-requisite(s)s: FR1330

SU1570 Remote Sensing
This course introduces the student to the principles of Remote Sensing. The concept of acquiring data outside our visual range and the use of that data to identify and classify objects and phenomena is investigated. The basic data recording systems in common use are addressed.
Prerequisite(s): SU2500, SU2570, SU1441

SU1710 Forest Surveying
This is an introductory course in Surveying including the basic fundamentals of plane surveying and the use and care of equipment. The measurement of distance, direction and elevation is emphasized. The steel tape, rope chain, level, hand compass, and transit are the major pieces of equipment studied.

SU2320 Geodetic Surveying
This course is the third surveying course for the Geomatics Engineering Technology program and addresses the acquisition of precise positioning. The course deals with the determination of high precision data by using the available instrumentation to its capacity. The checking and adjusting of equipment is learned and the errors associated with observed data and the effect of these errors on the accuracy of the calculated parameters. The use of data loggers and the transfer of the logged data to coordinate geometry calculation programs are addressed.
Prerequisite(s): MA2100, SU1311, PH1101

SU2500 Photogrammetry
This course is an introduction to photogrammetry for the Geomatics Engineering Technology 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 acquiring of the photography and the aerotriangulation process for the tie of the photos to ground is investigated. The use of aerial photography for the production of rudimentary maps is also addressed.
Prerequisite(s): SU1310, SU1500

SU2530 Cadastral
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): SU1311

SU2570 GPS and Remote Referencing
This course introduces the student to the Global Positioning System (GPS) as a precise measuring tool. The System, control and user segments of the system are investigated as well as the various signals which are emitted by the satellites. The various referencing pertinent to space positioning are addressed. The processing of the observed data and the various methods and algorithms which can be used and the accuracies of the various methods are investigated.
Prerequisite(s): MA2120, SU2320

SU3210 Introduction to 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 work force. 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): MC1050, SU1150

SU3300 Geodesy & Map Projections
This third year course offered in Geomatics Engineering Technology expands on map projections and develops the higher order corrections to positioning problems. The course introduces geodesy and geodetic concepts to equip students for modelling and measurement in a 3D global context. This course expands on map projections and develops higher order corrections to positioning problems.
Prerequisite(s): SU2570, MA3120

SU3500 Adjustments
Further exploration into 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): MA3120, SU2570, SU1540

SV1100 Safety in the Shop
Upon successful completion of this course, the apprentice will be able to identify procedures for the maintenance of a safe and clean work environment and proper procedures to extinguish fires.

SV1110 Ozone Depleting Substances
Upon successful completion of this course, the apprentice will be able to legally handle ozone depleting substances (refrigerants) used in motor vehicles.

SV1120 Gaskets, Seals and Sealers
Upon successful completion of this course, the student will be able to use gaskets, seals and sealing components.

SV1130 Electrical & Electronic Basic Principles
Upon successful completion of this course, the apprentice will be able to apply basic electrical and electronic principles.

SV1140 Hydraulic Basic Principles
Upon successful complete of this course, the apprentice will be able to apply basic hydraulic principles by using Pascal's Law to calculate force and fluid pressure as applied to Motive Powered Equipment.

SV1150 Service Information Systems
Upon successful completion of this course, the apprentice will be able to select and use different types of service manuals found in heavy equipment and truck and transport.

SV1155 Service Information Systems for Motorized Equipment
Upon successful completion of this course, the apprentice will be able to identify types of Service Information Systems used and procedures to obtain data needed to make repairs and adjustments.

SV1160 Hand Tools
Upon successful completion of this course, the apprentice will be able to use and maintain hand tools.

SV1165 Hand Tools
Upon successful completion of this course, the apprentice will be able to demonstrate the skills and knowledge needed to properly select, use and maintain common hand held tools for the repair of motorized equipment.

SV1170 Shop Tools and Equipment
Upon successful completion of this course, the apprentice will be able to use and maintain shop tools and equipment.

SV1175 Shop Tools and Equipment
Upon successful completion of this course, the apprentice will be able to correctly and safely use shop tools and equipment.

SV1180 Fasteners, Tubings and Fittings
Upon successful completion of this course, the apprentice will be able to select and use common fasteners, tubing and fittings found in heavy equipment and truck and transport.

SV1185 Fasteners, Tubing and Fittings
Upon successful completion of this course, the apprentice will be able to properly use various hoses, fasteners, tubing and fittings in every aspect of the occupation.

SV1190 Lubrication and Fluid Services
Upon successful completion of this course, the apprentice will be able to perform engine oil and filter changes, chassis lubrication and service automatic lubrication systems.

SV1195 Lubrication and Fluid Services
Upon successful completion of this course, the apprentice will be able to perform vehicle lubrication services.

SV1200 Start, Move, Park, and Prepare a Vehicle to be Towed
Upon successful completion of this course, the apprentice will be able to start move and park heavy equipment machinery and prepare a vehicle to be towed.

SV1210 Tires, Rims and Wheels
Upon successful completion of this course, the apprentice will be able to remove and install tires from a demountable rim flange used on heavy equipment machinery.

SV1215 Wheels and Tires
Upon successful completion of this course, the apprentice will be able to service and repair wheels and tires.

SV1220 Manual Steering Systems
Upon successful completion of this course, the apprentice will be able to disassemble, repair, adjust, and assemble manual steering gear box, steering linkage, steering wheel and shafts.

SV1225 Manual Steering
Upon successful completion of this course, the apprentice will be able to service and repair manual steering components.

SV1230 Power Steering Systems
Upon successful completion of this course, the apprentice will be able to disassemble, repair, adjust and assemble power steering gear box and components.

SV1240 Front-End Alignment
Upon successful completion of this course, the apprentice will be able to perform basic front-end alignment on heavy equipment vehicles.

SV1250 Front and Rear Suspension
Upon successful completion of this course, the apprentice will be able to remove, inspect, repair and install heavy equipment front and rear suspension components.

SV1255 Suspension
Upon successful completion of this course, the apprentice will be able to service and repair suspension components.

SV1260 Hydraulic Brakes
Upon successful completion of this course, the apprentice will be able to remove, disassemble, repair, assemble and install hydraulic brake systems and components used in heavy equipment and truck and transport.

SV1270 Air Brakes
Upon successful completion of this course, the apprentice will be able to remove, disassemble, repair, assemble and install air brake systems and components used in heavy equipment and truck and transport.

SV1280 Drive Lines
Upon successful completion of this course, the apprentice will be able to remove, repair and install drive lines on heavy equipment and truck and transport.

SV1285 Drive Lines
Upon successful completion of this course, the apprentice will be able to identify the procedures for the service and repair of drive line components on rear drive automobiles and light trucks.

SV1290 Differential Assemblies
Upon successful completion of this course, the apprentice will be able to remove, check, repair, assemble and adjust differential assemblies used on heavy equipment machinery.

SV1300 Engine Principles
Upon successful completion of this course, the apprentice will be familiar with internal combustion engines and components.

SV1305 Engine Principles
Upon successful completion of this course, the apprentice will be able to demonstrate the knowledge and skills necessary for the understanding of the operation principles of an internal combustion engine.

SV1310 Cooling Systems
Upon successful completion of this course, the apprentice will be able to service and repair engine cooling systems and components.

SV1315 Engine Cooling System
Upon successful completion of this course, the apprentice will be able to demonstrate the knowledge and skills necessary to inspect, test and service the cooling system.

SV1320 Lubrication Systems
Upon successful completion of this course, the apprentice will be able to service and repair engine lubrication system and components.

SV1330 Air Filtration and Exhaust Systems
Upon successful completion of this course, the apprentice will be able to remove service and install engine air cleaners and exhaust system used on heavy equipment and truck and transport.

SV1340 Gasoline Fuel Systems
Upon successful completion of this course, the apprentice will be able to diagnose, service and repair gasoline fuel supply systems and carburetors used on gasoline engines.

SV1350 Alternative Fuel Systems
Upon successful completion of this course, the apprentice will be able to service, inspect and perform minor repairs on LPG systems.

SV1360 Diesel Fuel Supply Systems
Upon successful completion of this course, the apprentice will be able to service, inspect and repair Diesel fuel supply systems.

SV1370 Batteries
Upon successful completion of this course, the apprentice will be able to remove, service, change and install batteries used on heavy equipment and truck and transport.

SV1375 Batteries
Upon successful completion of this course, the apprentice will be able to service and replace batteries.

SV1380 Starting Systems
Upon successful completion of this course, the apprentice will be able to disassemble, test, repair and assemble starting motors and components.

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SV1385 Starting Systems
Upon successful completion of this course, the apprentice will be able to service and repair starting systems and components on motor vehicles.

SV1390 Charging System Components
Upon successful completion of this course, the apprentice will be able to disassemble, test, repair and assemble charging systems and components.

SV1395 Charging Systems
Upon successful completion of this course, the apprentice will have a working knowledge of the information needed for diagnosing, servicing and repairing charging systems.

SV1400 Lighting, Gauges and Safety System Circuit Components
Upon successful completion of this course, the apprentice will be able to remove, test and replace lights, gauges and safety components used on heavy equipment machinery.

SV1410 Fire Suppression Units
Upon successful completion of this course, the apprentice will be able to service, inspect and repair fire suppression systems used on heavy equipment machinery.

SV1420 Wheels and Tires
Upon successful completion of this course, the apprentice will be able to identify procedures for tire and wheel service, including tire rotation and tubeless and tube type tire repair.

SV1430 Wheel Balancing
Upon successful completion of this course, the apprentice will be able to balance wheels, both on and off the vehicle.

SV1440 Front Axles and Suspension
Upon successful completion of this course, the apprentice will be able to perform inspection, service and repair of truck front axles and suspensions.

SV1450 Steering Components
Upon successful completion of this course, the apprentice will be able to service steering components and systems.

SV1460 Rear Suspension Systems
Upon successful completion of this course, the apprentice will be able to perform service and repair on rear suspension systems.

SV1470 Basic Anti-Lock Brakes
Upon successful completion of this course, the apprentice will be able to service vehicles that are equipped with anti-lock brakes.

SV1480 Dual Air Brake Systems
Upon successful completion of this course, the apprentice will be able to service dual air brake systems.

SV1490 Lighting Systems
Upon successful completion of this course, the apprentice will be able to service motor vehicle lighting systems.

SV1495 Lighting Systems
Upon successful completion of this course, the apprentice will be able to service motor vehicle lighting systems.

SV1500 Wiring Harness and Accessories
Upon successful completion of this course, the apprentice will be able to diagnose and repair wiring harness and vehicle accessories.

SV1600 Ignition Systems
Upon successful completion of this course, the apprentice will be able to repair and service basic ignition systems.

SV1610 Steering Columns
Upon successful completion of this course, the apprentice will be able to inspect and repair steering columns.

SV1620 Front Wheel Drives
Upon successful completion of this course, the apprentice will be able to demonstrate the procedures for servicing and repairing front wheel drive components, including drive shafts, joints, bearings, seals and steering knuckles.

SV1630 Brake Systems
Upon successful completion of this course, the apprentice will be able to service and repair brake systems and components.

SV1640 Power Brake Systems
Upon successful completion of this course, the apprentice will be able to service and diagnose problems of power brake systems.

SV1650 Fuel Delivery
Upon successful completion of this course, the apprentice will be able to service and repair gasoline fuel delivery systems.

SV1660 Air Intake Systems
Upon successful completion of this course, the apprentice will be able to demonstrate a thorough working knowledge of the design and working application of air intake systems.

SV1670 Exhaust Systems
Upon successful completion of this course, the apprentice will be able to identify the procedures used to service and replace automotive exhaust systems and related components.

SV2000 Instruments, Safety Devices
Upon successful completion of this course, the apprentice will be able to demonstrate a working knowledge of the procedure for diagnosis, repair and replacement of automotive instruments, safety devices and power accessories.

SV2010 On-Board Diagnostics I
Upon successful completion of this course, the apprentice will be able to use on-board diagnostic systems to identify and diagnose problems in vehicle systems.

SV2011 On-Board Diagnostics II
Upon successful completion of this course, the apprentice will be able to diagnose and repair OBD-Generation II systems.

SV2020 Power Steering
Upon successful completion of this course, the apprentice will be able to service and repair power steering components.

SV2030 Electronic Power Steering
Upon successful completion of this course, the apprentice will be able to service electronic power steering systems.

SV2040 Wheel Alignment
Upon successful completion of this course, the apprentice will be able to perform wheel alignments.

SV2050 Engine Clutches
Upon successful completion of this course, the apprentice will be able to service, repair and adjust clutch components for front and rear drive automobiles and light trucks.

SV2060 Manual Transmissions and Transaxles
Upon successful completion of this course, the apprentice will be able to service and repair manual transmissions and transaxles.

SV2070 Automatic Transmissions and Transaxles Servicing
Upon successful completion of this course, the apprentice will be able to service, remove and install automatic transmissions and transaxles.

SV2080 Automatic Transmissions and Transaxles Overhauling
Upon successful completion of this course, the apprentice will be able to understand the procedures for problem diagnosis and repair of automatic transmissions and transaxles assemblies.

SV2090 Electronic Transmission Control
Upon successful completion of this course, the apprentice will be able to diagnose and repair transmissions with electronic control systems.

SV2100 Transfer Cases and Hub Assemblies
Upon successful completion of this course, the apprentice will be able to identify and perform the procedures for the service and repair of transfer cases and hub assemblies on four wheel drive vehicles.

SV2110 Differentials and Axles Assemblies
Upon successful completion of this course, the apprentice will be able to identify procedures for axle shaft removal and replacement and the service of bearings and seals in rear wheel drive vehicles.

SV2120 ABS/Traction Control Systems
Upon successful completion of this course, the apprentice will be able to diagnose and repair anti-lock brake systems (ABE) and traction control systems (TCS) on light duty motor vehicles.

SV2130 Introduction to Air Brake Systems
Upon successful completion of this course, the apprentice will be able to demonstrate a working knowledge of the construction, operating principles, testing and servicing of air brake assemblies.

SV2140 HVAC Systems
Upon successful completion of this course, the apprentice will be able to diagnose and correct problems with HVAC systems.

SV2150 Power Actuated Accessories
Upon successful completion of this course, the apprentice will be able to service power actuated accessories.

SV2160 Air Bag Systems
Upon successful completion of this course, the apprentice will be able to service SIR (Supplemental Inflatable Restraint) systems. To service these systems the technician will also need current service information and tools.

SV2170 Engine Diagnosis and Testing
Upon successful completion of this course, the apprentice will be able to diagnose problems when gasoline and diesel engines fail to perform properly.

SV2180 Engine Removal and Installation
Upon successful completion of this course, the apprentice will be able to demonstrate the knowledge and skills necessary to remove and install engines.

SV2190 Cylinder Heads and Valve Trains
Upon successful completion of this course, the apprentice will be able to inspect and repair automotive engine cylinder heads and valve trains.

SV2200 Cylinder Block Assemblies
Upon successful completion of this course, the apprentice will be able to inspect and overhaul cylinder block assemblies and components.

SV2210 Diesel Fuel System
Upon successful completion of this course, the apprentice will be able to service and repair mechanical diesel fuel system components.

SV2220 Emission Control Systems
Upon successful completion of this course, the apprentice will be able to service and repair vehicle emission control systems while maintaining industry and provincial standards.

SV2230 Fuel Injection Systems (Gasoline)
Upon successful completion of this course, the apprentice will be able to service and repair electronic fuel injection systems.

SV2240 Fuel Injection Diagnosis
Upon successful completion of this course, the apprentice will be able to inspect, test, service and maintain diesel fuel systems.

SV2250 Alternative and Variable Fuels
Upon successful completion of this course, the apprentice will have a working knowledge of alternate types of fuels that can be used in a combustion engine.

SV2260 Preventive Maintenance Inspection
Upon successful completion of this course, the apprentice will be able to be familiar with the procedures involved in preventive maintenance inspection.

SV2270 Government Safety Inspection
Upon successful completion of this course, the apprentice will be able to perform provincial motor vehicle safety inspections.

SV2280 Pre-Delivery Inspection
Upon successful completion of this course, the apprentice will be able to perform pre-delivery inspection on light duty motor vehicles.

SV2290 Steering Systems (Tracked)
Upon successful completion of this course, the apprentice will be able to service, repair and adjust track type steering systems.

SV2300 Track Type Undercarriage
Upon successful completion of this course, the apprentice will be able to remove, disassemble, repair, assemble and install a track type undercarriage from a crawler tractor or excavator.

SV2310 Electric Brakes
Upon successful completion of this course, the apprentice will be able to service, repair and adjust electric brake systems.

SV2320 Manual Transmission Removal and Installation
Upon successful completion of this course, the apprentice will be able to remove and install manual transmission used on heavy equipment machinery.

SV2330 Clutches
Upon successful completion of this course, the apprentice will be able to remove, repair, install and adjust clutches used on heavy equipment machinery.

SV2340 Manual Transmission Service and Repair
Upon successful completion of this course, the apprentice will be able to disassemble, repair and assemble manual transmissions.

SV2350 Torque Converters
Upon successful completion of this course, the apprentice will be able to repair, install and test torque converters.

SV2360 Powershift Transmission
Upon successful completion of this course, the apprentice will be able to repair and install powershift transmissions used on heavy equipment machinery.

SV2370 Drive Axles and Final Drives
Upon successful completion of this course, the apprentice will be able to remove, disassemble, repair, adjust and assemble drive axles and final drives used on wheel and track type vehicles.

SV2380 Hydraulics
Upon successful completion of this course, the apprentice will be able to remove, repair and install hydraulic hoses and fittings.

SV2390 Reservoirs and Fluid Conditioners
Upon successful completion of this course, the apprentice will be able to service hydraulic reservoirs, and remove, service and install filters.

SV2400 Hydraulic Pumps and Motors
Upon successful completion of this course, the apprentice will be able to disassemble, inspect, repair and assemble hydraulic pumps and motors.

SV2410 Hydraulic Control Valves
Upon successful completion of this course, the apprentice will be able to disassemble, inspect, repair and assemble various types of hydraulic valves.

SV2420 Hydraulic Cylinders
Upon successful completion of this course, the apprentice will be able to remove, disassemble, inspect, repair, assemble and install hydraulic cylinders.

SV2430 Hydraulic Accumulators
Upon successful completion of this course, the apprentice will be able to service, inspect and repair hydraulic accumulators and oil coolers.

SV2440 Steering Systems (Articulated)
Upon successful completion of this course, the apprentice will be able to disassemble, inspect, repair and assemble steering components from articulated vehicles.

SV2450 Hydrostatic Transmissions
Upon successful completion of this course, the apprentice will be able to remove, disassemble, repair, assemble and install hydrostatic transmissions.

SV2460 Diagnose and Test Hydraulic Systems
Upon successful completion of this course, the apprentice will be able to diagnose and test hydraulic systems.

SV2470 Winches, Wire Ropes and Accessories
Upon successful completion of this course, the apprentice will be able to disassemble, repair and assemble winches; remove and install wire ropes and accessories used on heavy equipment machinery.

SV2480 Cabs and ROPS
Upon successful completion of this course, the apprentice will be able to remove, inspect, repair and install cabs and roll over protection structures (ROPS) used on heavy equipment machinery.

SV2490 Portable Air Compressors
Upon successful completion of this course, the apprentice will be able to service and repair portable air compressors.

SV2500 Booms and Attachments
Upon successful completion of this course, the apprentice will be able to remove, inspect, repair and install booms, pins and busings used on heavy equipment machinery.

SV2510 Blades, Buckets and Cutting Edges
Upon successful completion of this course, the apprentice will be able to remove, repair and install blades, buckets and cutting edges used on heavy equipment machinery.

SV2520 Aprons, Bowls and Tailgates
Upon successful completion of this course, the apprentice will be able to service and repair aprons, bowls and tailgates used on scrapers.

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SV2530 Feller Head
Upon successful completion of this course, the apprentice will be able to service and repair feller heads used on forestry machinery.

SV2540 Delimber Mechanism
Upon successful completion of this course, the apprentice will be able to service and repair delimber mechanisms used on forestry machinery.

SV2550 Service and Repair Circle Bearing
Upon successful completion of this course, the apprentice will be able to service and repair circle bearing assemblies used on heavy equipment machinery.

SV2560 Preventive Maintenance Inspections
Upon successful completion of this course, the apprentice will be able to perform a complete preventive maintenance inspection, to manufacturer's specifications, on heavy equipment machinery.

SV2570 Engine Brakes and Retarders
Upon successful completion of this course, the apprentice will be able to service, repair and adjust engine brakes and retarders.

SV2580 Engine Removal and Installation
Upon successful completion of this course, the apprentice will be able to remove and install engines according to manufacturer's recommended procedures.

SV2590 Turbochargers, Blowers and Intercoolers
Upon successful completion of this course, the apprentice will be able to remove service or repair and install engine turbochargers, blowers and intercoolers used on Diesel engines.

SV2600 Diesel Engines Overhauling
Upon successful completion of this course, the apprentice will be able to disassemble, inspect, repair and assemble Diesel engines.

SV2610 Diesel Engine Problems Diagnosis
Upon successful completion of this course, the apprentice will be able to evaluate and diagnose Diesel engine problems and conditions

SV2620 Injectors
Upon successful completion of this course, the apprentice will be able to remove, test, rebuild, service and install injectors used on Diesel engines.

SV2630 Injector Pumps
Upon successful completion of this course, the apprentice will be able to remove, install, time and adjust low and high idle on Diesel fuel injector pumps.

SV2640 Tune Ups and Diagnosis of Diesel Fuel Systems
Upon successful completion of this course, the apprentice will be able to perform a complete tune-up and diagnose problems on Diesel fuel systems.

SV2650 Electronic Fuel Control Systems
Upon successful completion of this course, the apprentice will be able to service, inspect and repair electronic fuel control systems on Diesel engines.

SV2660 Ignition Systems and Tune-Ups
Upon successful completion of this course, the apprentice will be able to check and test ignition system components and perform tune-ups on gasoline engines.

SV2670 Air Conditioning Systems
Upon successful completion of this course, the apprentice will be able to service, inspect and repair air conditioning systems used on heavy equipment and truck and transport.

SV2680 Basic Motive Power Computers
Upon successful completion of this course, the apprentice will be able to diagnose and/or repair/reprogram motive power computers.

SV2690 Frames and Chassis
Upon successful completion of this course, the apprentice will be able to service and repair truck frames and chassis.

SV2700 Electronic Components of Anti-Lock Brakes
Upon successful completion of this course, the apprentice will be able to service and repair trucks equipped with anti-lock brakes.

SV2710 Engine Clutches
Upon successful completion of this course, the apprentice will be able to service, repair and adjust engine clutches in trucks.

SV2720 Manual Transmissions
Upon successful completion of this course, the apprentice will be able to service and repair manual transmissions in trucks.

SV2730 Automatic Transmissions
Upon successful completion of this course, the apprentice will be able to service and overhaul automatic transmissions in trucks.

SV2740 Transfer Cases
Upon successful completion of this course, the apprentice will be able to service and overhaul transfer cases in trucks.

SV2750 Drive Axle Assemblies
Upon successful completion of this course, the apprentice will be able to service and repair truck drive axle assemblies.

SV2760 Gasoline Fuel Injection Systems
Upon successful completion of this course, the apprentice will be able to service, diagnose operational deficiencies and carry out corrective maintenance on gasoline electronic fuel injection systems used on medium duty trucks.

SV2770 Emission Controls
Upon successful completion of this course, the apprentice will be able to service and repair vehicle emission control systems.

SV2780 Fifth Wheels
Upon successful completion of this course, the apprentice will be able to service and repair fifth wheels on trucks.

SV2790 Government Safety Inspections
Upon successful completion of this course, the apprentice will be able to perform a motor vehicle safety inspection.

SV2800 Preventive Maintenance Inspections
Upon successful completion of this course, the apprentice will be able to perform a preventive maintenance inspection on used and fleet vehicles.

SV2810 Wheel Alignment
Upon successful completion of this course, the apprentice will be able to perform wheel alignments.

TA1110 Orientation to Rehabilitation ●
The purpose of this course is to introduce students to the field of rehabilitation, the role of the OTA and PTA, professional organizations and areas of specialization. The course will include a one week field placement.

TA1210 Normal Functional Movement ●
This course will provide students with an ease in handling and moving, describing the human body in motion based on theoretical and practical study of functional movement. The course will include a two week field placement.
Prerequisite(s): TA1110, BL1310

TA1310 The Health Care System ●
This is an introductory course which focuses on the evolution of the Canadian Health Care system, it's origins, and Federal and Provincial jurisdictions. It will include determinants of health status, special interest groups and a comparison of the Canadian system to various other models. The purpose of the course is to familiarize students with the organization of the Canadian Health Care System and the roles and interrelationships of health professions. There will also be opportunities to discuss issues and changes confronting the system, health personnel and the public.

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.

TA2110 Disabling Conditions ●
Students will be introduced to a selection of disabling conditions based on broad diagnostic categories, encompassing physical and psycho social conditions specific to pediatric, adult and geriatric populations. Emphasis will be placed on the impact that these conditions present to the individual within the framework of the impairment, disability and handicap model.
Prerequisite(s): BL1320

TA2210 Communication Disorders in Rehabilitation ●
The purpose of this course is to review the communication problems associated with neurological and sensory impairments which inhibit a person's ability to effectively communicate with others. 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 problems. As well, the students will learn strategies which they can use in assisting disabled persons to communicate despite their impairments. Some time will be spent on learning the skills to help people with communication disorders.
Prerequisite(s): BL1320

TA2420 Therapeutic Skills for OTA ●
This course will introduce and familiarize students with therapeutic use of activities in Occupational Therapy. The principles of activity selection, grading and adapting activities and application to specific populations will be addressed. Emphasis will be placed on Activities of Daily Living, assistive devices and adapted techniques and modification of adaptive equipment. Skills will be learned for application in the mental health and physical medicine setting with individuals and for groups.
Prerequisite(s): Completion of all common courses in the program.

TA2510 Psychiatric Disorders ●
This course provides a general overview of common psychiatric disorders, their management, theories of mental illness and psycho social 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 and PTA in this setting.

TA2620 Therapeutic Skills 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 students will learn to adjust and fit ambulatory devices, and apply the techniques learned to the most common neurological and musculo-skeletal conditions.
Prerequisite(s): Completion of all common courses in the program.

TA2720 OTA Practical Experience
This nine-week field experience will provide the opportunity for students to continue to develop their therapeutic skills and practice entry level competence as an OTA.
Prerequisite(s): Completion of all other Program courses

TA2730 PTA Practical Experience
This nine-week field experience will provide the opportunity for students to continue to develop their therapeutic skills and practice entry level competence as a PTA.
Prerequisite(s): Completion of 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

TD2110 Thermodynamics
This is an introductory course in thermodynamics. Its purpose is to 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
This is both a theory and practical course in the topic of refrigeration and air conditioning. It should draw on knowledge gained in Thermodynamics in the specific application refrigeration.
Prerequisite(s): TD2100

TD3110 Thermodynamics
This course deals with underlying theories and applications of heat transfer. These principles are then related to the unit processes involved in pulp and paper manufacture. Topics include: heat transfer and measurement, conduction, convection and radiation, heat exchangers, combustion and energy conversions. Examples of applications include: thermal efficiency of biomass and recovery furnaces, steam penetration, heat transfer in digesters and paper dryers, conversion of mechanical energy to heat energy in refiners, heat losses and heat conservation in the pulp and paper industry.
Prerequisite(s): MA1101, TD2100

TD3200 Petroleum Thermodynamics
The second of two courses in thermodynamics. The students apply and build on the skills and knowledge developed in the first course by applying thermodynamic principles and equations to design and evaluate processing systems in the petroleum industry. Topics include design of heat exchangers, steam power generation, refrigeration and compressor design.
Prerequisite(s): TD3100

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.

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

TR1400 Travel Sales Skills
This course is designed to emphasize the skills and techniques needed to counsel and sell the travel products to clients in an ever-changing environment.

TR1510 World Tourism Destinations I
This course is an in-depth study of the United States, Caribbean and Atlantic Islands, Mexico, Central America and South Americas. Topics studied include major tourist attractions, culture, special events, climate and weather, currency, entry requirements, health certification and other aspects of life in selected tourism destinations.

TR1511 World Tourism Destinations II
This course is an in-depth study of Europe, selected Middle East Countries, Africa, Asia, Australia, New Zealand and the Pacific Rim. Topics studied include major tourist attractions, culture, special events, climate and weather, currency, entry requirements, health certification and other aspects of life in selected tourism destinations.

TR1600 Newfoundland & Labrador Tourism Destinations
This course explores Newfoundland and Labrador destinations through the themes of culture/folklore, history, cultural events, sport attractions, physical attractions, festivals and special events. Students will discover that special charm that is Newfoundland and Labrador.

TR1610 Introduction to Tourism
This course is an introductory course designed to give students an overall view of tourism. Students will explore the theories of travel motivation before moving into the eight sectors of tourism. Issues and challenges facing tourism will also be covered.

TR1620 Canadian Tourist Destinations
This course introduces the major elements that make up Canada's geography such as natural environment and population and then looks in-depth at the regional aspects of the geography of Canada. This will help students understand the diversity of this country and provide information on Canada's vacation lands and tourist attractions.

TR1700 Local 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 National Occupational Standards for the Canadian Tourism Industry.

TR2220 Tariffs & Ticketing: Domestic
This course involves the study of airline fares, passenger rules, taxes and ticketing for all travel within Canada and the United States.

TR2221 Tariffs & Ticketing: International
This course gives the student a thorough understanding of passenger rules relative to international travel along with methods used in the determination of accurate fares and charges for travel from North America via the North Atlantic and within the Western Hemisphere.

TR2230 Travel Computer Reservations I
Students will be introduced to the Apollo Computer Reservation System used in the travel industry. Topics will include making air reservations, fares and ticketing, mandatory fields and formats.

TR2231 Travel Computer Reservations II
This course is a continuation of the Apollo Computer Reservation System studied in Travel Computer Reservations I. Students will examine more advanced topics such as roommaster and carmaster, changing PNR's, and international fares.
Prerequisite(s): TR2230

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TR2320 Travel Product Knowledge I
This is an introductory course which is designed to enable students to acquire the product knowledge associated with the most common travel requests such as air reservations, accommodations, car rentals and insurance.

TR2321 Travel Product Knowledge II
This course is a continuation of Travel Product Knowledge I which will enable students to acquire the product knowledge associated with selecting, pricing and selling tours, rail transportation, cruise and marine transportation and ground transportation.
Prerequisite(s): TR2320

TS1100 General Studies
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

TS1110 Operating Lineman Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

TS1120 Fabricator Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

TS1150 Mechanical Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

TS1200 Precision Measurement
This general studies course requires the use of precision measuring instruments. It involves operating, maintaining and storing precision measuring instruments. It includes information on decimals, measuring systems, measurement conversion and purposes of precision measurement.

TS1210 Precision Measurement
This course requires the use of precision measuring instruments. It involves operating, maintaining and storing precision measuring instruments. It includes information on decimals, measuring systems, measurement conversion and purposes of precision measurement.

TS1260 Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

TS1300 Rigging
This general studies course requires the use of rigging equipment, ladders, block and tackle, and safety equipment. It involves installing, testing and maintaining rigging; and tying knots and splicing rope. It includes information on safety requirements, types of ropes, types of knots, slings, types of scaffolds, and types of ladders.

TS1510 Occupational Health and Safety
Upon successful completion of this course, the apprentice will be able to prevent accidents and illnesses and to improve health and safety conditions in the workplace.

TS1520 WHMIS
Upon successful completion of this course, the apprentice will be able to interpret and apply the Workplace Hazardous Materials Information System (WHMIS) Regulations.

TS1530 First Aid
Upon successful completion of this course, the apprentice will be able to recognize situations requiring emergency action and to make appropriate decisions concerning first aid.

TS1630 Tourism Service
This course focuses on the role of tourism employees in providing quality customer service to all tourists and visitors to their businesses. It is important that employees have a positive attitude and the necessary skills to effectively listen and interpret customers' concerns about a product, resolve customers' problems and determine customers' wants and needs. Students will be able to use the skills and knowledge gained in this course to effectively provide a consistently high level of service and cultural sensitivity to all tourists and visitors to our province. Students will also complete Super Host and Senior Friendly training as part of this course.

UL4100 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.

UL4200 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 sonographic appearances.
Prerequisite(s): Successful completion of 1st semester
Co-requisite(s)s: UL4220, UI4301, UL460

UL4220 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, peritoneal compartments, reproductive organs and vasculature. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal / abnormal sonographic appearances.
Prerequisite(s): Successful completion of 1st semester
Co-requisite(s)s: UL4301, UL4200, UL4600

UL4300 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 technique utilized for abdominal and obstetrical examinations.

UL4301 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 and gynecological examinations.
Prerequisite(s): Successful completion of 1st semester
Co-requisite(s)s: UI4200, UI4220, UL4600

UL4400 Abdomen
This course is designed to enable students to acquire a comprehensive knowledge of abdominal ultrasound. The didactic phase of the program will include instruction in abdominopelvic organs and vasculature. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol, and normal/abnormal sonographic appearances.

UL4500 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, scrotal, testes and prostate anatomy. Emphasis will be placed on cross-sectional anatomy, pathophysiology, examination procedures and protocol and normal / abnormal sonographic appearances.
Prerequisite(s): Successful completion of 2nd semester

UL4600 and UL4601 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 speciality areas in an efficient and effective manner.
Prerequisite(s): Successful completion of 1st semester
Co-requisite(s)s: UI4200, UL4220, UL4301

UL4601 Clinical Training
This phase of the program is designed to enable the student to acquire, to the fullest extent, the technological skills necessary to become competent in the practice of ultrasonography. Emphasis is placed on extensive "hands on" scanning in the clinical setting. Upon completion of training the student will be able to produce high quality scans in all general and most speciality areas in an efficient and effective manner.
Prerequisite(s): Successful completion of 2nd semester
Co-requisite(s)s: UL4500

VA1100 Drawing I
This course is designed to introduce students to the rudiments of drawing, and of seeing through the activity of drawing. Observation and experimentation with drawing materials are a focus of this course.
Co-requisite(s)s: VA1200

VA1101 Drawing II
This course is designed to consolidate and refine skills learned in Drawing I. Careful observation and experimentation with graphic media are still major themes. Particular attention is paid to individual problems to ensure that basic drawing skills are attained.
Prerequisite(s): VA1100

VA 1150 Animation Drawing I
This course builds upon the skills acquired in VA1100 by providing the student with a structured series of studio experiences which develop competencies in sketching the human form and objects. The focus is upon capturing the human form at rest and throughout a range of motion. Animation storyboarding will be introduced through a simple comic book project.
Prerequisite(s): VA1100

VA1200 Design I
This is an introductory course that provides a clear understanding of the elements of design and how they can be used in visual communications.

VA1201 Principles of Design
This is an introductory course that provides a clear understanding of the principles of design and how they can be used in visual communications.
Prerequisite(s): VA1200

VA1230 Graphic Design I: Design Fundamentals
This introductory course provides a clear introduction to the elements and principles of design, and how they can be utilized for basic graphic arts tasks. It also introduces students to the role of the Graphic Designer in the Graphic Arts industry, and exposes students to the basic operation of a design studio environment.

VA1231 Graphic Design II: Design for Business
This course is designed to further develop students' graphic design skills using digital tools. A specific focus of the course is to introduce students to the design requirements of business, including information graphics, business stationery, signage and display advertising.
Prerequisite(s): VA1230; GA1110; GA1410; MC1180

VA1300 Materials & Techniques I
This is the first of two courses in materials and techniques. It is the primary introduction to most visual arts studio areas in the first year of the Visual Arts Program. Each studio area is introduced in a four week unit during which students are taught the fundamental techniques of that particular medium. Media covered include painting, printmaking and pottery.

VA1301 Materials & Techniques II
This is the second of two courses in materials and techniques. It is the primary introduction to most visual arts studio areas in the first year of the Visual Arts Program. Each studio area is introduced in a three to four week unit during which students are taught the fundamental techniques of that particular medium. Media covered include sculpture, pottery, metallurgy and fibre arts.
Prerequisite(s): VA1300

VA1320 Surface Embellishment I
This art/design based course introduces basic surface embellishment and manipulation techniques. It provides the student with the knowledge and skills relative to stitchery, quilting and related techniques. The student will apply creative solutions to assignments.
Co-requisite(s)s: VA1100; VA1200; VA1400

VA1321 Surface Embellishment/ Manipulation II
This art/design based course introduces intermediate surface embellishment and manipulation techniques. It provides the student with the knowledge and skills relative to stitchery, quilting and related techniques. The student will apply creative solutions to assignments.
Prerequisite(s): VA1100, VA1200, VA1320, VA1400
Co-requisite(s)s: VA1101, Va1201

VA1330 Chemical Dye I
This art based print and dye course provides the student with an introduction to working with chemical dye techniques. It gives the student information and skills relative to the application of dyes to fabric, yarns and other textile materials, and encourages the student to develop creative solutions to assignments.
Prerequisite(s): ST2100, VA1400, VA1200, VA1100
Co-requisite(s)s: VA1101, Va1201

VA1331 Chemical Dye II
This intermediate art based print/dye course provides the student with experience in working with more complex dye technology and application methods. It gives the student information and skills relative to textile printing methods, including silk screen ensuring a personal, creative approach to assignments.
Prerequisite(s): VA1330
Co-requisite(s)s: VA2100, VA2210

VA1350 3D Modelling
This course provides students with the skills to produce original pieces from clay or plasticine. The physical modelling of an object or human form refines skills in 3D visualization, enabling digital pieces to attain higher levels of realism. Additionally, physical models can assist in selling a concept.
Prerequisite(s): VA1151

VA1400 Colour Theory
This introductory course provides the student with a clear understanding of the elements and principles of colour theory, and how colour can be used to create more effective visual images.

VA1500 Photographic Illustration I
An introduction to the basics of photography as applied to graphic art and design applications. The visual aspects and rendering of graphic information photographically reproduced towards enhancement of visual and graphic perception.
Prerequisite(s): VA1100

VA1501 Photographic Illustration I
A continuation of Photography I. This course stresses the importance of photographic insight as applied to the advertising industry. The reproduction of the photographical image as an intrinsic part of an overall design, and specifically as a design anchor point, will be especially emphasized.
Prerequisite(s): VA1500

VA1700 Graphics Art and Design
This course is designed to introduce students to the rudiments of drawing and graphics design. Topics such as drawing fundamentals, elements of design, and principles of design will be discussed.

VA2100 Drawing III (Intermediate Level)
This course is designed to consolidate and refine skills learned in Drawing II. Careful observation and experimentation with graphic media are still major themes. Particular attention is paid to individual problems to ensure that basic drawing skills are attained.
Prerequisite(s): VA1101

VA2101 Drawing IV (Advanced Level - Visual Arts)
This course is designed to consolidate and refine skills learned in Drawing III. Careful observation and experimentation with graphic media are still major themes. Particular attention is paid to individual problems to ensure that basic drawing skills are attained.
Prerequisite(s): VA2100

VA2111 Drawing IV (Advanced Level - Textile Studies)
This course is designed to consolidate and refine skills learned in Drawing III. Careful observation and experimentation with graphic media are still major themes. Particular attention is paid to individual problems to ensure that basic drawing skills are attained.
Prerequisite(s): VA2100

VA2200 Design III
This is a required introductory course in three dimensional design for students in the visual arts program. The course provides students with a clear understanding of how line, shape, and volume can be controlled to produce interesting objects.
Prerequisite(s): VA1201

VA2201 Design IV
This is a required intermediate course in three dimensional design for students in the visual arts program. Students will have the opportunity to exercise their growing design competency through assignments and independent study projects.
Prerequisite(s): VA2200

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VA2210 Design II
This course is designed to consolidate and refine skills learned in Design I & II. Experimentation, and acquisition of new skills with specific media and techniques are major themes in this course. Particular attention is paid to developing an individual working method in design that allows the student to use design theory in practical applications.
Prerequisite(s): VA1201

VA2211 Design IV
This course is designed to consolidate and refine skills learned in Design III. Use of new technology in the design process will be examined. Particular attention is paid to developing an individual working method in design that allows the student to use design theory in practical applications.
Prerequisite(s): VA2210

VA2231 Graphic Design IV: Identity Systems Design
This course is designed to give advanced graphic design students an understanding of and experience with developing complex identify systems for the private, governmental and non-profit sectors.
Prerequisite(s): Successful completion of all first year Graphic Design courses; GA1870; VA2240; GA1511; GA1800

VA2240 Graphic Design II: Packaging Design
This course is designed to introduce students to the theory and practice of package design. Students will be exposed to a variety of packaging concepts and options, and will apply their knowledge to the development of several packaging projects that incorporate their own ideas. Students will develop packaging solutions that meet clients' needs using industry standard software on the Apple MacIntosh and PC platforms.
Prerequisite(s): Successful completion of all first-year Graphic Design courses.

VA2320 Surface Embellishment III
This art based advanced surface embellishment and surface manipulation course provides the student with experience in both traditional and contemporary approaches and techniques. It gives the student information and skills relative to stitchery, quilt, and other assembly techniques ensuring a personal creative approach to assignments.
Prerequisite(s): VA1321, VA1201, VA1101
Co-requisite(s)s: VA2100, VA2210

VA2321 Surface Embellishment IV
This final art based surface embellishment/manipulation course provides the student with an opportunity for self-directed study. Specialized information pertinent to individual project needs will be provided. Although this course stresses self-direction and an independent approach to study, the student must fulfill the course requirement outlined by staff.
Prerequisite(s): VA2320, VA2210, VA2100
Co-requisite(s)s: VA2211

VA2330 Chemical Dye III
This final art based chemical, print and dye course provides the student with an opportunity to self-directed study. Special technical information pertinent to individual needs will be provided. Although this course stresses self-direction and an independent approach to study, the student must fulfill the course requirements outlined by staff.
Prerequisite(s): VA2100, VA2210, VA1331
Co-requisite(s)s: Va2111

VA3100 Life Drawing I
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 presented.

VA3550 Screening and Peer Critique
This course provides students with an opportunity to engage in weekly peer review sessions during which all students will demonstrate the projects that they are working on. The intent is to enable each student to have projects critiqued by peers and the instructor for the program, while availing of the opportunity to learn from the creative applications of those same peers.

WA1100 Hydraulics
This course is included in the Civil Engineering Technology program as an engineering science to provide the student with a knowledge of the principles of fluid mechanics and the application of these principles to practical applied problems. Students completing this course should have the ability to design and analyze practical fluid flow systems and continue learning other applied courses such as hydrology, urban services design, urban planning, etc.
Prerequisite(s): MA1101, PH1101

WA1120 Fundamentals of Hydraulics and Pneumatics
This course in hydraulics and pneumatics requires the use of basic tools, shop equipment and test equipment. It involves disassembling and reassembling hydraulic and pneumatic systems; and inspecting, testing and repairing/replacing component parts and making adjustments. It includes information on the operation of different types of hydraulic and pneumatic systems and component parts.

WA1200 Hydrology
This course is designed to serve as an introductory course, one that includes the major concepts and principles of hydrology.
Prerequisite(s): WA1100

WA1810 Water Supply Systems
This course in piping systems requires the use of tools and equipment, and materials and supplies. It involves designing, installing, testing and maintaining water supply systems. It includes information on types of water supply systems and component parts.

WC1150 Co-op Work Term I
The three work terms are a required portion of the program. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, 12-16 weeks in duration, 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 is mandatory for work term eligibility.

This work term follows the successful completion of academic term 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. Throughout the co-op experience students experience new cultures; both business cultures (i.e. public, private, and not for profit sector small and large organizations and environmental cultures (i.e. Scotland, New York, Hull). They are learning from the new network of contacts and widening their perception of life and career choices.
Prerequisite(s): Successful completion of all courses in academic terms one and two.

WC1300 Work Term I
This work term follows the successful completion of semester 5 (Academic Term). For most students, it represents their first professional work experience in a Surveying environment and, as such, represents their first opportunity to evaluate their choice of pursuing a career in Surveying. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.
Prerequisite(s): Successful completion of 5 academic semesters

WC1301 Work Term II
This work term follows the successful completion of semester 7 (Academic Term). Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to undertake increasingly complex surveying tasks. Students should conscientiously assess the various opportunities relative to their individual interests.
Prerequisite(s): Successful completion of 7 academic semesters.

WC1330 Work Term
(Under Development)

WC1400 Co-Op Work Term I
This work term follows the successful completion of academic semester 4. For most students, it represents their first professional work experience in a service/production environment and, as such, represents their first opportunity to evaluate their choice of pursuing a career in Industrial Engineering. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.
Prerequisite(s): Eligibility according to co-op regulations in current College calendar.

WC1401 Co-Op Work Term II
This work term follows the successful completion of academic semester 6. Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to deal with increasingly technical industrial engineering principles and analysis techniques. Students should conscientiously assess the various opportunities relative to their individual interests.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar.

WC1700 Co-op Work Term I
For most students, this work term represents their first experience in an information technology engineering environment and therefore presents them with their first opportunity to evaluate their career choice. This work term follows the successful completion of semester 5. Students are expected to learn and develop and demonstrate the high standards of behaviour and performance normally expected in the work environment.
Prerequisite(s): Successful completion of semester 5 and GPA of 2.00

WC1701 Co-op Work Term II
The second work term provides students with a substantial degree of academic achievement with the opportunity to contribute to an employers operation. This work term follows the successful completion of semester 7. Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to deal with increasingly complex concepts and problems. Students should conscientiously assess the various opportunities relative to their individual interests. A substantive work report is also to be prepared by the student demonstrating competence in both technical content and communication skills.
Prerequisite(s): Successful completion of semester 7 with GPA of 2.00.

WC1900 Co-op Work Term I
This work term follows the successful completion of semester 5 in the Mechanical (Manufacturing) Engineering 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 this field. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar.

WC1901 Co-op Work Term II
This work term follows the successful completion of semester 7 in the Mechanical (Manufacturing) Engineering Technology program. For most students, it represents their first professional work experience in a service/production environment and, as such, represents their second opportunity to evaluate their choice of pursuing a career in this field. Students are expected to learn, develop, and demonstrate the high standards of behaviour and performance normally expected in the work environment.
Prerequisite(s): Eligibility according to Co-op regulations in current College calendar.

WC2150 Co-op Work Term II
This work term follows the successful completion of academic term 3. Students are expected to further develop and expand their knowledge and work-related skills and should be able to accept increased responsibility and challenge. In addition, students are expected to demonstrate an ability to deal with increasingly complex technical concepts and problems. Students should conscientiously assess the various opportunities relative to their individual interests and career aspirations.

The three work terms are a required portion of the program. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, 12-16 weeks in duration, 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 is mandatory for work term eligibility. During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth. Throughout the co-op experience students experience new cultures: both business cultures (i.e. public, private, and not for profit sector small and large organizations) and environmental cultures (i.e. Scotland, New York, Hull). They are learning from the new network of contacts and widening their perception of life and career choices.
Prerequisite(s): Successful completion of all courses in academic terms one, two & three.

WC2400 Co-Op Work Term III
This work term follows the successful completion of academic semester 8. Students should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. Students should have strong technical ability, good business judgement 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 Co-op Work Term III
This work term follows the successful completion of academic term 4. Students should have sufficient academic grounding and work experience to contribute in a positive manner to the management and problem-solving processes needed and practiced in the work environment. Students should become better acquainted with their discipline of study, should observe and appreciate the attitudes, responsibilities, and ethics normally expected of information technology professionals and systems analysts and should exercise greater independence and responsibility in their assigned work functions.

The three work terms are a required portion of the program. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, 12-16 weeks in duration, 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 is mandatory for work term eligibility.

During the on-the-job experience students develop their employability and technical skills, further enhancing their personal growth. Throughout the co-op experience students experience new cultures; both business cultures (i.e. public, private, and not for profit sector small and large organizations) and environmental cultures (i.e. Scotland, New York, Hull). They are learning from the new network of contacts and widening their perception of life and career choices.

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.

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.

WD1130 Gas Metal Arc Welding Fundamentals
This GMAW course requires the use of safety equipment, GMAW equipment and accessories, and materials and supplies. It involves setting up GMAW equipment, preparing and welding the joint, shutting down the equipment and testing the joint. It includes information on types of shielding gasses, power supplies, types of wire, methods of transfer, welding techniques, codes and standards, and GMAW parameters.

WD1160 Shop Fundamentals
This general studies course requires the use of safety equipment, tools, fasteners, shop equipment and facilities and manuals. It involves the development of safety practices in the operation and maintenance of shop tools, equipment and facilities. It includes information on general safety regulations, occupational health and safety, and fire prevention and suppression.

WD1200 Oxy-Fuel Cutting
This OFW course requires the use of welding equipment and accessories, materials and supplies and safety equipment. It involves setting up OFW equipment; preparing, cutting and welding metal; and shutting down, disassembling and storing equipment. It includes information on safety requirements, cylinder pressures, combustion and flames, storage and

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transporting of cylinders, and types of regulators.
Prerequisite(s): TS1120

WD1210 Oxy-Fuel Welding
This OFW course requires the use of welding equipment and accessories, materials and supplies and safety equipment. It involves setting up OFW equipment; preparing, cutting and welding metal; and shutting down, disassembling, and storing equipment. It includes information on safety requirements, cylinder pressure, combustion and flames, storage and transporting of cylinders, and types of regulators.

WD1230 SMAW 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.

WD1300 Oxy-Fuel Welding
Upon successful completion of this course, the apprentice will be able to identify procedures for the safe and effective set-up and operation of oxy-fuel equipment for heating, cutting and braze welding.

WD1310 Oxy-Fuel Welding
Upon successful completion of this course, the apprentice will be able to cut and weld thin metals by using oxy-fuel equipment.

WD1400 Introduction to Pipe Welding
This SMAW course requires the use of safety equipment, SMAW equipment and accessories, and materials and supplies. It involves setting up SMAW equipment, preparing and welding metal, shutting down equipment, and testing the joint. It includes information on stainless steel, aluminium and steel alloys, codes and standards, and types of electrodes.

WD1510 Metallurgy Fundamentals
This metallurgy course requires the use of hardenable steel, heating sources and temperature indicators. It involves shaping metal, determining heat ranges, applying heat, monitoring colour and temperature and quenching. It includes information on structure and properties of metals, heat treatment processes, production of materials, corrosion, expansion and contraction, millworking, casting, heat line bending, pre-heat and post-heat and alloying elements.

WD1520 Gas Tungsten Arc Welding Fundamentals
This GTAW course requires the use of safety equipment, GTAW equipment and accessories, and materials and supplies. It involves setting up GTAW equipment, preparing and welding the joint, shutting down the machine and testing the weld. It includes information on filler metals, electrodes, electrical theory, types of shielding gases, types of power sources and exotic metals.

WD2100 Welding GMAW/FCAW
This course is a continuation of Welding Technology and Processes II (WD1101). The emphasis is to familiarize the student with common semi and fully automatic processes, their control, limitations, and applications. Processes include GMAW, FCAW, SAW, EGW and ESW Welding. The student will be required to apply knowledge and experience to a variety of industrial problems (i.e. actual and simulated). Shielded Metal Arc processes, Welding procedures, CSA standard W47.1.
Prerequisite(s): WD1101

WD2101 Welding Technology & Processes IV
This course is designed to familiarize the student with the theory and practice of Gas Tungsten Arc 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

WD2110 Position Butt Welding
This SMAW course requires the use of safety equipment, SMAW equipment and accessories, and materials and supplies. It involves setting up SMAW equipment, preparing and welding the joint, shutting down the equipment and testing the weld. It includes information on codes and standards and distortion control.

WD2160 Position Welding (GMAW)
This GMAW course requires the use of safety equipment, GMAW equipment and accessories, and materials and supplies. It involves setting up GMAW equipment, preparing and welding the joint, shutting down the equipment and testing the weld. It includes information on types of welding machines, types of shielding gas, power supplies, types of wire, codes and standards, welding techniques, methods of transfer and GMAW parameters.

WD2190 Specialized Cutting and Welding
This specialized welding and cutting course requires the use of safety equipment, welding equipment and accessories, and materials and supplies. It involves setting up welding equipment, preparing and welding joints or cutting metal, shutting down equipment and testing welds. It includes information on stud welding, welding and cutting processes, consumables, principles of operation, process parameters and power supplies.

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, and W178.2 are discussed in detail. Other similar codes, standards, and specifications such ABS, Lloyds, AWS, and DNV will also be discussed and compared with ASME and CSA.
Prerequisite(s): WD1100, EG1100, CF1100

WD2210 Position Fillet Welding
This SMAW course requires the use of safety equipment, SMAW equipment, and materials and supplies. It involves setting SMAW equipment, preparing and welding the joint, shutting down the equipment and testing the weld. It includes information on codes and standards, joint design, expansion and contraction, and pre-heat and post-heat.

WD2240 Pipe, Tubing, & Specialized Welding (SMAW)
This SMAW course requires the use of safety equipment, SMAW equipment and accessories, and materials and supplies. It involves setting up SMAW equipment, preparing and welding metal, shutting down equipment, and testing the joint. It includes information on stainless steel, aluminum and steel alloys, codes and standards, and types of electrodes.

WD2250 Position Welding (GTAW)
This GTAW course requires the use of safety equipment, GTAW equipment and accessories, and materials and supplies. It involves setting up GTAW equipment, preparing and welding the joint, shutting down the equipment and testing the weld. It includes information on codes and standards, manipulation of electrodes, types of power sources, types of shielding gases, filler metals, electrode selection, and techniques for welding aluminium and stainless steel.

WD2260 FCAW Fundamentals
This FCAW course requires the use of safety equipment, FCAW equipment and accessories, and materials and supplies. It involves setting up FCAW equipment, preparing and welding the joint, shutting down the machine and testing the weld. It includes information on FCAW parameters, types of wire and drive roll systems.

WD2270 FCAW Position Welding
This FCAW course requires the use of safety equipment, FCAW equipment and accessories, and materials and supplies. It involves setting up FCAW equipment, preparing and welding the joint, shutting down the machine, and testing the weld. It includes information on FCAW parameters, types of wire, and drive roll systems.

WD2300 Failure Analysis
Actual cases of failed structures will be studied in detail. The case studies involve analysis of material used, design procedures followed, fabrication methods, and testing controls used. Emphasis will be placed on the design of weldments to avoid fatigue and brittle fractures using fracture mechanics.
Prerequisite(s): CF1101, CF2510

WD2320 Arc Welding
Upon successful completion of this course, the apprentice will be able to set up and perform basic arc welding.

WD2330 Mig Welding
Upon successful completion of this course, the apprentice will be able to describe the basic MIG (GMAW) welding process and provide the trainee with the skills and knowledge needed to use MIG welding equipment.

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, austenic manganese steel and tool and die steels.
Prerequisite(s): CF1100, CF1101

WD3100 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 assign-

ment. Arc Welding Processes, Weld Quality Control and Inspection, Welding Procedures and Welding Codes.
Prerequisite(s): WD1100, WD1101, WD2100, WD2101, WD2200, SP2310, SP2311

WT1180 Intersession Work Term
The work term is a required portion of the program. The work term provides a unique learning experience in a real work place setting. Work terms must be program relevant, and 15 weeks in duration.
Participation in the work term is determined through a competitive process and successful completion of all courses prior to the work term is mandatory for work term eligibility.

This work term follows the successful completion of the preceding academic term. For most students, it represents their first professional work experience in a business environment, and as such represents their first opportunity to evaluate their choice of 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 terms.

WT1200 Practical Training
This course consists of 15 weeks training in the hospitality industry and in a health care institution. Practical training in the hospitality industry may include dining room service, bartending and controls, while health care may include institutional food service and therapeutic diets.
Prerequisite(s): Completion of all first year courses.

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): Completion of all courses in the first three semesters and a minimum cumulative GPA of 2.00.

WT1700 Biomedical Practicum
Comprehensive on-the-job training for Biomedical students in a setting within the health care engineering field. The duration of this particular section is seven weeks and will be scheduled at the end of the eighth semester. Students will choose among a variety of differing work environments such as placement in a hospital biomedical engineering department or a private sector medical supply company. The biomedical practicum is designed to enable the student to gain valuable experience in a Biomedical engineering work environment. This experience may be obtained in a health care setting or with a medical equipment supplier or distributor. The duration of the practicum is seven weeks to be scheduled upon satisfactory completion of all academic course work. Students abilities will be assessed by the Employer and the College staff.

XD1350 Environment & Ethics
This course introduces students to the legal and ethical rights, obligations and responsibilities of the engineering profession. Through the use of readings, case studies and debates, students will gain an understanding of the intent and application of professional code of ethics, Tort Law, environmental protection and occupational health and safety.

XD1810 Solid State Motor Controls
This course introduces the student to solid state electronics in motor controls. It includes coverage of power electronic devices, solid state relays and protection devices, and drive electronics.
Prerequisite(s): DP1100; AE2301; XD2300

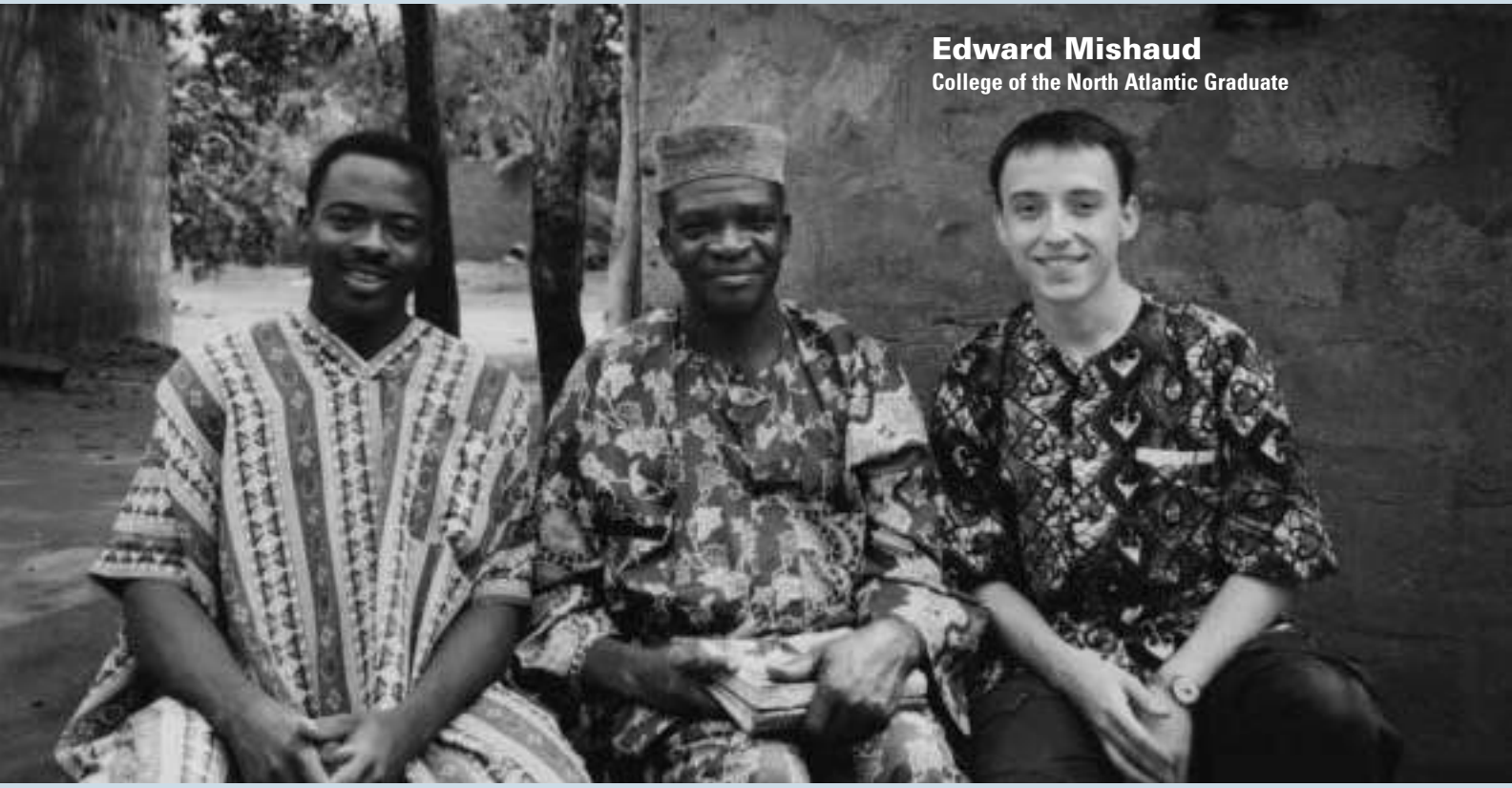
XD2300 Electromechanical Motor Controls
This course introduces the student to motor control concepts and electromechanical control devices. The students become familiar with control diagrams, techniques, and methods. It provides the students with knowledge and background to support the more advanced control concepts presented in later courses.
Prerequisite(s): PE1500

XD2500 Programmable Controllers I
This course introduces the student to programmable logic controllers. It covers PLC concepts and applications. The students become familiar with PLC types, wiring details and programming techniques. Actual programs and system operation are introduced through lab exercises.
Prerequisite(s): DP1100; XD2300

XD2900 Programmable Controllers II
This course is a continuation of XD2500. It extends the students knowledge of PLC control through advanced instructions and practical exercises with industrial control trainers.
Prerequisite(s): XD2500

● Available through @College Distributed Learning Service ⊗ Available through correspondence

Index



Edward Mishaud
College of the North Atlantic Graduate

Public college can take you places

Edward Mishaud is a successful graduate of College of the North Atlantic (CNA).

Edward began with a diploma in Journalism and transferred his college credits to the University College of Cape Breton (UCCB) toward a three-year undergraduate degree, which he completed in one year.

He went on to the University of King's College School of Journalism in Halifax, and completed a one-year Post Baccalaureate of Journalism there.

In between courses of study, Edward took part in a Canada World Youth exchange program which took him to Bénin, Africa for several months.

Where is he now? Edward's educational and volunteer experiences qualified him for a six month internship with the United Nations Volunteer Organization in Bonn, Germany. His assignment is to provide logistical support in the Africa section with a focus on HIV/AIDS.

The work is rewarding, challenging, and yes… exciting. How did he get there?

"For me, it all began with my educational experience with College of the North Atlantic. It was the post-secondary beginning which equipped me with the skills and confidence I needed to pursue my career aspirations."

Students like Edward are realizing the possibilities open to them with the education they receive at public college.

Opportunities for advancement

Many CNA programs have transferable credits, allowing students to continue their education – an education which will take them places.

CNA offers a College-University Transfer Year in cooperation with Memorial University, whereby students can complete the first year of university at a number of college campuses.

Graduates of CNA's Occupational Therapists Assistant program are the first in Atlantic Canada to receive credit toward the completion of the Bachelor of Sciences (Occupational Therapy) degree at Dalhousie University.

Graduates of the Visual Arts program will receive up to two years of a four-year Bachelor of Fine Arts at the Nova Scotia College of Art & Design.

Graduates of CNA's two-year Forestry Resources Technology diploma will receive advanced standing towards a Bachelor of Science (Honours) in Forestry at Lakehead University in Ontario.

A diploma from CNA's Business Management (Accounting, Human Resource Management, or Marketing options) receives a block transfer of three years to the four-year Bachelor of Business Administration degree in Management at Northwood University, Michigan.

Where will public college take you?

For more information about program transferability, contact your local campus or visit the Newfoundland and Labrador Council on Higher Learning: **www.edu.gov.nf.ca/council**

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