1995-1996 Calendar

Your Bridge to the Future®
Red River Community College (RRCC) reserves the right to make changes to the information contained in this calendar without prior notice. Although every attempt is made to ensure accuracy and adherence to program outlines and policies and procedures as stated, the College reserves the right to make changes to program content, instructional methods, fees, rules and regulations and to cancel programs when deemed necessary.

The Board of Governors, its officers, agents or employees assume no liability, expressed or implied, for the result of sickness or accidents involving personal injury to any student, whether in connection with the College’s instruction program, wherever conducted, or incidental to other activities on the College’s properties or elsewhere.
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As you explore the various career options that are available to you, I hope that you will give serious consideration to enrolling in one of the many programs offered at Red River Community College. Over the years, our graduates have consistently exceeded an 85% overall employment rate which is indicative of our ongoing efforts to provide a quality educational experience. We are extremely proud of our many graduates who continue to be very successful in their chosen careers.

The concept of job security has been changing. Instead of being provided by a particular employer throughout one's working life, security is now associated with the skills possessed by an individual regardless of employer. It is therefore important that you acquire a sound educational base and then continue to expand throughout your life. RRCC is committed to providing programs, courses, and services to assist you in establishing a strong base for your entire career.

RRCC would like to be part of your future. Come and talk with us.

Dr. Tony Knowles
President
Policies, Procedures and Services

Section A

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Academic Policies and Procedures

The following policies and procedures apply to all courses and programs at Red River Community College. Students are reminded that it is their personal responsibility to be familiar with these policies and procedures. Divisions may have supplementary policies and procedures available at the time of registration. If students are in doubt about any aspect of these policies and procedures, they should consult their department Dean or Chair.

Security of Academic Records
Guidelines on the disclosure of student records information are intended to protect the individual’s right to privacy and confidentiality of academic records throughout the College. A student’s academic record does not include health or counselling records, which are kept separately from the academic records. Student marks and personal information are released to external parties only with the written consent of the student.

Certain incidents of a disciplinary, safety, health or criminal nature that lead to suspension or expulsion are noted permanently on the College’s internal records.

Attendance/Absence from Class
Students are provided with a timetable which indicates when and where each class will be held. Requests for changes to a timetable must receive written approval of the Chair. Regular attendance is expected and may be mandatory for some courses in the various divisions. Students are advised of attendance requirements when their classes begin in a course/program.

A student who remains away from classes for five consecutive class days without notifying the Chair and obtaining approval, may be considered to have withdrawn (See Student Readmission to Program Policy). Students who receive financial assistance should also consult with the sponsoring agency to determine what special conditions may apply to attendance.

Absence for any cause in no way relieves students of the responsibility for completing the work in courses and programs to the satisfaction of the instructor. Students unavoidably absent or late because of illness or some other acceptable cause are still responsible for classwork or assignments missed. They must advise their instructor and/or Chair and make other arrangements for handing in completed assignments. Students may be required to provide medical certificates or other documentation as appropriate. This attendance policy does not apply to apprentices attending the College for the institutional component of their apprenticeship program. However, apprentices are required to comply with the attendance policy established by the Apprenticeship and Training Branch, Manitoba Education and Training.

Transfers Between Red River Community College Programs
In order to improve accessibility and to provide flexibility, students may transfer between programs. Students may also transfer course credits and grades from one program to another. Students wishing to transfer to another program should contact the Chair of their department. An enrolled student may be permitted to transfer from one program to another provided:

a) there is space available in the program to which transfer is requested;
b) the student has the prerequisite(s) for the program;
c) the transfer is approved by the Deans and Chairs of both departments.
Where a course, which has been delivered through Red River Community College, has been designated as equivalent and accredited to another program, the actual letter grade will be transferred and shown on the transcript provided that the course has not previously been used to earn a certificate, diploma or advanced diploma. Where a student receives advanced standing for credits earned in previously completed programs, the course name for which advanced standing is being granted will appear on the transcript along with a designation of CR.

Courses submitted for transfer within Red River Community College must meet the following criteria:
1) the course has been examined;
2) the student has a minimum of a D;
3) the course is designated as equivalent in content and duration to the course for which credit is being requested;
4) the standard of the course is acceptable to the receiving department;
5) the course was completed within the past five years (eight years for Continuing Education).

**Note:** the “N” (e.g., B11-A191N Accounting) following any Continuing Education course code number indicates that the course has been evaluated and that a credit in the course may be transferred to a day program.

**Transfer of Credits to Red River Community College Programs**

Credits gained at another post-secondary institution may be transferred to Red River Community College and used as credits toward a College certificate or diploma.

**Procedures:**

a) a written request for credit must be submitted to the Dean or Chair no later than three weeks after the commencement date of the course. Preferably, requests for credit should be made prior to the commencement of a course;
b) transfer credit will be granted only to students registered in a program at Red River Community College;
c) normally, only courses completed successfully with a grade of C or better will be considered for transfer. Programs using a competency-based-learning format may require higher standards of proficiency for transfer credit;
d) individual courses will be evaluated for credit by the appropriate Chair. Length of time since the course/program was taken will be a factor considered in granting of credit. For Continuing Education students, the evaluation will be conducted in collaboration with the appropriate academic Chair if credit is also being sought in a day program;
e) it will be the student’s responsibility to provide original or certified transcripts and course descriptions to assist in the assessment of equivalency;
f) for the purpose of evaluating previous academic experience, the person conducting the evaluation may request an interview with a transfer student. If necessary, one or more instructors may also participate in the interview.
g) the decision of the person conducting the evaluation must be approved by the Dean of the instructional area (or designate) or, in the case of Continuing Education courses, by the Dean, Continuing Education;
h) credits granted on a transfer basis will appear on the student’s record as CR, with no grade point value;
i) no student will be granted more than 75 percent of the credit requirements for graduation through transfer of credits. The balance must be earned through actual studies at Red River Community College.

*Note: Requests to assess out-of-country credentials will be considered on an individual basis.*

**Prior Learning Assessment/Challenge for Credit**

Prior learning assessment (PLA) at Red River Community College is a process in which individuals have the opportunity to obtain credit for skills and knowledge gained outside the classroom and/or through other educational programs. Prospective applicants should contact the Registration Department or the appropriate Chair to obtain specific information about procedures and fees.

**Progress in College Programs**

Students must maintain a satisfactory scholastic standing to progress from term to term in a program. Satisfactory scholastic standing is determined by individual departments and progression requirements are formally communicated to students at the beginning of the program.

Certain program areas are designated for mastery learning, where there are clearly defined standards of performance. To receive credit in these areas, students must demonstrate mastery of all knowledge and performance requirements.

Students who fail to make satisfactory progress or who show poor attendance may be placed on academic probation. Specific conditions will be identified that must be met by the student within a specific time. If these conditions are not met, the student may be required to withdraw from the program.

**Evaluation of Student Progress**

The regulations pertaining to the method of evaluation for courses are established by the instructional department and will be available in writing within the first two weeks after classes begin.

1) **Evaluation of Students in Programs Delivered in Traditional Mode**

   A student's final standing is determined by achievement throughout the term or level, taking into consideration evaluation measures such as classroom tests and examinations, laboratory work, essays, reports, projects, supervised practical experience, participation, and attendance.

   Instructors normally advise students of the method of evaluation in each course at the beginning of the instructional term. Students have a responsibility to ensure they receive information on evaluation methods and how these will be applied in each course.

   In most courses, term essays, projects, reports, labs and tests account for a substantial portion of the final grade. Students must submit assignments on time as work submitted after established deadlines may receive reduced or failing grades. If unable to meet the established deadlines, students are responsible for making other arrangements with their instructors/Chairs.

2) **Evaluation of Students in Competency-Based-Learning Programs**

   Students are evaluated on identified course competencies on a module-by-module basis. The method of evaluation, along with achievement expectations for each module, is evaluated individually and given an individual rating.
For most competencies, students have up to three attempts to demonstrate their competency by completing a knowledge test at a minimum 80% level and completing a performance test in which all essential criteria are achieved. Chairs and/or instructors in specific program areas may establish limitations on the number of attempts a student may make for specified competencies and will inform students of these limitations when they enter the program. Mastery standing will be awarded for each competency achieved.

Student grades for each competency will be recorded as:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Mastery</td>
</tr>
<tr>
<td>INC</td>
<td>Incomplete – some requirements outstanding</td>
</tr>
<tr>
<td>CR</td>
<td>Credit awarded</td>
</tr>
<tr>
<td>NM</td>
<td>Non-mastery.</td>
</tr>
</tbody>
</table>

A statement is made on the transcript indicating that “Mastery” means that 80% or higher was achieved in both knowledge and performance tests for that competency. Program maps including time guidelines are provided to students. Instructors, who work with students as student advisors, will assist students in monitoring their progress and planning their approach to the next modules.

Deadlines are established for completion of a minimum level of competencies. Students who may be unavoidably absent for some acceptable cause must advise their instructors and Chair and make other arrangements for completing requirements.

3) Evaluation in Co-operative Education/Work Experience

Students who register for programs that have co-operative education work terms, or in programs that have practical/work experience, must accept that some evaluations may be carried out by persons who are not college instructors.

4) Grading System

The grading system applies to all courses offered for credit, whether in regular day or Continuing Education programs. The level of student achievement in each course of a program is denoted by a letter grade, as follows:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Point Description</th>
<th>Grade Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.5</td>
<td>Outstanding</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
<td>Excellent</td>
</tr>
<tr>
<td>B+</td>
<td>3.5</td>
<td>Very good</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>Good</td>
</tr>
<tr>
<td>C+</td>
<td>2.5</td>
<td>Above average</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>Average</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td>Marginal</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Failure</td>
</tr>
<tr>
<td>P</td>
<td>N/A</td>
<td>Pass</td>
</tr>
<tr>
<td>DNW</td>
<td>N/A</td>
<td>Did not write</td>
</tr>
<tr>
<td>CR</td>
<td>N/A</td>
<td>Credit awarded</td>
</tr>
<tr>
<td>INC</td>
<td>N/A</td>
<td>Incomplete – some requirements outstanding</td>
</tr>
<tr>
<td>PT</td>
<td>N/A</td>
<td>Prematurely terminated from program</td>
</tr>
<tr>
<td>VW</td>
<td>N/A</td>
<td>Voluntary withdrawal</td>
</tr>
</tbody>
</table>
Departments that equate letter grades to percentages for courses taught in a traditional format will establish a scale that indicates percentage ranges. Credit (CR) is recorded for competencies awarded through experiential learning or from another recognized training or post-secondary educational institution.

a) **Credit Hours:** Credit hours attached to a course reflect the relative weighting of that course within a program of study. These credit hours are used as the course weighting when calculating the grade point average. Note that not all courses are assigned credit hours.

b) **Grade Point Average:** A grade point average (GPA) is calculated by multiplying the grade points achieved in each course by the course credit hours. The total product thus obtained is divided by the total credit hours for the courses taken.

\[
GPA = \frac{\text{Total Grade Points Earned}}{\text{Total Credit Hours}}
\]

**Example:**

<table>
<thead>
<tr>
<th>Course Points</th>
<th>Course Credit Hours</th>
<th>Associated Letter Grade</th>
<th>Grade</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>B</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>C</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>D</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>A</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>C'</td>
<td>2.5</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>CR</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[
\text{Total Grade Points} = \frac{39}{18} = 2.44
\]

**Cumulative Grade Point Average:** The Cumulative GPA is the grade point average obtained over all terms/years of a program. It is the cumulative grade point total divided by the total number of credit hours attempted at the College.

d) **Student Transcripts:** Terminating students in most programs are provided with a transcript. Each terminating student in a competency-based-learning program is provided with a transcript of competencies attained. Graduating students receive a transcript and a certificate or diploma.
Final Examinations

Students who absent themselves from examination sittings without a valid reason acceptable to the applicable Chair will receive a grade of F.

A student who is unable to write a final examination because of illness or other mitigating circumstances, must notify the Chair as soon as possible. Thereafter, the student must provide the Chair with a written advisement within seven days of the date of the exam. Verification (such as a physician's certificate, etc.) may be required. The student will receive a grade of DNW (did not write). The Chair will make arrangements with the student to write a suitable final examination as soon as possible.

If there are circumstances, such as illness, which may affect the student's performance on an examination and the student chooses to write the examination, he/she cannot appeal the results.

If a student misses scheduled examinations because of participation in an event that has the specific written approval of the College President, it is the student's responsibility to advise the appropriate Chair, in writing, well in advance of the exam sitting.

If a student arrives one-half hour or more after an examination has started, he or she will not be allowed to write at that sitting and must meet with the Chair to determine appropriate action.

1) Supplemental Examinations

Students who receive a failing grade in a course may write a supplemental examination if supplementals are allowed for the course and based on the following guidelines:

- supplementals will generally be permitted only where it is feasible to evaluate a student's mastery of a course by written examination;
- only one supplemental examination will be permitted in a course unless the Dean of the instructional area authorizes a second on medical or compassionate grounds;
- the student must have an overall term grade point average of 1.5 to receive supplemental privileges in a failed course;
- students who fail theoretical courses in the trades programs are permitted to write supplemental examinations at the end of the term, provided they have not accumulated failures in more than one related course or more than two theoretical units of trade theory;
- students who fail courses in the Business Accountancy program are permitted to write supplemental examinations at the end of the term provided they have not failed more than two courses;
- if a student fails a course which is a prerequisite for a course in the next term, he or she is allowed to proceed on a probationary basis with his or her course or practical work, until the results of the supplemental examination(s) is/are known;
- all supplementals must be written when scheduled and under no circumstance will the period between the receipt of a failing grade and the writing of a supplemental examination exceed one year;
- the time and location for the writing of supplemental examinations are arranged by the Dean or Chair;
i) part-time students who have failures are allowed to write supplementals within the same guidelines as full-time students. The required term average will be calculated on the basis of courses taken during that registration period;

j) students who fail supplemental exams must re-take the failed course.

When a student writes a supplemental exam, the results of this exam are used to calculate a final course grade by combining term marks and the supplemental mark. Both the new course grade and original failing grade (F) will appear on the transcript. Students who write supplemental examinations in trades programs will not receive a grade greater than a pass (P).

2) Retention of Examination or Major Term Test Papers

All final exam papers are kept by instructors for a minimum of three months into the next term (or level, in the trades programs). Major term tests not returned to students are kept for a minimum of three months after the test. If any challenges or academic issues arise during the retention period, all relevant exam results and term assignments must be kept until the complaint is resolved.

Auditing Courses

Students may audit courses for personal interest and not for credit. Students may choose to audit courses offered by the College provided vacancies exist in classes and they have received written approval from the Chair/Dean. There are, however, some courses which are not available for audit. Students who wish to audit a course must register for that course and the request to audit must be made prior to registration. Where a program has special selection criteria, the student may be required to meet these requirements to audit the program. Students who are auditing a course are not entitled to examination or other evaluation privileges. A credit will not be granted and the designation “AU” will be assigned at the end of the course. Students auditing any course pay the fee normally charged for the course.

Student Academic Misconduct

Academic standards and the reputation of students and the College are based on, among other things, academic honesty. The unacknowledged use of ideas or published material of others constitutes plagiarism. Other forms of dishonesty include cheating on exams, aiding and abetting cheating, the use of work prepared by others, accessing unauthorized computer accounts/files and/or software, falsification of laboratory results, falsification of academic records, violation of copyright laws and the like. All of these activities are unacceptable. Academic misconduct may result in a failing grade in the particular assignment or course and could include disciplinary action up to and including expulsion from the program.

Course/Program Withdrawal

Voluntary withdrawal from a course (i.e., “dropping the course”) must be done in writing and communicated to the student's Chair. The deadline for withdrawals will be three weeks prior to the first day of the final term examinations. Courses dropped before the deadline will have a VW registered on the transcript; those dropped after the deadline will result in an automatic grade of F. Sponsored students should consult with their agency prior to dropping courses and/or withdrawing from the College.
Students who wish to withdraw from their complete program of studies voluntarily must inform their Chair or instructor. The Chair will complete the required documentation authorizing possible refund of tuition fees for non-sponsored students. A copy of this documentation and validated tuition receipts should be submitted by the student to the Controller's Office. A student who withdraws without completing the necessary procedures noted above will not be eligible for any refund of tuition and fees.

**Student Readmission to Program**

Students who have withdrawn from a program must apply for readmission through the Chair. When a student reapplies to a program, he or she is subject to the admission/readmission requirements for that program. Upon receiving the written recommendation of the Chair, the Director of Registration will readmit the student based upon space availability in the program.

A student who has been suspended from a program is eligible for the first available seat in the appropriate term once the suspension period has been completed. A student who has been suspended will have tuition fees refunded on the basis of the normal refund policy.

A student who has been expelled from a program normally will not be considered for readmission to the College.

**Requirements for Graduation**

1) **Clearing of an Incomplete Course**

   Students who have not completed all the requirements of a course must make arrangements with the Chair to clear the deficiency within one year.

2) **Time Limitations**

   The maximum time period for the completion of all day program requirements leading to a Red River Community College certificate or diploma will be five years from the date of initial enrollment. The maximum time period for the completion of all program requirements leading to a Continuing Education certificate will be eight years from the date of initial enrollment.

   Students who require more than five years to complete a day program or eight years to complete a Continuing Education program must have the written approval of the Dean. This reflects the fact that course content is continually being revised and updated to parallel developments in business, industry and the professions.

3) **Residency Requirements**

   Students must attain at least 25% of their program credits through Red River Community College to be eligible for the College's diploma or certificate.

**Honours System**

1) **Dean's Honour Roll:** Full-time students who are enrolled in courses totalling 15 credits or more and who achieve a GPA of 3.5 or higher are recognized for that term as honour roll students.

2) **Honours Graduate:** Students achieving a cumulative grade point average of 3.5 or higher will graduate with Honours.
Issuing of College Diplomas and Certificates

Diplomas and certificates will be issued by the College to students who have satisfied all program requirements. This policy sets out the conditions that determine which type of document will be granted.

1) Advanced Diploma: Advanced Diplomas are issued to students who successfully complete a program of advanced studies which is a minimum of 600 hours in duration and which includes a formal evaluation. Advanced studies are post-graduate programs or courses which require a diploma or baccalaureate degree as an entrance prerequisite.

2) Diploma: Diplomas are issued to students who successfully complete a program which has a duration of two academic years or longer and includes formal evaluation. The program must be at least 1,600 hours in duration.

3) Certificate (Regular “Day-time” Programs): Certificates are (normally) issued to students who successfully complete a program which is a minimum of 240 hours in duration but less than two years, and which includes a formal evaluation.

4) Certificate (Continuing Education): Certificates are issued to students who successfully complete a Continuing Education program which is (made up of a minimum of six courses and has) a minimum of 240 hours in duration. All courses must include a formal evaluation. These certificates are distinguished from the day-time certificates by their different typography.

5) Certificate (Market Driven Training and Other Training Involving a Sponsor): Certificates are issued to students who successfully complete a Market Driven Training program which is a minimum of 240 hours in duration (eight weeks to five months in length). All courses must include formal evaluation. Often, the program has been developed in connection with a sponsor who will want to be identified on the document. (There are also programs that are co-sponsored by the College and a business or agency without the facilitation of Market Driven Training.)

6) Certificate of Achievement: A Certificate of Achievement may be issued to students who successfully complete a course or program that is less than 240 hours in duration. Credit may or may not be given toward regular College courses. There is some form of evaluation included. This certificate is also issued to students who have successfully completed the College portion of certain joint programs.

7) Certificate of Participation: A Certificate of Participation is issued to those who participate in a short course or workshop that has no evaluation and might vary in length from a few hours to a few days. The number of hours of instruction may or may not be given on the document at the discretion of the Chair or Director, as appropriate.
Application and Admission Process

The admission of applicants to College programs (excluding Continuing Education programs) will be guided by the following policies:

Application Process

1) Any person wishing to apply for a Red River Community College program must complete an official College application form for each program and submit it to the College along with a non-refundable application fee of $20 for each program.

2) In order to apply for a program, the applicant must be at least 16 years of age.

3) Applications are accepted and processed on an ongoing basis. The College will acknowledge, in writing, receipt of the application and will provide, in writing, information related to the admissions process.

4) Applicants applying for more than one program must indicate on their application if the program is their first choice, second choice, third choice, etc. This information is used for statistical purposes only. Applicants may request, in writing, to change the order of their program choices.

5) Application forms must include legible official transcripts. All transcripts and supporting documents must be in English or have English translations attached.

6) Application forms, transcripts and other supporting documentation will become the property of the College and will not be returned to applicants.

7) Applicants applying for programs with Grade 9/Senior 1, Grade 10/Senior 2 or Grade 11/Senior 3 entrance requirements must meet the minimum program entrance requirements prior to submitting an application.

8) Applicants applying for programs with Grade 12/Senior 4 entrance requirements may submit an application upon enrollment into Grade 12/Senior 4. They must include their final Grade 11/Senior 3 official transcript and a statement of the Grade 12/Senior 4 prerequisite subjects in which they are currently enrolled.

9) Applicants who do not meet the entrance criteria may apply as mature applicants. Mature applicants must be 20 years of age or older by September 30 in the year of registration. Mature applicants must include with their application an official transcript and a detailed resume which may assist in determining their eligibility. Mature applicants may be required to write College entrance tests. Some applicants may be advised to complete the specific subjects required for entry into the program.

10) Applications for individuals enrolled in Red River Community College Preparatory programs will be processed conditional to successful completion of the preparatory program.

11) Applicants who have completed the Occupational Entrance High School programs may be administered College entrance testing to determine their level of basic skill preparation.

12) Applicants who are reapplying, including students previously enrolled in the program, must submit a new application form and supporting documentation. Note: a) If an application for reentry into a program is submitted within one year of the last date of attendance in that same program, payment of the application fee is not required. b) An applicant who has been rejected for not meeting program prerequisites and subsequently provides proof of the required prerequisites for that program within one year, will not be required to pay a second application fee for that program.
13) Applicants will receive written notice of any changes to entrance criteria. Applicants who met the original entrance requirements and were not as yet accepted into the program, will be required to meet any new program prerequisites prior to acceptance into the program.

14) It is the responsibility of the applicants to notify the College's Registration Department of any changes to their personal information.

15) Applicants submitting requests for a name change, must provide supporting legal documents verifying the change.

16) Applicants who do not respond to College correspondence, as requested, will have their application cancelled.

17) Applicants who are rejected at any step in the admission process, may request a review of their application status.

18) Applicants submitting falsified documents may be referred to appropriate authorities for prosecution under the Criminal Code of Canada.

19) Applicants reapplying after having been expelled for disciplinary measures would be required to undergo further assessment.

**Application Review Process**

1) Applicants must meet the academic, special selection and physical requirements of the program for which they are applying.

2) Applications for programs controlled by hospital/agency selection boards or other agencies, will be submitted to the College for initial review of entrance criteria.

3) As English is the language of instruction at the College, applicants must demonstrate proficiency in English at the level required by the program for which they are applying.

4) Applications for special selection programs received after the program deadline date will not be processed for the upcoming program intake.

**Admissions Process**

1) Applicants for most programs (those which do not involve special selection procedures) are admitted on a first-come, first-served basis. Acceptances are made in the order in which completed applications are received. An application is considered to be complete when all entrance requirements have been met and all supporting documentation submitted.

2) Admission of part-time students will be subject to availability of space and the approval of the Vice-President Academic or designate.

3) Admission preference will be given to applicants in the following order:
   a) Manitoba residents who are Canadian citizens or have Permanent Resident status;
   b) Residents outside of Manitoba who are Canadian citizens or have Permanent Resident status;
   c) Others.

4) Applicants may be required to provide proof of Canadian citizenship or Permanent Resident status at the time of application.

5) If space is not available, qualified applicants from outside of Manitoba will be informed, in writing, that their application cannot be considered.
6) Student visa applicants accepted for training must submit proof of medical and hospital coverage to the Registration Department at least three weeks prior to program start date. Failure to provide this may result in cancellation of their application.

7) Once all program dates and quotas are finalized, qualified fee-paying applicants will be notified, in writing, if they have been accepted for training.

8) All applicants accepted for training will be accepted as fee-paying students. It is the applicant's responsibility to provide the College with written confirmation of any sponsorship agreement prior to registering for the program.

9) Applicants offered training will be allowed to postpone their acceptance twice. A third refusal of training will result in the application being cancelled.

10) Applicants must, at the time of acceptance, pay a non-transferrable/non-refundable deposit fee.

11) Decisions regarding acceptance for hospital/agency selection programs will be at the discretion of their selection boards.

12) Should vacancies exist in programs after all fee-paying students are accommodated, qualified individuals 60 years of age or older, who are unemployed, will be accepted on a first-come, first-served basis and will be exempt from the payment of program tuition fees. All other program fees must be paid by the student. Proof of age will be required.

13) The College reserves the right to refuse admission to applicants who are deemed unsuitable for entry into the program.

Registration Process

1) Applicants will receive a statement of payment procedures and schedules with their acceptance letters and payment must be submitted by the due date indicated. Applicants who do not submit fees by the due date will forfeit their acceptance and their application will be cancelled.

2) In the event of a fee increase, students will be required to pay the new rate.

3) It is the applicants' responsibility to contact the College if they will be unable to submit payments within the specified time frame.

4) Applicants will receive validated tuition receipts for any tuition payments made to the College.

5) Applicants must report for registration as outlined in the acceptance letter.

6) Applicants unable to register at the designated time and date, must advise the Director of Registration prior to the registration date. Failure to do so will result in the acceptance being forfeited and the application cancelled.

7) All applicants accepted for training will be required to pay Students' Association fees. The fees, which are set by the Students' Association, will be collected by the College on behalf of the Students' Association.

8) Once an application is cancelled, the applicant's acceptance is no longer valid and the applicant will be ineligible to register.

9) Student identification cards will be issued to all registered students.

10) Failure to notify campus security of lost student identification cards may result in students being liable for any loss or damage to materials obtained with the card.
Special Selection Programs
Programs that do not admit applicants on a purely first-come, first-served basis are considered special selection programs.

1) These programs sometimes require additional documentation, testing, interviews or demonstrations of special aptitudes.

2) For these programs, the criteria applied are based on additional skills and abilities needed to succeed in the program.

3) For those applicants who meet these criteria, the first-come, first-served policy will continue to apply.

4) Information on the criteria used for these special selection programs is available from the Registration Department in the College.

5) Because some special selection programs may have an application deadline after which applications cannot be considered for the annual Fall intake of students, applications should be submitted at the earliest possible date. Contact the Registration Department by telephone at 204-632-2327 or 1-800-903-7707 (outside Winnipeg in Canada) in regard to the deadline date for a specific program.

General Process
1) The College reserves the right to make changes without prior notice to program content, instructional methods, fees, rules and regulations and to cancel programs when deemed necessary.

2) Applicants who have been accepted for a program intake which is subsequently cancelled or where the space in the intake is reduced by the College will be offered the following options:
   a) acceptance into the next program intake on a priority basis;
   or
   b) a space in an alternate program, provided space is available, and the applicant meets all program prerequisites.

Articulation Agreement
To improve access and enhance the transition to College programs, Red River Community College has developed articulation agreements with school divisions. For graduates of co-operative Vocational Education programs, advanced standing credits may be available in the following programs:

   Administrative Assistant
   Advertising Art
   Commercial Cooking
   Computer Numerical Control Machine Operator
   Dental Assisting Level 2
   Early Childhood Education
   Engineering Design and Construction Technology
   Industrial Electronics
   Machine Shop Practice — Advanced
   Motor Vehicle Mechanic — Diploma
Municipal Engineering Technology
Structural Engineering Technology
Survey Engineering Technology
Telecommunications

For further information on the individual articulation agreements contact:
Red River Community College
Registration Department
C306-2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9
Phone: 204-632-2327 or
1-800-903-7707 (outside Winnipeg in Canada)
International Education/Admission of International Students

Red River Community College recognizes the value of international education in promoting inter- national understanding, trade and economic relations as well as the positive benefits created by an environment where staff and students from different cultures interact. The Board of Governors recognizes the importance of participating in international development and exchange programs in other countries to advance the internationalization of the College and the province of Manitoba. To this end, Red River Community College will undertake the following:

a) international development and exchange programs where the College has appropriate expertise and experience,

b) registration of international students in the College where they pay the full cost of programs and do not displace Canadian students.

The College will attempt to meet the educational needs of individual international students in programs where space is available. Since many programs are in high demand and preference must first be given to local residents, it may not be possible to place all international students. The annual fees for individual students enrolling in College programs (based on 10-months duration) range from $6,600 to $13,500. These fees include tuition fees, Students’ Association fees, lab fees, endowment fees and other related program costs. They do not include textbooks and supplies.

The College is committed to establishing formal relations with recognized organizational sponsoring groups, educational agencies, community groups, private enterprise and international development agencies which act on behalf of students.

Language Programs for International Students

Language training is available to international students. These programs are designed to develop the practical English speaking, listening, reading and writing skills of learners, as well as the language and information required for future study and employment in a specific field. They also include a cultural adaptation component in order to provide students with an orientation to living in Winnipeg and Canada. These programs are offered at Red River Community College’s Language Training Centre located in the College’s downtown Winnipeg campus.

The Language for Specific Purpose language programs are offered at the intermediate and advanced levels. These programs are intended to meet the language needs of students preparing to study in a post-secondary academic program, communicate in English in daily life situations or seek employment where English is required. Programs are full-time (25 hours per week, 19 weeks in length) with intakes in September and February.

International students may apply for acceptance into language training programs by submitting an application form and tuition fees to the International Education Office (see applications and admissions below). All second-language students must write Language Training Centre placement tests upon their arrival in Winnipeg to determine placement in the appropriate program and level.
Academic Upgrading
It is recognized that many international students may not have all the prerequisite qualifications to enter their chosen field of post-secondary study. In addition to language training, Red River Community College provides high school equivalency training. After completion, students can apply for entry into full-time programs at Red River Community College or other North American colleges and universities.

Special Programs
Red River Community College designs and offers programs to meet the specific needs of groups and specially sponsored individuals. The programs are custom designed to meet the language, cultural and specific academic and technical needs of the specified group or individual. Students can apply individually or under a special contract for groups. Contact the International Education Office for more information.

Application and Admission of International Students
The admission of international students to College programs will be guided by the following processes:

1) All correspondence regarding general College program information and special contract training must be directed to:
   Red River Community College
   International Education Office
   D214-2055 Notre Dame Avenue
   Winnipeg, Manitoba, Canada R3H 0J9
   Telephone: 204-632-2143
   Fax: 204-632-5269

2) The International Education Office will provide information on program availability, tuition fees, program dates, application procedures and specific information on College programs and services.

3) Applicants will be accepted on an ongoing basis. Admission is however, dependent on the following entrance requirements and space availability.
   All applicants must:
   • be 16 years of age or older,
   • meet the prerequisite qualifications specified for each program,*
   • prove that they have sufficient language ability by completing one of the following:
     Language programs:
     – TOEFL: a minimum of 450, CANTEST: a minimum of 3.0 – Band 3, or STEP: Pre-Second Grade;
     Certificate/diploma programs:
     – TOEFL: a minimum of 550, CANTEST: a minimum of 4.0 – Band 4, or STEP: Pre-First Grade; or
     – graduation from a Canadian or International school overseas displaying sufficient language ability and training; or
     – Red River Community College Language Training Centre placement tests (for visa students already in Winnipeg).
On arrival all second-language students are given placement tests to determine placement into the appropriate class level.

* Entrance requirements represent the minimal prerequisite. Applicants are encouraged to give detailed information and additional documentation of prior learning experience.

4) All International Education application forms must be submitted to the International Education Office. All applications must be accompanied by:

* a non-refundable application fee of $100 Canadian,

and

* specific official transcripts or certificates (original or certified copies) indicating the applicant’s academic standing. Certified translations should be included when necessary.

Note: Documents submitted to the College are retained by the College.

5) Applicants will receive confirmation of their admission status either by fax or mail described in the following terms:

Incomplete: Further information or documentation is required before processing can begin.

Rejection: You have not met the admission requirement, or provided the information/documentation required, or you have not paid the requested fee, or you have requested the application be cancelled.

Wait: You qualify for admission and your name has been placed on a wait list.

Conditional acceptance: You will be accepted on completion of an identified course of study.

Acceptance: A space in a program is being held for you. Acceptance is non-transferable. At the time of acceptance applicants are requested to:

* send the international student fee (a minimal non-refundable deposit of $300 Canadian is required),
* send payment for health insurance,
* obtain a valid visa or student authorization from the nearest Canadian Embassy or High Commission. Full-time students must indicate that Red River Community College is the institute at which study is to take place.

The International Education student handbook will be made available at this time. On arrival an International Education orientation package for Red River Community College will be presented.

6) All applicants are required to enroll in the Manitoba International Student Health Insurance Plan. A payment schedule and further information will be sent on acceptance.

7) It is the responsibility of each applicant to obtain the required visa or student authorization, and to notify the International Education Office of any change in personal information, i.e., name, address, telephone and fax number, visa status, etc.

8) Unfortunately, no financial assistance is available at the College at the present time. Students are expected to be able to pay their full tuition costs and maintain a reasonable standard of living while studying at the College.

Please note that College policy, procedures and fees are subject to change and may not apply to all international students.
General Policies and Procedures

Responsibilities of Registered Students
All students agree, by the act of registration, to be bound by the regulations of Red River Community College and of the program in which they are registered.

It is assumed that students who register at Red River Community College have made themselves familiar with the specific requirements associated with the diplomas or certificates they are seeking. Students are responsible also for ensuring that they are enrolled in all courses required for completing program requirements and as preparation for program work experience components.

Acceptable standards of student conduct are based on common sense and common courtesy. Students who fail to conduct themselves in a socially-acceptable manner, who violate the rights of others, who damage College property, or in their manner and speech attempt to discriminate against others, may be asked to discontinue their studies.

Although the College does not have a formal dress code, students are expected to follow acceptable criteria for dress and grooming, consistent with the standards of the program in which they are enrolled. Where specific requirements such as safety equipment and clothing, uniforms and program-related health and personal hygiene standards exist, students must meet these additional requirements.

Sexual Harassment
"The College recognizes the individual worth and dignity of every member of the College community and is committed to fostering a work and study environment free from sexual harassment.

The College will not tolerate sexual harassment in any form, whether it occurs on College property or in relation to College activities.

The College recognizes its responsibility for the creation and maintenance of a safe and healthy working and learning environment. Protection of an individual's fundamental human rights, which include respect, dignity, fair treatment and freedom from prejudice or persecution, are integral to this process. Sexual harassment is a violation of an individual's basic rights.

Sexual harassment can damage an individual's health, undermine his/her performance and can also negatively affect the working/learning environment. The College considers sexual harassment in all its forms to be a serious matter."

From the Red River Community College Sexual Harassment Policy

Sexual harassment can include behavior such as:
- Verbal abuse or threats,
- Unwelcome remarks, jokes, innuendos or taunting about a person's body or attire,
- Displaying of pornographic or other offensive or derogatory pictures,
- Practical jokes which cause awkwardness or embarrassment,
- Unwelcome invitations or requests, whether indirect or explicit, or intimidation,
- Condescension which undermines self-respect,
- Unnecessary physical contact such as touching, patting, pinching, punching,
- Leering or other gestures,
- Physical assault.

For recorded information on sexual harassment call 204-632-2416. All inquiries shall be treated in strict confidence.
Living Accommodation
There are no residential facilities at the College. The Red River Community College Students' Association operates a housing registry from July to mid-September and should be contacted for specific information at 204-632-2375.

Smoking Policy
Red River Community College is a smoke-free environment. Smoking is not allowed anywhere within College buildings or leased facilities. Smoking will be permitted outdoors, and in the South Gym for social and special events. This new policy, approved by the College Board of Governors, recognizes the dangers to everyone as a result of second-hand smoke and the requirement to have an environmentally safe working and learning atmosphere at the College.

Withholding of Academic Results and Diplomas
Transcripts, diplomas and certificates will be withheld from students who are in possession of College property, such as textbooks, equipment or supplies, or who have outstanding accounts with the College.

Academic Appeals and Disciplinary Appeals Policies
Information on the Academic Appeals and Disciplinary Appeals policies can be obtained from the Dean of Student Affairs, Room C715, telephone: 204-632-2331, or the Students' Association Office, DM20, telephone: 204-632-2375.

Please note: all policies and procedures are subject to change and are reviewed on a regular basis.
Continuing Education and Regional Centres

Continuing Education offers a wide range of advanced diploma, diploma, certificate, refresher courses and programs in the areas of: Business and Administrative Studies, Computer Sciences, Applied Arts, Industrial and Engineering Technology, Social Sciences and Health and Related Areas. As well, a variety of special interest courses, workshops and seminars are offered.

Students who do not meet the academic entrance requirements of full-time programs have the opportunity to upgrade their knowledge and skills through Continuing Education.

Continuing Education programs are available throughout the year in the Fall, Winter, Spring and Summer terms. Courses and programs are generally offered on a weekday evening or on Saturday. Most programs can be completed in approximately two years. Enrollment is open to any adult, subject to prerequisites or specific course requirements where applicable.

For information, contact one of the following Continuing Education offices:

**In Winnipeg and area:**
Continuing Education Department
Red River Community College
C116-2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9
Phone: 204-694-1789 Fax: 204-633-6489

**In the Interlake:**
Interlake Regional Centre
Box 220
St. Peters Street
Arborg, Manitoba R0C 0A0
Phone: 204-376-5802 Fax: 204-376-5160

**In the Pembina Valley:**
Pembina Valley Regional Centre
Room 100, The Main Plaza
561 Main Street
Winkler, Manitoba R6W 1E8
Phone: 204-325-9672 Fax: 204-325-4947

**In Portage la Prairie and area:**
Portage Regional Centre
306 Saskatchewan Avenue East
Portage la Prairie, Manitoba R1N 0K8
Phone: 204-239-3490 Fax: 204-239-3495

**In Selkirk and Eastman:**
Selkirk Regional Centre
221 Mercy Street
Selkirk, Manitoba R1A 2C8
Phone: 204-785-5010 Fax: 204-785-2571
In Steinbach and area:
Steinbach Regional Centre
Box 2380
190 McKenzie Avenue
Steinbach, Manitoba R0A 2A0
Phone: 204-326-6426 Fax: 204-326-1113

Distance Education

The College offers a variety of programs and courses through distance education. Utilizing a combination of correspondence, teleconference and telephone tutorial, courses are available in Activities, Business Administration, Refresher Nursing, Social Science, Management Development, Child Care and Infant Care, Library Training and Home Care Attendant.

For further information or to receive a copy of the Guide to Distance Education, contact:
Red River Community College
Distance Education
E303-2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9
Phone: 204-632-2451 (Winnipeg) or 1-800-616-1113 (outside Winnipeg in Canada)
Fax: 204-633-7748

Market Driven Training Centre

The Market Driven Training Centre (MDTC) develops and delivers quality training that meets the needs of the Manitoba workforce, including skills enhancement and retraining of existing and displaced workers as well as the preparation and training of new and returning labor force participants. The MDTC is client-centred and, accordingly, the needs of employers, students and funders determine what training will be delivered and where and when it will be delivered.

For further information on programs and services, contact:
Red River Community College
Market Driven Training Centre
Main Floor - 294 William Avenue
Winnipeg, Manitoba R3B 0R1
Phone: 204-945-0588 Fax: 204-945-1646
Financial Policies and Procedures

Payment of Tuition and Students' Association Fees

Full-time Program Rate

Tuition Fees: All full-time programs are assessed at the annual rate of $909 (prorated over nine months). Longer or shorter program fees will be prorated. Fees are due on or before program registration date for the enrollment period. Students are advised to pay on time.

Students' Association Fees: Students' Association fees are $170 per student annually. This includes $7.44 per month for Students' Association fees, $2 per month for the Students' Association Building Fund and $85 annual fee for the Student Health Care program. The fees are payable with the tuition fees on or before program registration dates for the enrollment period. (The Students' Association fee applies only to students on campus.)

Three-Term Programs: Tuition fee is $303 per term. Students' Association fee is $114 for the first term and $28 each for the second and third terms. Total annual tuition and Students' Association fees are $1079.

One-Term Programs: Tuition fee is $909 plus $170 Students' Association fee. Total annual tuition and Students' Association fees are $1079.

Co-operative Education Work Term Administration Fee: $101 per month.

Co-operative Education Tuition Fees: Co-op programs are assessed using the following calculation:
- number of months of program on campus x regular tuition fee, plus
- number of required months of program on work experience x co-operative administration fee.

All 1995–96 rates listed are calculated for a nine-month academic year.

Other: Tuition fees for programs of other than nine-months duration will be prorated based on the number of months plus $9.44 per month Students' Association fee and $85 annual Students' Association fee for the Student Health Care program and will be assessed for the full term.

Part-time Program Rate

Tuition Fees: The fees will be the lesser of $3.85 per instructional hour or $101 per month of attendance.

Students' Association Fees: $9.44 per month or portion thereof plus $85 annual fee for the Student Health Care program. (For on-campus students taking less than six hours per week and enrolled for a four-week period or more, the Students' Association fee is $3 per course.)

Please note that all fees are subject to change without notice.

* Lab fees of $30 or $60 per year will be added to tuition fees where applicable.

† The Students' Association fee amount also will include $51 annual endowment fee where applicable. This fee is non-refundable.

Timing and Collection of Tuition Fees

The financial policy of Red River Community College indicates the following:

1) Tuition fees are payable on or before registration date but not prior to the pre-registration period.
2) Deposit fees must be paid in accordance with the date indicated on the letter of acceptance.
3) Fees may be paid by cash, cheque, money order or debit card.
4) Where a third party is billed for tuition and Students' Association fees, a letter of commitment must be provided to the Registration Department on or before the registration date. Fees are payable within 30 days from the date the third party is billed. Third-party billing should be restricted to reputable businesses and agencies.

5) Where a student registers for a term after the scheduled date for registration, tuition and Students' Association fees will be assessed as if the student had registered on the scheduled registration date. Fees for such students are due on the day the student registers.

6) Students whose tuition and Students' Association fees remain unpaid after the due date will be given 14 calendar days grace. Students whose fees are outstanding at the end of the period of grace will be issued a formal notice and are subject to a late fee of $25 in addition to all other amounts owing to the College. An additional 14 calendar days will be allowed for the student to make payment from the date the formal notice was mailed. Failure to do so will result in automatic termination, unless a further extension is granted by the College President or designate.

7) Formal notice shall be provided by letter mailed to the student address as recorded by the Registration Department. Failure to receive formal notice shall not constitute grounds for inadequate notification.

8) Students who are terminated for failure to pay tuition and Students' Association fees (see number five above), and are subsequently reinstated, will be charged a reinstatement fee of $50 as well as the $25 late fee. These fees are payable in addition to the fees previously assessed. Reinstatement is not automatic.

9) Canada Student Loan recipients will have their tuition and Students' Association fees automatically deducted from their Canada Student Loans. The lending institution will forward a cheque directly to the College. A receipt will be issued to the student by the College, once payment has been processed.

10) Canada Student Loan applicants are responsible for ensuring their tuition and Students' Association fees are paid. Students whose fees are outstanding 28 days after their registration date will be issued a formal notice. These students must contact the Controller's Office at 204-632-2299 to make special payment arrangements. Failure to do so will result in automatic termination.

Sponsored Students: Where tuition and Students' Association fees are to be billed to a third party, a letter of commitment is to be provided to the Registration Department before the registration date for the program. Fees payable by a sponsor are due within 30 days from the date the sponsor is billed. Where fees are billed to a third party, any refund shall be returned directly to the third party.

NSF Cheques: A penalty fee of $25 will be assessed when any NSF cheque has been received in payment.

Application Fee: A non-refundable application fee is required of applicants who wish to enroll in full-time or part-time credit programs. A fee of $20 (cheque or money order made payable to Red River Community College) must accompany each application submitted.

Deposit Fee: Upon acceptance, applicants will be required to pay a non-refundable, non-transferable deposit fee of $100. Non-payment will result in the application being cancelled. The deposit will be credited toward the applicant's tuition payment upon registration.
Mark Transcript Fee: Official replacement mark transcripts will be issued at the request of the student and upon receipt of $5 for the first set and $2 for each additional set ordered at the same time (plus GST).

Certificate/Diploma Fee: Official replacement certificate/diplomas will be issued at the request of the student and upon receipt of a fee of $15 (plus GST).

Facsimile Fee: Transcripts will be faxed by the College to outside parties at the request of the student and upon receipt of a fee of $2 per page (plus GST).

Course Description Fee: Course descriptions will be provided at the request of the student and upon receipt of a fee of $5 per program (plus GST).

Refund Policy

Tuition Fees

Applicants: Applicants withdrawing before program commencement will be eligible for a refund of tuition, less the non-refundable deposit fee.

Students: Students terminating after program commencement will be eligible for a refund of tuition and Students' Association fees paid, less the expended portion and the $100 non-refundable deposit fee. (Example: A student who registers in September and also terminates in September will lose $100 + $101 + $103.88 = $304.88.) Thus, the following refund payment schedule:

Accepted applicants who do not register: amount paid less deposit fee of $100.

Registered students leaving in first month: amount paid less $304.88.

Registered students leaving in second month: amount paid less $415.32.

Students' Association Fees:

Students assessed Students' Association fees at the rate of $9.44 per month plus annual Student Health Care program fee, and who terminated after program commencement, are eligible for a refund of fees paid less $103.88, if terminating during the first month, and $9.44 for each subsequent month or portion thereof. Students should refer to their Student Health Care program brochure or consult directly with the Students' Association regarding refunds of the Student Health Care program fee.

Applying for Refund/Withdrawal Procedures

Refund requests are to be made through the Controller's Office, C212, Red River Community College.

Students wishing to withdraw from the College must inform their Chair who will complete a Student/Instructor Advisement form authorizing their eligibility for a refund of tuition and Students' Association fees.

A copy of the completed Student/Instructor Advisement form and tuition receipts should be submitted immediately to the Controller's Office, C212.

Please note that a student who withdraws unofficially, without completing the above procedures, will not be eligible for any refund of fees. Applications for refunds must be presented to the Controller's Office within two months of termination date.
Refunds will be calculated on the following basis:

1) **Program cancellation**: In the event that a program is cancelled, a student is eligible for a full refund of tuition fees. The deposit fee will not be withheld.

2) **Teacher Education special programs**: Refunds will be given in full only to those students who notify the Teacher Education section one week or more prior to the start of the program.

3) **Correspondence programs**: Refunds will be granted to students if notice is provided in writing to their tutor within six weeks from the date program material was issued. Where notice is provided within the six-week period, the refundable amount shall be the tuition paid less the following:
   a) the administration fee,
   b) the cost of textbooks and materials, and
   c) the cost of marking assignments that have been received by the tutor.

4) **Continuing Education programs**: Students withdrawing prior to the commencement of the second class will be eligible for a refund of tuition, less the non-refundable administration fee of $25. Subsequent to this, refunds shall not be granted. (Note: A $10 fee will be charged for a transfer from one course to another.)

5) **Special or high-cost programs**: Refunds will be considered on the same basis as outlined in number four above.

6) **For programs to which the annual certificate and diploma rate has been applied**:
   a) applicants withdrawing before program commencement will be eligible for a refund of tuition, less the non-refundable deposit fee;
   b) students terminating after program commencement will be eligible for a refund of tuition paid, less the non-refundable deposit fee, and the expended portion.

7) **Part-time students**: Refunds of tuition fees will be considered on the same basis as outlined in number six above with the replacement of deposit fee by administration fee.

8) **Conditionally accepted applicants**: Deposit fees will be refunded to an applicant who has been conditionally accepted and pre-registered, but did not fulfill the specified conditions to the satisfaction of the Director of Registration.

9) **Students sponsored by agencies or employers or who are the responsibility of other governments**: There shall be no refunds issued unless specifically provided for in an agreement or approved in writing by the College President.

10) **Transfers**: If a student elects to transfer to another program offered by the College or to another Manitoba community college (provided space is available), the unused portion of the tuition fees already paid may be credited toward the fees prescribed for that program.

11) **Canada Student Loans**: Educational institutions are required by law to forward any refund of fees which have been paid with the proceeds of a Canada Student Loan to the recipient's bank for application to his or her Canada Student Loan debt.
Other Debts
Refunds of tuition fees may be reduced by other outstanding debts, such as bookstore charges, parking fees, library fines, etc.

Conversion to Federal Human Resource Development (HRD) Sponsorship
A Provincial Entry student who is converted to a HRD sponsorship status will be eligible for a refund of tuition and Students' Association fees paid, less any expended months of training. The student is responsible to apply for a refund.
Student Services

Registration Services
The Registration Department is the administrative centre for the admission and registration processes, including all records, and provides the following services:

1) provision of program-related information at the College, by telephone and by mail;
2) distribution, receipt and processing of applications;
3) review of applications, including screening for program entrance requirements, appropriate referrals and subsequent advisement to applicants;
4) maintenance of student records related to academic admissions, achievement, termination and graduation;
5) issuance of mark transcripts, certificates and diplomas;
6) provision of Tuition and Education Tax Credit Certificates for income tax purposes;
7) confirmation of student enrollment for purposes of employment, student financial assistance and related sponsorship;
8) creation and maintenance of computerized program and course information.

The Registration Department is located on the third floor of Building C, phone 204-632-2327 or 1-800-903-7707 (outside Winnipeg in Canada).

Counselling Services
For Students Enrolled at the College
The Counselling Services Office at the College offers a number of services that can help students gain the maximum benefit from their college experience. These services are free and are provided to the main campus and the regional centres. They include:

a) Personal counselling gives students an opportunity to discuss, with a professional counsellor, a broad range of personal concerns. These concerns may include such things as ways of dealing with an urgent crisis, support in time of stress, assistance in dealing with relationship problems, a need to talk about academic difficulties or a feeling that help is required in dealing with bureaucratic entanglement.

b) Vocational educational counselling assists students in identifying interests and abilities pertinent to training and a career. Additionally, the Counselling Services Office maintains an extensive file of occupational and educational information, including calendars from most Canadian colleges and universities. Interest and aptitude tests are available as need is determined and at the discretion of the counsellor. Individuals or groups of students can also receive assistance in job-seeking skills, e.g., applications, resume writing and interview skills.

c) Financial counselling helps students plan a general budget for the academic year or assists them in applying for Student Financial Assistance, Student Social Allowances, etc.

d) Referral: When a student has a problem or a concern that falls within the jurisdiction of a College office or a community agency, the counsellors will try to help the student see the right person at the right place, as expeditiously as possible. Other assistance will be provided as needed.
For Prospective Students

Educational guidance and career-counselling services are provided to members of the community who are interested in enrolling in programs at Red River Community College. Persons are assisted in determining interests, abilities, and goals, and in formulating plans for skill development and a career. Related concerns, such as financial assistance, academic upgrading, day care, etc., also can be dealt with.

All contacts with Counselling Services are voluntary and confidential. While appointments are preferred, drop-ins can sometimes be seen immediately, or after a short wait. Appointments can be made by contacting the secretary in C115, or by telephoning 204-632-2335. Appointments are usually made between the hours of 8 a.m. and 4 p.m., Monday through Friday. The office is open and staffed at noon. From October to May, Counselling Services is open between 9 a.m. and noon, the first and third Saturdays of the month.

Tutorial Centre

The Tutorial Centre consists of three components:

a) Tutorial Centre
   Building C
   Room CM25
   Phone: 204-632-2547

b) Reading Lab
   Building D
   Rooms D213 and D215
   Phone: 204-632-2280

c) Computer Centre
   Library
   Phone: 204-632-2332

College instructors and peer tutors provide academic assistance to any college student who requests assistance from the Tutorial Centre. Peer tutors are hired to assist students mainly in subjects outside the expertise of the full-time instructional staff. As well as specific course content, tutoring sessions may focus on or include instruction in the development and application of student skills, such as study skills techniques and applications, critical thinking, and stress and time management.

The Reading Lab offers group and individual assistance in reading, writing and study skills, critical thinking skills and accelerated learning techniques; including noon hour and late afternoon workshops. Department staff strive to work closely with students and their course instructors and counselors in assessing and overcoming barriers to optimum learning and student success.

The computer network in the library is staffed by an instructor who assists students in the use of the computers. These computers are mainly for the use of students who do not have access to computers in their programs of study. More computers connected to this network are available as part of the Reading Lab in D215.

Students can make appointments in person or by telephone. Drop-ins are accommodated whenever possible. Students are invited to visit the Tutorial Centre or Reading Lab for further information on the services available.

Bookstore

Required textbooks and equipment for most programs are available for purchase from the College Bookstore. After July 1, 1995, students are encouraged to buy books in advance to avoid line-ups on registration day. Student parking decals can be purchased at the Bookstore and program booklists also are available.

The Bookstore is located on the Mall Level of Building D, across from the Buffalo Place cafeteria. Regular store hours are 7:40 a.m. to 4:15 p.m., Monday through Thursday and 7:40 a.m. to 3:15 on Friday.
Library Services

The Library is located on the Mall Level across from the Tower Lounge between buildings D and F.

The Collection and Facilities: The Library offers a wide range of resources and services to support program assignments and to encourage the general pursuit of knowledge, beyond specific class requirements. In addition to books and magazines, there are also newspapers, company annual reports, clippings, government publications, films, videotapes, slides, filmstrips and audio cassettes. Audiovisual equipment is available for individual viewing and listening within the Library and also may be borrowed for classroom presentations. There are tables and individual carrels for studying, and coin/card-operated photocopiers.

Hours: Hours of service are posted in the Library. Call 204-632-2322 or 204-632-2233 for information on Library hours.

Getting Help: Instruction on how to use the Library is given to classes when arranged by instructors and to individual students on request. A brochure outlining services and policies of the Library, and printed program-related guides designed to assist students in researching topics and in using library tools more effectively, may be picked up at the Library.

Qualified staff are available at all times to assist you in locating information and materials in the Library, operating audiovisual equipment and generally finding your way around the world of information. Don't hesitate to ask.

Information and Reference: 204-632-2470  Internet E-mail: rrlnorm@cc.umanitoba.ca
Audiovisual: 204-632-2231

Borrowing: To borrow books, magazines, and audiovisual items, students must present a valid College ID card. Materials are loaned for varying lengths of time depending on the demand. Students are responsible for returning borrowed materials by the due date. Late returns are subject to fines.

Students are responsible for the condition of the library materials that they borrow or use. If materials are lost or damaged, the borrower will be required to pay the replacement costs. Certificates or diplomas will be withheld and future registration in other programs prevented until library material is returned or replacement costs have been paid.

Microcomputers: A microcomputer network with 16 80386 IBM-compatible computers and two Macintosh computers with a variety of software is located in the Library. An instructor provides basic instruction and assistance with software in this area on weekdays between 9 a.m. and 3:30 p.m. For more information call 204-632-2332 or Internet E-mail rrlgary@cc.umanitoba.ca.

InterLibrary Loan: Should the Library's collection not contain the book or article you require, the Library staff will have it brought to the Library at the College for your use. Red River Community College students are eligible for library cards from the University of Winnipeg and the University of Manitoba.

Health Services

The Health Centre is located on the Mall Level, HM08. The hours are 8 a.m. to 4:15 p.m., Monday through Friday. It is staffed by occupational health nurses.

Health services are available to all students and staff on campus. No appointment is required. All visits and consultations are confidential and do not become part of the permanent student or employee file.
Injuries or illnesses that occur on campus can be treated in the Health Centre. If further medical assistance is required, referrals will be arranged. Short-term care is available if required. Appointments will be arranged with counsellors, dentists, physicians, eye specialists, etc., if necessary.

The Health Centre offers personal health counselling and teaching. Health information is available upon request. Immunizations are administered to students in health-related programs. An active wellness program is in place during the year and all students and staff are encouraged to participate. A hearing conservation program is ongoing during the year for areas at risk from high noise levels.

Students who are subject to a chronic condition such as diabetes, epilepsy, migraine headaches or asthma are asked to report to the Health Centre and submit any relevant information pertaining to their health. All this information is confidential, but it is to the student’s advantage in the case of an emergency.

All injuries that occur on campus must be reported to the Health Centre. Workers Compensation claims are initiated in the Health Centre for those who have that coverage.

**Physical Education and Recreation Programs**

The Physical Education Department attempts to meet the needs and the interests of all the students and staff in the College by offering a broad range of intramural and recreational programs, as well as compulsory physical education classes for students in Nursing, Early Childhood Education, Dental Assisting and Developmental Services.

Available at no extra charge to students and staff are a banked, oval jogging track; a fully equipped weight room complete with exercise cycles, rowers and stepping machines; lockers and a towel service. Fitness appraisals are offered by appointment only and aerobic classes are held twice weekly at noon. There is a minimal fee charged for the aerobic classes.

**College Job Centre**

The College Job Centre is located in C211. The College Job Centre assists graduate and undergraduate students by providing:

- occupational and employment counselling;
- current labor market information and forecasts by occupation and area;
- job information and registration for permanent, summer and part-time work;
- an "on-campus" recruitment program that invites employers to interview graduating students;
  (Some employers interview undergraduates for summer employment.)
- an employment library with self-help manuals and company literature;
- assistance in resume writing, employment applications and employment interview preparation.

For additional information, contact the Job Centre at 204-632-2345.
Educational Support Centre
Integration of students with disabilities into various programs offered at Red River Community College is the focus of the services provided by the Educational Support Centre. These services are available to students in Continuing Education programs as well as day programs.

Career counselling provides prospective students with the opportunity to explore specific programs related to their aptitudes and interests and also to evaluate how their particular disability will impact on their vocational choices and education plans.

Liaison is maintained with community services for individuals with disabilities as well as College instructional staff. Training programs may be altered to meet individual needs. Special arrangements for examinations can be made for students who may require time extensions or oral exams because of their disability. Assistance is also provided to ensure that print-handicapped students are able to obtain instructional texts on tape.

The Educational Support Centre works with students who have varied needs. These include, but are not limited to, physical disability, visual and hearing impairment, as well as learning disability. The scope of services required by Deaf students are provided by the Educational Support Centre. Students enrolled in regular programs receive a variety of support services, as required, including sign language and oral interpreting, note taking, tutoring, academic and personal counselling. Career counselling and academic assessments are available to persons concerned with their vocational future, and who may be considering training in a trade or technology.

The Educational Support Centre delivers the Visual Language Interpreter Training program and coordinates sign language classes delivered through the College's Continuing Education Department. The Centre is located in D104, on the Plaza Level of Building D. The telephone numbers are: 204-632-2381 or TDY 204-633-6329.

Student Awards Services
The Student Awards Office on campus provides a number of support services for Red River Community College students:
1) assistance to students applying for student financial assistance;
2) assistance to students applying for college scholarships and awards;
3) assistance to students requiring short-term emergency loans;
4) liaison with Student Financial Assistance Branch and college administration;
5) information on financial assistance programs available to Manitoba students; and
6) verification and release of student awards.

For further information on these services, please contact the Student Awards Office, C306, telephone 204-632-2437.

Other Student Services
Please note the following telephone numbers which may be useful to some students:
Day Care Centre: 204-632-2244
Reading Lab: 204-632-2280.
Awards, Bursaries and Scholarships

Throughout the academic year, Red River Community College assists students by administering the awards, bursaries and scholarships that have been donated by concerned corporations, community organizations and individuals. These awards cover the specific requests of the donors and are intended to assist students who have shown outstanding abilities in academic or vocational areas and/or are in need of financial assistance. For further information, contact the appropriate academic department or the Student Awards Office, Room C306.

General

Lieutenant-Governor’s Medals For Proficiency
The Lieutenant-Governor’s Medals will be awarded to students in the community colleges of Manitoba who, in the opinion of the selection committee, combine, to the greatest extent, in their graduating year: a) academic and technical achievement, b) involvement in college and/or community affairs, c) good character and personality. The awards will be made to one student from each of the following groups at the College: a) diploma program student from the science-based curricula, b) certificate program student from the science-based curricula, c) diploma program student from the arts-based curricula, d) certificate program student from the arts-based curricula.

A.J.S. (John) Taunton Award
Funds are available for native students (status Indian or Metis) experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.

CN Scholarship for Women
One scholarship of $500 is available to a female student on the basis of her demonstrated interest in a non-traditional career. Eligible programs are: Carpentry, Collision Repair and Refinishing, Computer Numerical Control Machine Operator, Diesel Mechanics, Drafting, Electrical, Industrial Electronics, Machine Shop Practice, Motor Vehicle Mechanic, Piping Trades, Power Engineering, Power Equipment Technician, Refrigeration and Air Conditioning, Telecommunications, Welding and any of the following Engineering Technology programs: Civil, Electronic or Mechanical. Application forms are available from the Student Awards Office. Application deadline is July 31.

Canadian Forces Personnel Assistance Fund (CFPAF)
Loans are available to former or serving members of the Canadian Forces with at least five years service to enable dependents to pursue a post-secondary education. Applications forms are available from CFPAF, 245 Cooper St., Ottawa, Ontario, K2P 0G2. Deadline for applications is June 30.

Evelyn Bagot Memorial Scholarship
In memory of the late Mrs. Evelyn Bagot, former manager of the College Bookstore, an award of $100 is presented annually to a regular full-time student on the basis of performance (theoretical and practical). Secondary consideration will be financial need. Applications are available from the Student Awards Office. Deadline for applications is March 1.

G. Allan Roeher Institute Bursaries
Bursaries are being offered to college students interested in the field of the mentally challenged who are planning to involve themselves as volunteers or professionals and who are in need of financial assistance. Students must apply directly to the Provincial Association of the Canadian Association for Community Living or through their local association. Application deadline is July 1.
Hannah (Nancy) Boon Fund
Funds are available for native students (status Indian or Metis), experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.

Harmony International
An award of $250 is presented annually to a physically-disabled student enrolled at the College. Inquiries should be directed to the Educational Support Centre.

Icelandic Festival of Manitoba Scholarship
The Wilhelm Kristjansson Memorial Scholarship of $500 is offered by the Festival to a student who has completed one year of post-secondary studies (university or community college) in Manitoba and who will be continuing his or her studies in the upcoming year. The following criteria will be considered: Icelandic or part-Icelandic descent; academic results of the current school year; qualities of leadership and community service; and need for financial assistance. Please send a letter of application and transcript along with two letters of reference from instructors or community leaders to Dennis N. Stefanson, 609-600 Setter Street, Winnipeg, Manitoba R2Y 2H7. Deadline for applications is July 1.

Ida Mary Trotter Bursary
Funds are available for native students (status Indian or Metis), experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.

Imperial Oil Limited Higher Education Awards
This program provides full tuition and compulsory fees for sons and daughters of Imperial Oil Ltd. employees, annuitants, or deceased employees. Further information and application forms are available from: Administrative Management Services, Awards Division, P.O. Box 414, Pickering, Ontario, L1V 2R6, Phone (416)420-0642, Fax (416)420-2516.

MGEU Bursaries
Bursaries of $500 are available to members of the MGEU (minimum one-year membership) and their dependents. For more information, contact the Manitoba Government Employees' Union.

Manitoba Blue Cross Scholarship/Bursary Program
The following awards are available to Manitoba students who will be enrolling as full-time students at Red River Community College: a bursary of $500 to aid a handicapped student; an entrance award of $500 to aid a Grade 12 student; a bursary of $500 to aid a Grade 12 student who has to travel more than 100 km (one way) to attend college or university. Selection will be based on high academic standing and financial need. Application forms are available from the Student Awards Office. The deadline for applications is July 31.

Manitoba Hydro Employment Equity Bursaries
Bursaries of $600 each and a first option for a summer job with Manitoba Hydro following successful completion of the first year of studies are available for women, persons of native ancestry, the physically disabled and members of visible minority groups seeking enrollment in first-year studies in the Civil, Computer, Electrical or Electronic Engineering Technology programs at Red River Community College. Application forms are available from the Student Awards Office. The deadline for applications is July 31.
Manitoba Schools Science Symposium Entrance Scholarships
Tuition fees for one year will be paid for two students entering any program of studies full time at the College. Selection is based on Grade 12 standings and performance at MSSS.

Manitoba Team Handball Federation Inc.
Manitoba Team Handball Federation is offering a $300 scholarship to a student attending Red River Community College in a full-time program. The recipient must be involved in the sport of team handball at any level and maintain a minimum average of 65%. As well, citizenship, personal athletic achievement and other school activities will be part of the criteria. For further information contact the Student Awards Office or Manitoba Team Handball at 985-4161. Deadline for applications is May 1.

Manitoba Telephone System Awards Program
A number of awards of $500 each for post-secondary students have been created specifically for members of visible minorities, aboriginal people, people with disabilities and women. Preference will be given to residents of Manitoba who are Canadian citizens and are members of one or more specific groups as outlined above. Awards will be based on high academic achievement. Further details and application forms are available from the Student Awards Office. Deadline for applications is July 31.

Myrta and Bruce Moorhead Memorial Award
Funds are available for students experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.

Official Languages Monitor Program
Funding is available for full-time post-secondary students to enroll full-time in a post-secondary institution in another province and help students at the level assigned with the spoken language by conveying to them the real-life aspect of the language and an awareness of the culture associated with that language. The deadline for applications is mid-February. Inquiries should be directed to Christian LaRoche, 945-6916.

Press Radio Fund
Funds are available for students experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.

Prince of Wales/Princess Anne Bursary
Awards are available for native students (status, non-status and Metis) attending post-secondary institutions in Manitoba. Applications are available from the Student Awards Office, or Manitoba Student Financial Assistance, 945-6321.

The Soroptomist Training Award
A $500 award is offered to a mature woman who requires financial assistance to upgrade her education, technical or academic training in order to enter or reenter the labor market. The winner of this award is eligible for the training awards offered by the Western Canada Region. Inquiries should be directed to Kay Stewart, 837-1290.

Students’ Association Fund
Each year, the Red River Community College Students’ Association makes available emergency funds to assist students experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.
Summer Language Bursary Program
Bursaries will be granted to students across Canada to enable them to enroll in six-week immersion courses in French or English at accredited institutions, to provide them with the opportunity to learn one of Canada’s official languages as a second language. Bursaries cover the costs of tuition, instructional materials, and room and board. Deadline for applications is mid-February. Inquiries should be directed to Christian LaRoche, 945-6916.

Sybil McKay Inkster Fund
Funds are available for female Metis students experiencing temporary financial difficulties. Inquiries should be directed to the Student Awards Office.

Tom O’Brien Memorial Entrance Scholarship
Students who are proceeding from a high school Grade 12 to a full-time certificate/diploma program at Red River Community College, and who are Manitoba residents, are eligible to apply for a scholarship equal to the cost of tuition and student fees for one year. Two scholarships will be awarded annually: one to a female applicant and one to a male applicant. Criteria include demonstrated academic merit, school or community involvement and financial need. Scholarship applications, transcripts, and letters of reference indicating school or community involvement must be received by July 31. Inquiries should be directed to the Student Awards Office.

Training for Tomorrow Scholarships
Scholarships valued at $1000 are available for women pursuing an education in math, science and technology. The list of eligible programs at Red River Community College is under review but currently includes the following programs: Advertising Art, Chemical and Biosciences Technology, Computer Analyst/Programmer, Library and Information Technology, Medical Laboratory Technology, Medical Radiological Diagnostic Technology, Radiation Therapy and the following Engineering Technology programs: Civil, Communication, Computer, Electrical, Electronic, Engineering Design and Construction, Instrumentation, Mechanical, Municipal, Structural and Survey. Scholarships are awarded based on applicant’s academic achievement and essay presentation. Application forms are available from the Student Awards Office. Application deadline is July 31.

Winnipeg Community Centre of the Deaf Award
An award of $100 is presented annually to a hearing-impaired student for outstanding achievement in a college program. Inquiries should be directed to the Educational Support Centre.

Winnipeg Police Association
Scholarship(s) are awarded annually to a member of the City of Winnipeg Police Service, to members of their immediate families, and/or to direct descendants of members of the service. Applicants must have completed the first year of a two-year program and must provide official mark transcripts to indicate their academic performance. Applications should be forwarded to the Winnipeg Police Association, 188 Princess Street, Winnipeg, Manitoba R3B 1L2, by June 30 of each year.

Winnipeg Women’s ORT (Organization of Rehabilitation through Training)
A $75 book award for the College Library to benefit all Red River Community College students is awarded.
Business and Applied Arts

Advertising Association of Winnipeg Award
Awards are presented to second-year Creative Communications students working on assigned projects and displaying outstanding talent and ability in the advertising field.

Alexander Campbell Award
Administered by the Manitoba Hotel Association, awards of up to $4,000 are offered to Manitoba residents who have demonstrated academic proficiency as well as genuine interest and/or acceptable experience in occupations related to the hospitality industry. Applicants must be entering a degree, certificate, or diploma program in Hotel Management of not less than four years duration at a university or college in North America. For further information and applications, please contact the Manitoba Hotel Association, 1505-155 Carlton Street, Winnipeg, Manitoba R3C 3H8, telephone 942-0671.

Broadcasters Association of Manitoba Awards
Two awards will be presented to graduating Creative Communications students: one award for outstanding achievement in radio production and the other for outstanding achievement in television production.

Canada Safeway Limited Bursary
One $100 award is made annually to an outstanding student in Commercial Baking.

Canadian Food Service Executives Association (CFSEA) Awards
These awards are open to CFSEA Junior Branch members only. One CFSEA bursary award of $500 and one Nestle’s Food Services Gold Plate Award of $400 plus airfare and accommodation to the National CFSEA Convention are presented annually to students in the Hotel and Restaurant Administration program. Contact the Hospitality Department for further information.

Canadian Hospitality Foundation
One annual award of $300 is offered to a second-year Hotel and Restaurant Administration student meeting the general achievement criteria, who plans to enter some branch of the hospitality industry. Selection is made by HRA faculty. The Foundation also offers two national scholarships annually to students completing the first year of a hospitality program. Contact the Hospitality Department for further information.

Canadian Information Processing Society
Three $400 awards are offered to outstanding students who have completed the first year of the Computer Analyst/Programmer program.

Canadian Public Relations Society – Manitoba Public Relations Scholarship
This scholarship is presented annually by the Canadian Public Relations Society – Manitoba, to a Manitoba student studying public relations at the post-secondary level either on a full-time basis or as part of a recognized communications program. The selection will be based on academic achievement, creative and technical ability, involvement in student and community activities, and potential for success in the public relations profession. An award of $200 will be made by the society to assist the winner to continue studies in public relations.
Certified General Accountants Association of Manitoba Awards
Cash and tuition credit (for CGA) awards totalling approximately $3,400 will be awarded as follows: four awards to students in Term 6 of Business Administration; three awards to students in Term 3 of Business Accountancy; one award to a student in Term 6 of Computer Analyst/Programmer; and one award to a student in Term 4 of Business Accountancy Integrated.

Champs Food Systems Award
The $250 Phil Hiebert Memorial Award is awarded to a second-year student in Hotel and Restaurant Administration program.

Data Processing Management Association of Canada Award
Three $150 awards to a Term 4 Computer Analyst/Programmer student, for outstanding work in Term 1 through Term 3.

Deanna Marie Thomas Memorial Award
Established by her family in memory of Deanna Marie Thomas, daughter of two former Red River Community College students. Two awards of $300 each will be presented annually to students with dependent children: one to an Advertising Art student and the other to a Computer Analyst/Programmer student. Criteria include completion of at least two terms, minimum 2.5 GPA and financial need. Application forms are available from the Student Awards Office and will be accepted until the end of October each year.

Doug Newton Memorial Scholarship
Cash is awarded annually to an Administrative Assistant student for outstanding academic achievement.

Federated Co-operatives Limited Award
Cash is award and a trophy presented annually to an outstanding student in Commercial Baking.

Frank H. Wiley Limited Award
One $200 award is made annually to the most dedicated student in Commercial Baking.

Garland Commercial Ranges Limited Awards
Two awards of $125 will be made to outstanding students enrolled in the Chef Training program.

Gladys Bell Scholarship
A cash award is presented annually by Gladys Bell’s former associates and students to an Administrative Assistant student for academic proficiency.

Hewlett-Packard (Canada) Limited Award
Programmable calculators are awarded to Term 4 Computer/Analyst Programmer students for outstanding achievement in Term 1 through Term 3.

Hospitality Sales and Marketing Association International – Manitoba Chapter Award
A $200 award is presented to acknowledge a Hotel and Restaurant Administration student’s contribution to the Hospitality Sales and Marketing Student Association and their potential for success in the hospitality industry. Contact the Hospitality Department for further information.
IABC Manitoba Award
The International Association of Business Communicators (IABC) will pay third-term tuition fees plus student membership in the IABC for one year for the first-year Creative Communications student submitting the best proposal in Term 2 Public Relations.

Irwin Dorsey Scholarship
Awarded to the first-year Business Administration student who achieves the highest cumulative GPA at the end of the second term. If necessary, secondary consideration will be grades earned specifically in the accounting courses. The scholarship will consist of all Irwin Dorsey textbooks required for the recipient’s second year being provided free of charge.

James S. Purvis Bursary Fund
A cash award will be presented annually to a first-year Creative Communications student(s) on the basis of outstanding academic achievement.

John Harding Memorial Award
John Harding was a Creative Communications instructor who taught and encouraged his students to write well. This award was established by his family, friends and colleagues to give a promising Creative Communications student facing emotional or financial hardship, an impetus to continue to write well. It is presented annually with selection of the recipient being made by the department’s instructors. If you are eligible for this award contact your faculty advisor, an instructor or the Student Awards Office.

John Herman Memorial Prize
An annual prize of $400 will be awarded to a graduating Business Administration student for performance in Statistics and Quantitative Methods. The recipient will be a full-time student, eligible to graduate that year, with a minimum cumulative grade point average of at least 3.00.

Joyce Dixon Scholarship
This scholarship has been established in Joyce Dixon’s honor by her former associates and students and is awarded to a student enrolled in the Administrative Assistant program who best displays the qualities and skills required by a professional secretary.

Manitoba Association of Library Technicians (MALT) Award
MALT gives this award to a first-year Library and Information Technology student based on demonstrated academic excellence in the technical component.

Manitoba Community Newspaper Association (MCNA) Scholarship
An award of second-year tuition fees will be presented to a first-year Creative Communications student who is carrying a full course-load, who has passed all courses, and who has shown talent and interest in the “community newspaper field.”

Manitoba Hotel Association Bursary Award
Awards of up to $2,000 are granted to Hotel and Restaurant Administration students entering the second year of the program. Applicants require a demonstrated academic proficiency and a genuine interest in and/or acceptable experience in occupations related to the hospitality industry. Deadline is June 1. Students are recommended by the Hotel and Restaurant Administration faculty. Selection is made by a panel of Manitoba Hotel Association members.
Manitoba Library Association Award
The Manitoba Library Association gives an award to a full-time graduating student in the Library and Information Technology program who has demonstrated academic excellence and career promise. The recipient's achievement is also honored on a plaque displayed in the Library at the College.

Manitoba Milk Producers' Marketing Board Award
A $200 award is made to the student with the highest standing in the Commercial Cooking program.

Manitoba Restaurant and Food Services Association Awards
Two $300 awards are offered to graduating students: one in Hotel and Restaurant Administration; the other in Chef Training. Contact the Hospitality Department for further details.

Manitoba Telephone System Scholarship
A cash award of $250 will be presented to a first-year Creative Communications student with a minimum GPA of 3.00 carrying a full course-load who intends to carry a full second-year course-load in either public relations or journalism. The student must have demonstrated excellent writing skills and have shown a positive attitude towards instructors and classmates. Final selection will be based on a writing sample completed in March/April.

Mariner Seafood Company Award
A cash award is made annually to an outstanding student in Chef Training.

Max Goldin Memorial Scholarship
A cash award is made to a first-year Creative Communications student judged on the basis of the following: a) grades in Creative Writing in all three terms; b) interviews with three finalists; c) consideration of extra-curricular creative writing done during first year; d) passing grades in all first-year courses.

May Muir Scholarship
This scholarship is administered by the Winnipeg Chapter of Professional Secretaries International and is awarded to a student enrolled in the second year of the Administrative Assistant program. It is based on academic achievement in the first year of the program.

Merck Frosst Award
A $300 award to the Commerce/Industry Sales and Marketing student with the highest academic standing. Selection will be made by the faculty of the Commerce/Industry Sales and Marketing program and will be based on cumulative GPA earned at end of second term.

Murray Lloy Memorial Scholarship
Three bursaries of approximately $500 each may be presented annually to Creative Communications students on the basis of need. This award was established to honor the memory of Creative Communications graduate and instructor, Murray Lloy. A first-year student should be carrying a full course-load and plan to continue into second year. A second-year student should be eligible for graduation at the time application is made. Students should apply in writing to the Creative Arts Department.
Peter Nykoluk Memorial Award
This award was established by his family in memory of Peter Nykoluk, a Business Administration student at the College at the time of his accidental death. Two bursaries of $200 each will be awarded annually. Applications will be accepted by students enrolled in the following programs: Business Administration, Business Administration Integrated, Business Accountancy, Business Accountancy Integrated or Commerce/Industry Sales and Marketing. Criteria include satisfactory academic progress and financial need. Application forms are available from the Student Awards Office and will be accepted from December 15 until January 31.

Robert Drinnan Memorial Scholarship
Established to honor the memory of Creative Communications instructor, Robert Drinnan. A certificate and cash award is made to a first-year Creative Communications student on the basis of academic progress, participation, attendance, and attitude.

Robin Hood Multifoods Limited Award
Cash is awarded annually to a student in Commercial Baking.

SAM Advertising Awards for Excellence
Cash is awarded to a second-year Creative Communications student on the basis of commitment, attitude, and overall marks in advertising.

Society of Management Accountants of Manitoba Awards
Cash and tuition (for CMA) awards totalling approximately $3,800 will be awarded as follows: four awards to Term 6 Business Administration students; and four awards to Term 3 Business Accountancy students, based on academic performance.

Stan Bogucki Humanitarian Award
A scholarship of $100 and a plaque in memory of Stan Bogucki, who was department head of Teacher Education, is donated by the Industrial Arts Teacher Education staff. This award is presented to an Industrial Arts Teacher Education student who has completed the first three years of the program and has shown high academic achievement, good leadership abilities, and has made a professional commitment.

St. James-Assiniboia Chamber of Commerce Scholarship
A $250 scholarship is awarded to a St. James-Assiniboia resident attending the two-year Business Administration program at Red River Community College. Criteria are: a) completion of at least two terms of the Business Administration program; b) currently residing in and must have been a resident of St. James-Assiniboia for at least one year prior to the start of the program; c) academic standing of 3.00 GPA; d) participation in business or related clubs on or off-campus; e) Canadian citizenship or landed immigrant status; f) community involvement; g) commitment to private enterprise and to excellence.

Student Design Group Award for Excellence
This award was established by the senior class in Advertising Art. An annual cash prize will be awarded to a graduating Red River Community College Advertising Art student for overall performance in Design. The recipient will be a full-time student, with a minimum cumulative grade point average of 3.00.
3M Canada Incorporated Bursary
Two bursaries of $500 each are available annually to full-time students attending Red River Community College. One will be awarded to a second-year Business Administration student and the other to a second-year Electrical or Electronic Engineering Technology student. The selection of recipients will be based on financial need and academic progress. Applications will be accepted until the end of October each year.

Unisource Outstanding Sales Award
A $300 award and a trophy will be presented annually to a student in the Commerce/Industry Sales and Marketing program. The selection will be based on academic achievement, sales presentation ability, and school and community involvement.

Val Mason Scholarship Award
Sponsored by the Society of Club Managers, this award of up to $1,000 is granted to the applicant who shows promise in a career in private club management. Contact the Hospitality Department for further information.

Versa Services Award of Excellence
A cash award made annually to an outstanding student in Commercial Cooking.

Winnipeg Business Club Inc. Award
An award of $400 is given annually to a deserving student based on marks and participation in the Business Administration Entrepreneurship course and the Entrepreneurship Practicum. The student must show interest in business and entrepreneurship and must maintain a minimum cumulative grade point average of 3.00.

Winnipeg Construction Association Awards
One $100 award is given to a first-year Industrial Arts Teacher Education student for proficiency in construction at the introductory level and one $100 award is given to a third-year student for proficiency in construction at the advanced level.

Winnipeg Press Club Foundation Awards
Two $50 cash awards are given for the best feature stories written by first-year Creative Communications students. Two $200 cash awards are given for the best investigative stories written by second-year Creative Communications students.

Continuing Education
George Andrew Mitchell Technical Bursary
A bursary to cover the cost of tuition and books is available to students with demonstrated financial need who are registered in any of the following Continuing Education programs: Architectural Drafting, Building Construction Technician, Computer-Aided Drafting, Desktop Publishing, Digital Electronics, Industrial, Industrial Electrical Maintenance, Industrial Electronics, Industrial Supervision, Machine Drafting and Engineering Design, Media Production Technician, Photography, Trade Improvement (with the exception of Car Care Clinic, Gunsmith and Small Motors), and preparatory courses leading towards these programs. Application forms are available from the Continuing Education Office, C116.
Gervin Alexander Dobbin Memorial Scholarship
A $200 scholarship has been established to honor the memory of former Evening Program supervisor, Gervin Alexander Dobbin. The scholarship is to be awarded annually to a part-time evening/Saturday program student who is a single parent with a financial need and who is currently registered in a Continuing Education program. The scholarship is awarded during the fall term. Application forms are available from the Continuing Education Office, C116.

Developmental Education

English Speaking Union Award
An award of $100 and a certificate will be presented annually to a student enrolled at the College's Language Training Centre. Selection will be based on academic excellence reflected by competency in all aspects of language development (reading, writing, speaking and listening).

Health, Community Services and Applied Sciences

Addison Wesley Award
Two book awards are presented, both for highest academic mark in Nursing Theory: one to a Nursing Year 1 student and the other to a Nursing Year 2 student. The recipient of this award is chosen by the faculty of the Nursing Department.

Baxter—Canlab Award
A cash award is presented for the Medical Laboratory Technology student who attains the highest standing in Clinical Chemistry.

C.V. Mosby Award
A book award is presented in recognition of an individual with the highest score in Nursing Practice, Year 2. The recipient of this award is chosen by the faculty of the Nursing Department.

Chemical Rubber Company Book and Scroll Award
Handbook of Chemistry and Physics and a scroll are given to a first-year student in the Applied Sciences Department who excels in a first-year Chemistry course.

Colin Maxwell Memorial Bursary
A $100 bursary is available to assist a needy student entering Term 1 of the Medical Radiological Diagnostic Technology program or Term 2 of the Radiation Therapy program.

Coulter Electronics of Canada Limited Award
A book award is presented to the Medical Laboratory Technology student who attains the highest standing in Hematology.

Department of Family Services Child Care Award
Established by the Department of Family Services, an annual award consisting of a collection of children's literature will be presented to a graduating Early Childhood Education student. The recipient will have displayed outstanding personal growth towards professionalism. Selection will be based on academic progress, performance, practical experience and leadership/involvement both in class and out.
Dr. Gretta Brown Scholarship
This scholarship was established by the Manitoba Child Care Association (MCCA) in memory of Dr. Gretta Brown and her distinguished contributions to the child care field. A cash award will be made annually to a first-year Early Childhood Education student, who is a member of the MCCA, entering his or her second year of the diploma program who has demonstrated professionalism and leadership, qualities that Gretta upheld in her long and distinguished career.

Fisher Book Award
A cash award is made to the Medical Laboratory Technology student who attains the highest standing in Clinical Microbiology.

The Grummet Memorial Fund Bursary
A $500 bursary is given to a Manitoba student entering a diploma nursing program in the province. Application forms are available from the Manitoba Association of Registered Nurses. Deadline for applications is September 30.

Gudmundur Myrdal Bursary Program
This bursary was established in tribute to Gudmundur Myrdal, first Executive Director of Seven Oaks General Hospital, to assist full-time students in the health profession with the cost of tuition fees. A letter of application may be submitted to Seven Oaks General Hospital, c/o Administration.

Hill’s Pet Product Nutrition Award
A $200 award and a plaque is given to a second-year student in the Animal Health Technology program who excels in Small Animal Nutrition Clinic.

Jo-Anna Sevcik-Botchar Memorial Award
Awarded to the Dental Assisting – Level 2 student who has demonstrated to the greatest extent the qualities of “honest, hard work” and a genuine concern for classmates.

John Elsbury Memorial Scholarship
A $500 award is made to a Medical Laboratory Technology student on the basis of financial need and academic performance with emphasis on marks achieved in the course of Immunohematology. The deadline for applications is March 31.

Joseph M. Scott Awards
Awards are sponsored by the Manitoba Branch of the Canadian Society of Laboratory Technology for students in Medical Laboratory Technology. Two cash awards are available for highest and second-highest total aggregate of marks obtained in all theoretical and practical phases of the program. One cash award is available for the highest technical proficiency in the practical aspects of the overall program.

Leica Canada Award
An award is made to the Medical Laboratory Technology student who attains the highest standing in Diagnostic Cytology.

MTC Pharmaceuticals Award
A plaque is awarded annually to a graduating Animal Health Technology student who excels academically.
Manitoba Animal Health Technology Association Book and Plaque Award
This award is presented to the outstanding student from the first year of the Animal Health Technology program.

The Manitoba Association of Registered Nurses (MARN) Bursary
A $500 bursary is given to a student entering the second year of the Nursing program. Application forms are available from MARN, 647 Broadway Avenue, Winnipeg, Manitoba R3C 0X2. Deadline for applications is September 30.

Manitoba Dental Assistants Association Award
A plaque is presented to a student in the Dental Assisting – Level 2 program based on professionalism.

Manitoba Dental Association Award
A plaque is presented to a student in the Dental Assisting – Level 2 program based on academic merit and outstanding achievement.

Medical Radiological Diagnostic and Radiation Therapy Bursary
A bursary of $150 is available to assist a needy student entering Term 1 of the Medical Radiological Diagnostic Technology program or Radiation Therapy program.

Manitoba Veterinary Medical Association Award
A $200 award is made to a second-year student in the Animal Health Technology program who demonstrates academic proficiency and practical technical abilities.

Nikon Canada Award
An award is given to the Medical Laboratory Technology student who attains the highest standing in Histotechnology.

Organon Teknika Award
An award is given to the Medical Laboratory Technology student most proficient in both theoretical and practical aspects of the overall program.

Ortho Diagnostics Award
Cash is awarded for the Medical Laboratory Technology student who attains the highest standing in Immunohematology.

Pat Lucki Memorial Award
This award was established by Elmwood Day Nursery in memory of Pat Lucki, a Child Care Services graduate of the College. A plaque will be presented annually to a graduating Early Childhood Education (formerly Child Care Services) student based on personal characteristics exhibited by Pat such as enthusiasm, love, thoughtfulness and dedication to children, as recommended by the faculty of the Early Childhood Education program.

Rh Pharmaceutical Inc./Apotex Biotechnology Inc. Bursary
A $500 bursary will be awarded to a second-year Chemical and Biosciences Technology student on the basis of financial need and demonstrated academic ability. Application forms are available from the Student Awards Office and will be accepted from December 15 until January 31.
Students Helping Students Award
Established by the 1994 Child Care Services graduating class. $100 award will be presented to a graduating Early Childhood Education (formerly Child Care Services) program student. Criteria will include leadership abilities, program and community involvement and academic performance. Faculty will select the recipient, who, based on these criteria demonstrates sound employability skills and a strong understanding of children's development and needs. Most importantly, the recipient will be a positive, enthusiastic role model for future early childhood educators.

W.B. Saunders Book Award
This award is presented to a graduating student in the Animal Health Technology program who has the highest academic and practical standing in the program.

Wilfred Dychuk Award
An award of $100 is given to a first-year student in the Applied Sciences Department who demonstrates proficiency in the analytical chemistry laboratory.

Technology

Armed Forces Communications and Electronics Association (Winnipeg Chapter) Award
Two awards of $350 each are given to full-time students entering second year of Computer Engineering Technology or Electronic Engineering Technology. This award will be based on the first year's work and will be offered to students who have demonstrated above-average abilities in the academic and vocational areas of the program and who have received no other award.

ASM International Award
This award of an ASM Materials Selection Handbook is for a student entering second year of Mechanical Engineering Technology who is taking the full program load and attains the highest standing in the Metallurgy course.

Association of Manitoba Land Surveyors Scholarships
One award of $600 and one award of $200 is given to students entering Term 4 of Survey Engineering Technology.

Birchwood GMC — Motor Vehicle Mechanic Scholarship
An award of $100 and a plaque is available for a student outstanding in theory and practice and community involvement.

Bird Construction Company Limited
One award of $400 and one award of $200 is available for students entering second year of Engineering Design and Construction Technology.

Boeing Canada Technology Limited Scholarship
Two awards of $500 each are given to students entering second year of Mechanical Engineering Technology.
Bristol Aerospace Limited Scholarships
Two awards of $200 each are given to students entering second year of Electronic Engineering Technology and Mechanical Engineering Technology.

C.E. Littler Memorial Award
This award is given annually in December by the Institute of Power Engineers (Manitoba area) to a student (who is a student member of the institute) in the Power Engineering program (4th Class), for demonstrated academic and technical ability.

CN Scholarship for Women
One scholarship of $500 is available to a female student on the basis of her demonstrated interest in a non-traditional career, who is entering Piping Trades, Diesel Mechanics, Welding, Electrical, Machine Shop Practice, Telecommunications, Drafting, Mechanical Engineering Technology or Power Engineering at the College. Application forms are available from the Student Awards Office. Application deadline is July 31.

Canadian Institute of Geomatics Membership Award
An award of a two-year membership in the Canadian Institute of Surveying is given to a graduate in the Survey Engineering Technology program.

Canadian Portland Cement Association Concrete Technology Award
A commemorative plaque suitably inscribed and $200 will be presented annually to a student enrolled in Civil, Engineering Design and Construction, or Structural Engineering Technology who has demonstrated the highest degree of excellence in concrete technology.

The Canadian Technical Asphalt Association (CTAA) Book Prizes
The Canadian Technical Asphalt Association, through its education committee, each year awards book prizes to students who excel in asphalt technology. The awards provide complimentary student membership for two years and complimentary copies of the proceedings for those two years. Apply directly to the Civil Engineering Technology Department.

Clay Brick Association Scholarship
An award of $100 plus a medallion is given to a student in Engineering Design and Construction Technology with the highest overall standing at the end of Term 6.

Construction Specification Canada (CSC) Scholarship
A scholarship in the amount of $300 plus a one-year student membership in the CSC is given for high academic performance at the completion of the first year of the Engineering Design and Construction Technology or Civil Engineering Technology programs.

Dynamic Machine Corporation Limited Bursary
A cash award is presented annually to a student graduating from the Machine Shop Practice program based on technical ability, financial need, and having at least an average academic standing.

Edward S. Smendziuk Memorial Award
This award is presented annually to a full-time Civil Engineering Technology student in his or her graduating year and is based upon high academic standing, participation in extracurricular activities, and leadership qualities. The award honors the memory of Edward S. Smendziuk, department head of Civil Technology, who passed away suddenly in October of 1984.
The Electric Service League of Manitoba
Two scholarships of $200 are available for students entering second year of Electrical Engineering Technology.

Griffin Canada Incorporated Scholarship
An award of $1,000 is given to the following recipients entering second year: $300 each to two students and $200 to another in Instrumentation Engineering Technology; and $200 to a student in Electrical Engineering Technology.

Hewlett-Packard (Canada) Limited Award
An 11C calculator will be awarded to a top student in Electronic Engineering Technology who has displayed excellence in the subjects of instruments, circuits and mathematics.

I.D. Engineering Scholarships
Two scholarships of $200 each are available to students entering second year of Civil and Structural Engineering Technology.

IKOY Partnership Architects
One annual scholarship in the amount of $200 will be awarded to an Engineering Design and Construction Technology student having the highest standing in his or her graduate thesis.

Inco Limited Engineering Technology Bursaries
Six awards of $100 each are given to deserving students who are pursuing a full-time program leading to a diploma in Civil Engineering Technology, Electronic Engineering Technology or Mechanical Engineering Technology. They should be Canadian citizens or possess landed-immigrant status, have a good scholastic record and demonstrate interest in extracurricular affairs.

The Institute of Power Engineers (Greater Winnipeg Branch)
Two $50 awards are given each June to students (who are student members of the institute) in the Power Engineering program (3rd Class), for demonstrated academic and technical ability.

Jessica Miner Scholarship
An award of $100 is made annually to an outstanding student in a one-year electronic technician program.

Manitoba Hydro Employment Equity Bursaries
Bursaries of $600 each and a first option for a summer job with Manitoba Hydro following successful completion of the first year of studies are available to women, persons of native ancestry, the physically disabled and members of visible minority groups seeking enrollment in first-year studies in the Civil, Computer, Electrical or Electronic Engineering Technology programs at Red River Community College. Application forms are available from the Student Awards Office. The deadline for applications is July 31.

Manitoba Hydro Scholarship
A scholarship of $200 is available for a student entering second year of Electrical Engineering Technology.
Manitoba Ready Mix Concrete Association Scholarship
An award of $500 is presented annually to a graduating Civil Engineering Technology student who has demonstrated excellence in concrete technology studies.

The Manitoba Society of Certified Engineering Technicians and Technologists Scholarships (MANSCE&T)
Three scholarships of $200 are given to one student member entering second year of each Civil, Electronic and Mechanical Engineering Technology based on academic standing. To be eligible, the recipients must be student members of MANSCE&T.

The Manitoba Sugar Company Limited Bursary
An award of $100 is given to a student entering second year of Mechanical Engineering Technology.

Manitoba Telephone System Scholarship
A scholarship of $200 is available to a student entering second year of Electronic Engineering Technology.

Moore Industrial Limited Awards
Two awards of $250 each are awarded to students upon recommendation of the department's faculty. One will be awarded to a Machine Shop Practice (Advanced) student, the other to a Computer Numerical Control Machine Operator student.

Neelin Wilson Construction Inc. Scholarship
Two awards of $250 each are to be awarded to students entering the second year of Civil Engineering Technology who have demonstrated either highest academic achievement or greatest improvement in both written and oral communication.

Norm Bercuson Bursary
A $250 bursary is to be given to a student entering second year of Instrumentation Engineering Technology.

Pritchard Engineering Company Limited Bursary
A bursary of $300 is available to a student entering second year of Mechanical Engineering Technology.

The Roning Group
An award of $200 is given to a technology student displaying the greatest proficiency in oral and written communication, and in report writing.

Society of Manufacturing Engineers Award
One award for excellence is presented to a student in manufacturing-related courses in Mechanical Engineering Technology, consisting of one volume of the Society of Manufacturing Engineers Tool and Manufacturers Handbook.
3M Canada Incorporated Bursary
Two bursaries of $500 each are available annually to full-time students attending Red River Community College. One will be awarded to a second-year Business Administration student and the other to a second-year Electrical or Electronic Engineering Technology student. The selection of recipients will be based on financial need and academic progress. Applications will be accepted until the end of October each year.

Toyota Canada Scholarship
Two scholarships of $500 each are awarded annually to Motor Vehicle Mechanic – Work Experience students based on academic standing. Selection will be made by Motor Vehicle Mechanic – Work Experience program faculty.

UMA Holdings Limited Scholarships
Two scholarships of $400 each are available to students entering second year of Civil and Structural Engineering Technology.

Western Association of Broadcast Engineers Award
An annual award of $250 will be presented to a student who has completed the first year of the Electronic Engineering Technology program at the College and is entering the second year.

Wardrop Engineering Inc. Scholarship
A $300 scholarship is awarded to a student entering the second year of Engineering Technology displaying the greatest proficiency in oral and written communication.
Programs

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Administrative Assistant

Purpose
The purpose of the program is to meet the ever-increasing need for individuals who have strong communications skills and training in information management.

Program
The Administrative Assistant is a two-year program with a September entry date. It is enriched by two terms of paid co-operative work experience.
The program has an advisory committee that includes representatives from business, industry, government and the College. Through this committee, the College keeps up-to-date with the changing trends in business and the requirements of prospective employers.

Entrance requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S or 301/40G and Mathematics 300/40S or 301/40G;
or
– Adult Basic Education 11B with supplemental mathematics topics;
and
B – attend an information session with the Administrative Assistant faculty.

Mature Student Admission. Mature students are not required to have a complete Grade 12/Senior 4 standing but must meet entrance requirements B and C and must be 20 years of age on or before September 30 in the year of registration. All mature applicants are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
The Administrative Assistant program prepares graduates for careers at all levels of small, medium and large businesses or government departments. The extensive background in computer applications and organizational skills enables graduates to coordinate activities of managers and executives.

Continued on next page
Administrative Assistant (continued)

Program Outline

Term 1
B18-A205  Accounting 1
B18-C225  Communications 1
B18-T210  Keyboarding 1
B18-V205  Interpersonal Communications
B18-X205  Introduction to Computers

Term 2
B18-A305  Accounting 2
B18-C325  Communications 2
B18-M305  Office Procedures
B18-T310  Keyboarding 2
B18-T405  WordPerfect — Basic

Term 3
B18-C425  Report Writing
B18-D405  dBASE IV
B18-E402  Employment Preparation 1
B18-F403  Records Management 1
B18-L305  Lotus 1-2-3
B18-T505  WordPerfect — Advanced
B18-W402  Windows
B18-W405  Keyboarding 3

Term 4
B18-E400  Co-operative Work Experience 1

Term 5
B18-B504  Introduction to Business
B18-C505  Oral Communications
B18-E502  Employment Preparation 2
B18-F503  Records Management 2
B18-W505  Keyboarding 4
B18-W555  WordPerfect Applications 1
B18-W656  Microsoft Word/Windows
B18-X505  Microsoft Office

Term 6
B18-E600  Co-operative Work Experience 2

Term 7
B11-A495  Microcomputer Accounting (GL)
B12-E171  Economic Principles (BA1)
B18-G604  Desktop Publishing
B18-O605  Organization/Seminar
B18-S604  Supervision
B18-X605  Software Applications
Adult Basic Education

Purpose
To upgrade academic skills in mathematics, English, physical science and related programs for enhanced education or employment opportunities.

Program
Adult Basic Education (ABE) programs are approximately five months in length and have varied entry dates. Adult 10 is offered on a 12-month per year continuous basis, with large intakes in September and February. Adult 11A, 11B and 11C have September and February entry dates. Adult 12 has September and February entry dates. ABE courses may also be taken on a part-time basis during the day (phone 204-632-2418) or may be available during the evening (phone 204-694-1789).

Adult 10 will give you the chance to get enough academic skills to meet Adult 10 entrance requirements for Manitoba community college programs. Although mathematics and communication will be emphasized, science will be taught when required for occupational goals.

Adult 11. There are three Adult 11 programs: Adult 11A, which is science-based; Adult 11B, which is business-based and Adult 11C. Each program has been designed as a preparation for a different educational and occupational goal. To ensure that you choose the right Adult 11 program, you should check the entrance requirements for the college program you wish to take when you finish upgrading.

Adult 11A will prepare you to enter the one-year science-based programs at the College.

Adult 11B will prepare you to enter the one-year and two-year business and applied arts programs at the College.

Adult 11C will prepare you to enter the Dental Assisting program at the College.

Adult 12 is a science-based program and is a follow-up to the Adult 11A science-based program. It will prepare you to meet the entrance requirements of the two-year technology programs at the College.

Entrance Requirements
Applicants must:
A – write the Level Placement Test to determine the right upgrading entrance level;
B – be at least 17 years of age.

Employment Potential
After successful completion of appropriate academic upgrading, former students have gone on to enroll in the community college programs of their choice. Others have found that the programs opened up new employment opportunities for them. An additional benefit for many has been the personal development and self-esteem that have grown from their increased knowledge and skills.

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## Adult Basic Education (continued)

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<td>Computer Awareness Training — Keyboarding</td>
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<td>S03-N003</td>
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<td>S03-R002</td>
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<td>S03-S002</td>
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#### Adult 10

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<td>S02-D425</td>
<td>Algebra Problems</td>
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<td>S02-D426</td>
<td>Geometry 1</td>
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<td>Chemistry C</td>
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<td>S02-D509</td>
<td>Life Science B C</td>
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Advanced Technology Management

Purpose
The purpose of the program is to provide technologists and others with the knowledge, skills and attitudes required for their roles as supervisors and managers in technical organizations.

Program
To obtain an advanced diploma, students must have 50 credit hours from the program. The program comprises 8 x 36-hour management courses (including five core courses and three elective courses), 6 x 36-hour advanced technology courses or the equivalent in a specified occupational area and a comprehensive graduation project. The graduates of this program will be able to demonstrate appropriate knowledge, skills, abilities and attitudes in their management of: 1. technology, 2. marketing, 3. finance, 4. business, and 5. human resources.

Entrance Requirements:
- graduation with a two-year technical diploma from a recognized technical institute or community college;
  or
- graduation with a three-year or four-year degree in a technical, scientific or engineering discipline from a recognized university or polytechnic;
  and
- certification or professional designation from a recognized, accredited association or certifying organization or society;
  or
- at least two years of verifiable related work experience in an appropriate technical environment.

Employment Potential
Most Advanced Technology Management students are actively employed while completing program courses. It is expected that graduates of the program will be more competitive for available management opportunities in technological work environments.
Advanced Technology Management (continued)

Program Outline

Management Component

Core courses:
TMT-B400 Managing Change and Diversity
TMT-F300 Economics and Finance
TMT-H500 Managerial Communications
TMT-M200 Marketing of Technology
TMT-T100 Engineering, Technology and Management

Elective Courses:
TMT-B402 Organizational Behaviour
TMT-F307 Management Accounting
TMT-F308 Management Information Systems
TMT-H502 Human Resource Management
TMT-L110 Introduction to Business in Japan
TMT-L120 Introduction to Business in Mexico
TMT-L130 Introduction to Business in China
TMT-S500 Business Policy
TMT-T102 Technology and the International Marketplace
TMT-T104 Quality Management

Technology Component

Technical Major
Environmental Technology
Geographic Information Systems Technology
Mechanical Technology
Electrical/Electronic Technology

Graduation Project

Courses:
TMT-GP01 Graduation Project
TMT-AR01 Applied Research Methods
TMT-RC01/TMT-TA01 Research Colloquium/Technology Assessment
Advanced Welding

Purpose
The purpose of the program is to upgrade practical welding skills and techniques to meet the certification requirements of Manitoba Labour and/or the Canadian Welding Bureau (CWB).

Program
The Advanced Welding Program has a continuous entry, from March to June. The length of the program for the individual applicant will be determined by the time required to obtain a maximum of two successive tickets. This program has been designed to provide a facility and instruction for qualifying welders to practice in preparation for certification examinations.

Participants will spend five hours each day (8 a.m. - 1 p.m. or 1 - 6 p.m.), Monday through Friday, in the development of skills and procedures required for the various classes of certification. The most common certificates are:

- F6 - OFW (Oxyacetylene)
- F6 - (TIG) Carbon Steel or SS
- F3 - Downhand or Uphand
- F4 - Uphand
- CWB - Plate (Steel) 4 position

Testing for certification is arranged by the applicant with the testing authority.

Please note that because Workers Compensation regulations stipulate that steel-toed footwear must be worn in industrial workplaces, students must provide and wear appropriate safety footwear in welding and machine shops.

Fees will be assessed on the basis of the time required by the individual applicant to prepare for certification examinations. (Past experience has indicated that six to eight weeks are required per initial certificate.)

Human Resources Development may sponsor students to take this program. Please make enquiries at your local Canada Employment Centre.

Entrance Requirements
- To be eligible to test under Manitoba Labour, applicants must prove a minimum of three years welding experience in manual arc welding with flux-coated electrode (SMAW) for high pressure pipe welding.
- Eligibility under the Canadian Welding Bureau requires two years of SMAW welding experience;
  or
- completion of a recognized welding training program, plus SMAW experience equal to two years,
  or
- sponsorship of a CWB member employer.

Certification from other jurisdictions (e.g., apprenticeship programs, other provinces) may be accepted. Eligibility to test is determined solely by the testing authority.
Advanced Welding (continued)

Testing (continued)
Applicants must prove eligibility to be tested by:
- Welding Examiner, Manitoba Labour
  Mechanical and Engineering Branch
  501-401 York Avenue
  Winnipeg, Manitoba R3C 0P8
  Phone: 204-945-3374 or 204-945-4138
- Canadian Welding Bureau (CWB)
  208-1555 St. James Street
  Winnipeg, Manitoba R3H 1B5
  Phone: 204-786-4068

Employment Potential
Welders who have enrolled in Advanced Welding generally have found that development and upgrading of welding skills to meet certification requirements have enhanced their employment qualifications and job opportunities.

How do I apply?
For information on this or other welding programs, please contact:
Coordinator
Welding Department
Red River Community College
B168A – 2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9
Phone: 204-632-2204
Advertising Art

Purpose
We are living in a world that has become dependent on effective communication. Graphic design plays a vital role in the process of presenting ideas, information, products and services in an expanding global economy. The aim of the Advertising Art program is to provide up-to-date artistic training in the technology, techniques, and philosophy of graphic design.

Program
Advertising Art is a two-year diploma program with a September entry date. The program offers a balanced program of art instruction and academic courses. It is designed to develop the technical skills and knowledge essential to professional competence, and to encourage creativity, imagination and a sense of aesthetic discrimination. Practical work experience is provided through field placement in the graphic communications industry.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation;

or

– Adult Basic Education 11B;

and

B - A specified portfolio of art work. (Portfolio requirements are released in January each year and sent to the applicant after receipt of the application and supporting education documents. Note that portfolio specifications are changed annually.);

and

C – An interview with the Advertising Art selection committee.

This is a special selection program. The selection committee interviews applicants who have completed entrance requirements A and B and whose portfolios are considered acceptable to the committee. The committee selects candidates who have the ability to express themselves in graphic form (i.e., have talent in drawing) and who are interested in earning their living through the practice of graphic design. Because this special selection program has a cut-off date for applications, you should submit your application as early as possible. Please contact the Registration Department at 204-632-2327 or 1-800-903-7707 (outside Winnipeg in Canada) to confirm the exact cut-off date.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must meet entrance requirements B and C above and be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Testing by the College may be required.

Employment Potential
Graduates of this program have found employment as production specialists, graphic designers, illustrators and art directors. They work in retail stores, advertising agencies, graphic design studios and color houses, as well as with newspapers and magazine publishers. Others are working in the television and film industry and some are employed as freelance artists.

Continued on next page
## Advertising Art (continued)

### Program Outline

#### YEAR 1

**Term 1**
- B01-A101 Basics of Form
- B01-A102 Principles of Drawing
- B01-A103 Basic Art Production Techniques 1
- B01-A108 History of Graphic Design
- B01-A109 Introduction to Computers for Electronic Publishing
- B01-A110 WHMIS Training
- B01-A111 Reproduction Methods and Materials
- B10-C109 Introduction to Advertising

**Term 2**
- B01-A203 Basic Art Production Techniques 2
- B01-A211 History of Graphic Design
- B01-A212 Introduction to Electronic Publishing 2
- B01-A213 Life Drawing
- B01-A215 Graphic Design
- B01-A216 Reproduction Methods and Materials
- B10-C209 Intro to Advertising – Ad Art

**Term 3**
- B01-A301 Graphic Design
- B01-A302 Sketching for Illustration
- B01-A308 Reproduction Methods and Materials
- B01-A313 Advanced Production
- B01-A315 History of Graphic Design
- B01-A318 Introduction to Electronic Publishing 3
- B10-C309 Intro to Advertising – Ad Art

#### YEAR 2

**Term 4**
- B01-A316 Work Experience 1
- B01-A403 Electronic Publishing
- B01-A406 Advertising Design
- B01-A407 Graphic Design
- B01-A419 History of Graphic Design
- B01-A421 Practicum
- B01-A422 Design Management
- B01-A423 Publication Design
- B01-A424 Rendering for Illustration
- B01-A425 Electronic Prepress Theory

**Term 5**
- B01-A420 Work Experience 2
- B01-A501 Advertising Design
- B01-A507 Graphic Design
- B01-A518 Creative Imaging
- B01-A519 Applied Electronic Prepress
- B01-A520 Rendering for Illustration 2
- B01-A522 Design Management
- B01-A523 Publication Design

**Term 6**
- B01-A601 Advanced Advertising Design
- B01-A616 Advanced Graphic Design Problems
- B01-A617 Portfolio Presentation
- B01-A620 Advanced Rendering for Illustration
- B01-A621 Advanced Electronic Prepress
- B01-A622 Design Management
- B01-A623 Advanced Publication Design
- B01-A624 Advanced Creative Imaging
Animal Health Technology

Purpose
The purpose of the program is to develop the knowledge and skills required to be a member of the animal health care team.

Program
Animal Health Technology is a two-year diploma program with a September entry date. The program is designed to provide a sound fundamental knowledge of the basic sciences so that you will be able to understand and apply the principles of veterinary medicine such as animal management, medical and surgical nursing, anaesthesia, diagnostic procedures and practice management.

The program has an advisory committee that includes representatives from every employment area of animal health technologists. Through this committee, the College keeps abreast of changes in animal care and the requirements of prospective employers.

Entrance Requirements

A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and two of Chemistry 300/40S, Biology 300/40S or 301/40G, or Physics 300/40S;

or

— Adult Basic Education Pre-Technology/Adult 12;

B — a mandatory orientation session given in the month of February at Red River Community College by the instructional staff of the Animal Health Technology program.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirement B as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Note: The advisory committee to the Animal Health Technology program highly recommends that potential candidates for the program expose themselves to veterinary medicine and animal health technology at veterinary clinics or animal units for one to two weeks.

Employment Potential
Graduates of the program have found employment in private veterinary practices, in farm production units, in research laboratories, with zoological collections and with federal or provincial governments.
### Animal Health Technology (continued)

#### Program Descriptions

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<td>H09-A102 General Chemistry 1</td>
<td>H09-A408 Radiology</td>
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<td>H09-A103 Lab Safety</td>
<td>H09-A409 Reproduction</td>
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<td>H09-A107 Introduction to Animal Management</td>
<td>H09-A410 Clinical Pathology</td>
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<tr>
<td>H09-A110 Biology/Zoology</td>
<td>H09-A411 Surgical Nursing 1</td>
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<td>H09-A115 Computer Awareness</td>
<td>H09-A412 Anaesthesia 1</td>
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<td>H09-A116 Technical Mathematics</td>
<td>H09-A417 Hematology 2</td>
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<td>H09-A118 Communications</td>
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<td>T13-W100 WHMIS Workshop</td>
<td>H09-A511 Surgical Nursing 2</td>
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<td>H09-A106 Parasitology</td>
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<td>H09-A202 Medical Nursing</td>
<td>H09-A513 Pharmacology</td>
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<td>Practical Laboratory 1</td>
<td>H09-A516 Avians and Exotic Animal Medicine</td>
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<tr>
<td>H09-A203 Medical Nursing 1</td>
<td>H09-A517 Zoonosis and Public Health Medicine</td>
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<td>H09-A204 Organic Chemistry</td>
<td>H09-A519 Lab Animal/Small Fur-Bearing Animal Management</td>
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<td>H09-A214 Genetics</td>
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<td>H09-A218 General Microbiology</td>
<td>H09-A610 Projects</td>
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<td>H09-A219 Anatomy and Physiology 1</td>
<td>H09-A611 Large Animal Clinical Practicum</td>
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<td>H09-A302 Medical Nursing</td>
<td>H09-A612 Practice Management and Client Management</td>
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<td>Practical Laboratory 2</td>
<td>H09-A614 Small Animal Clinical Practicum</td>
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<td>H09-A303 Medical Nursing 2</td>
<td>H09-A615 Applied Nutrition</td>
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<td>H09-A616 Advanced Animal Health Techniques</td>
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<td>H09-A311 Anatomy and Physiology 2</td>
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<td>H09-A318 Applied Microbiology</td>
<td>H09-A626 Communications</td>
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<td>H09-A326 Hematology 1</td>
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</table>
Architectural Drafting, Structural Drafting, and Mechanical Systems Drafting

Purpose
To develop the skills and knowledge needed to assemble and produce working drawings, manually and computer-generated, as required by the architectural, structural or mechanical systems design and construction industries.

Program
Architectural Drafting, Structural Drafting and Mechanical Systems Drafting are 10-month certificate programs with a September entry date. Each program focuses on the development of both traditional manual drafting skills and high-technology methods using computer-assisted drafting systems. The drafting programs emphasize the use of acceptable drafting equipment, techniques and conventions.
All students enroll in a common first term of Architectural Drafting. Prior to starting the second term, students will choose between the Architectural, Structural or Mechanical Systems options. As the second-term option may be restricted by numbers, final selection will be made in consultation with the department chair and, if necessary, will be based on first-term grade point averages.

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with one of Mathematics 200/30S or 201/30G*. Standing in Physics 200/30S or Physical Science 201/30G is strongly recommended;

  or

- Adult Basic Education 11A.

  * Mathematics 200/30S, or its academic equivalent, is advised. A strong background in mathematics is essential to the drafting field.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Architectural Drafting graduates have found employment as junior draftspeople in architectural, consulting engineering, town planning, surveying and building subtrades drafting offices. After gaining experience, some graduates are employed as estimators, building inspectors, specification writers, technical representatives, construction supervisors or salespeople of building product lines.
Mechanical Systems Drafting graduates have found jobs with mechanical engineering consultants, suppliers and manufacturers of mechanical equipment, and mechanical contractors.
Job opportunities for Structural Drafting graduates have been found with steel fabricators, structural engineering consultants and steel detailing drafting offices.

Continued on next page
## Architectural Drafting, Structural Drafting and Mechanical Systems Drafting (continued)

### Program Outline

**Term 1 (common to the three options)**

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<td>T03-A106</td>
<td>Applied Architectural Drafting 1</td>
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<td>T03-A107</td>
<td>Computer Applications 1</td>
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**Architectural Drafting Option**

**Term 2**

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<td>T03-A206</td>
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<td>T03-A207</td>
<td>Computer-Aided Drafting 2</td>
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<td>T03-A208</td>
<td>Specifications</td>
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<tr>
<td>T13-M614</td>
<td>Drafting Math 2</td>
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<tr>
<td>T14-R504</td>
<td>Communications</td>
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**Term 3**

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<td>Surveying and Topographical Drawing</td>
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<tr>
<td>T03-A305</td>
<td>Quantity Take-Off</td>
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<tr>
<td>T03-A306</td>
<td>Applied Architectural Drafting 3</td>
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<tr>
<td>T03-A307</td>
<td>Computer-Aided Drafting 3</td>
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**Mechanical Systems Drafting Option**

**Term 2**

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<tr>
<td>T03-S204</td>
<td>Fundamentals of Mechanical Systems Drafting</td>
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<tr>
<td>T03-S205</td>
<td>Mechanical Systems (Plumbing) Drafting 1</td>
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<tr>
<td>T03-S206</td>
<td>Mechanical Systems (HVAC) Drafting 1</td>
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**Term 3**

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<td>T03-S304</td>
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<td>Mechanical Systems (HVAC) Drafting 2</td>
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<td>T03-S307</td>
<td>Computer-Aided Drafting 3</td>
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<td>T03-S308</td>
<td>Presentation Drawing and Modelling</td>
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<td>Work Experience</td>
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<td>T14-R504</td>
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**Structural Drafting Option**

**Term 2**

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<tr>
<td>T03-D202</td>
<td>Fundamentals of Structural Steel Detailing Drafting</td>
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<td>T03-D205</td>
<td>Applied Strength of Materials 1</td>
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<td>T03-D206</td>
<td>Computer-Aided Drafting 2</td>
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<td>T03-D207</td>
<td>Applied Structural Engineering Drafting</td>
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<td>T13-M614</td>
<td>Drafting Math 2</td>
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<td>T14-R504</td>
<td>Communications</td>
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**Term 3**

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<tr>
<td>T03-D302</td>
<td>Applied Structural Steel Drafting</td>
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<td>T03-D304</td>
<td>Applied Strength of Materials 2</td>
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<td>T03-D305</td>
<td>Work Experience</td>
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<tr>
<td>T03-D306</td>
<td>Computer-Aided Drafting 3</td>
</tr>
<tr>
<td>T03-D307</td>
<td>Surveying and Topographical Drawing</td>
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</tbody>
</table>

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Apprenticeship Programs

Purpose
To provide individual Manitobans with recognized trade certification and to ensure that a sufficient number of qualified tradespeople are available to meet industry’s requirements.

Program
Unlike other trade programs, apprenticeship training allows individuals to work in paid productive employment while they learn on-the-job and to be paid a training allowance while in school. To enter apprenticeship training, the individual finds an employer who needs a skilled employee and will hire her/him as an apprentice. Once a year, the employer releases the apprentice to attend school for several weeks to learn the theoretical aspects of the job. Most employers retain the people they have trained.

Annual training programs for indentured apprentices in the designated trades are offered by Manitoba Education and Training in full-time day classes at the College. These programs are at graduated levels and are attended at set intervals throughout the apprenticeship term. In most trades, the apprentice is required to attend three or four annual programs averaging six weeks in length.

The programs provide instruction in practice and theory of the trade together with related courses such as mathematics, science, blueprint reading and in some trades, welding and machine shop. These programs, coupled with on-the-job training, are designed to make the apprentice a fully competent journeyman.

Under the apprenticeship agreement, the apprentice agrees to be an exemplary employee and to make an honest effort to learn the trade. The employer agrees to provide training for the apprentice in all areas of the trade and to keep the apprentice employed as long as work is available.

The following Apprenticeship programs are offered in cooperation with Red River Community College.

Industrial:  
- Boilermaker  
- Machinist  
- Mold and Pattern Maker  
- Tool and Die Maker

Mechanical:  
- Motor Vehicle Body Painter  
- Motor Vehicle Body Repair  
- Motor Vehicle Mechanic  
- Refrigeration and Air Conditioning Mechanic

Construction:  
- Bricklayer  
- Cabinetmaker  
- Carpenter  
- Construction Electrician  
- Drywall Mechanic  
- Landscape Technician  
- Interior Systems Mechanic (lather)  
- Painter and Decorator  
- Plumber  
- Power Electrician  
- Sheet Metal Worker  
- Sprinkler & Fire Protection Installer  
- Steamfitter/Pipefitter

Service:  
- Cook

Entrance Requirements
For most apprenticeship training, you must be at least 16 years of age to enroll and have the approval of the Director of Apprenticeship. Each trade specifies minimum academic requirements, often including high school mathematics and sciences. High school is strongly recommended.
Apprenticeship Programs (continued)

Employment Potential

A person who successfully completes an apprenticeship is granted a certificate of qualification in their trade. This certificate identifies the holder as a journeyperson and is recognized by employers and the public. In many trades, the certificates are officially recognized in other provinces and jurisdictions.

For further information on apprenticeship training, please see the Apprenticeship programs brochure or contact the Apprenticeship office nearest you.

Room 106A, 340-9th Street
Brandon R7A 6C2
Phone: 204-726-6365

Room 137, 27-2nd Avenue SW
Dauphin R7N 3E5
Phone: 204-622-2091

B22-25 Tupper Street N
Portage la Prairie R1N 3K1
Phone: 204-239-3579

Otineka Mall, Box 2550
The Pas R9A 1M4
Phone: 204-627-8290

Room 110-59 Elizabeth Drive
Thompson R8N 1S7
Phone: 204-677-6663

816-401 York Avenue
Winnipeg R3C 0P8
Phone: 204-945-3337 Fax: 204-948-2346

Toll-free from rural Manitoba: 1-800-282-8069
Automotive Service Education

Purpose
To develop the knowledge and skills required to prepare potential automotive technicians for a career in the automotive field.

Program
The Automotive Service Education program is an 80-week apprenticeship course with entry dates determined by applicant demand. The student spends 40 weeks at Red River Community College and 40 weeks with a sponsoring General Motors of Canada dealership on an eight-week alternating basis. Upon successful completion of both the in-college and dealership training, and a two-year period of employment in a GM dealership, the graduate will be entitled to write the Inter-Provincial Standards Examination. The program is designed to develop basic generic knowledge and skills for all phases of vehicle repair; specialized knowledge and skills on General Motors design maintenance repair; and high standards in workmanship, safety and customer consideration.

Please note that although the Automotive Service Education Program is similar to the College’s Motor Vehicle Mechanic – Work Experience program, the entrance requirements are higher and the amount of time required to earn apprenticeship credits is shorter.

Entrance Requirements
- Manitoba Grade 12/Senior 4;
  and
- successful completion of a prescribed reading skills test.

Employment Potential
This program is an accelerated apprenticeship program where all of the students are employed by a General Motors of Canada dealership before the students are registered as apprentices by the Department of Education and Training, Apprenticeship Division of Manitoba.
## Automotive Service Education (continued)

### Program Outline

#### Level 1

- T01-A101 Safety – Theory
- T01-A102 Shop Tools
- T01-A103 Service Manual and Bulletins
- T01-A104 Engine Principles
- T01-A107 Electrical Engine
- T01-A108 Special Electronics Training
- T01-A110 Science
- T01-A114 Mathematics
- T01-A116 Public Relations

#### Level 2

- T01-A112 Communications
- T01-A202 Engine Electronic Controls
- T01-A204 Carburation Basics
- T01-A206 Electronic Fuel and Emission Management
- T01-A207 Windshield Wiper Systems
- T01-A208 Automatic Transmissions Basics
- T01-A212 Vehicular Brakes and Assist Systems
- T01-A426 Body Mechanical Adjustments
- T13-M210 Automotive Related Math
- T13-S210 Automotive Related Science

#### Level 3

- T01-A216 Welding – Oxyacetylene
- T01-A314 Suspension Steering and Alignment
- T01-A320 Air Conditioning Principles
- T01-A324 Introduction to Clutches and Standard Transmission
- T01-A326 Related Science
- T01-A328 MIG and TIG Welding
- T01-A511 Introduction to Antilock Brake Systems

#### Level 4

- T01-A316 Advanced Automatic Transmission
- T01-A322 Engine Diagnosis and Light Repair
- T01-A402 Cruise Control
- T01-A404 Diesel Engine Fuel and Emissions
- T01-A406 Diesel Electronic Control
- T01-A424 Differential and Drivelines
- T01-A505 Supplemental Restraint Systems

#### Level 5

- T01-A410 Air Brakes
- T01-A416 AC and Heating Electronic Controls
- T01-A425 Electrical Options and Accessories
- T01-A502 Advanced Computer Systems Diagnosis
- T01-A513 Advanced Transmission and Drive Trains
- T01-A514 Current Year New Product Training
- T01-A515 Advanced Automatic Transmission and Drive Trains
- T01-A517 Advanced Antilock Brakes and Traction Control
Biomedical Engineering Technology

Purpose
To provide qualified technologists with the knowledge, skills, and attitudes required to function as Biomedical Engineering Technologists (BMET).

Program
The curriculum is based on the Biomedical Engineering Technology certification examination topics defined by the International Certification Commission (ICC).

Biomedical Engineering Technology is offered as a part-time program. Classes are held from 4:30 - 7:30 p.m. on Tuesdays and Thursdays, and on selected Saturday mornings for four terms (Fall, Winter, Spring, Fall) of 13 weeks; and a fifth term (Winter) including a practicum in collaborating hospitals. The schedule may be changed to accommodate needs. The first term begins in September.

The program is designed as a series of courses focused on the technical knowledge and interpersonal skills required by the Biomedical Engineering Technologist to fulfill his or her role in the modern health care environment. Students with experience in particular topics may elect to challenge the examinations for those courses, and attend only the courses they require. Qualified students with special interests may select particular courses. Some courses may be of particular interest to students from other disciplines.

Entrance Requirements
- graduation with a two-year technical diploma in electronics technology from a recognized technical institute or community college; or
- graduation with a three-year or four-year degree in a technical, scientific or engineering discipline from a recognized university or society; or
- equivalent experience and knowledge.

A strong background in electronic instrumentation, physics and English is required. The program requires the student to have a good understanding of electronic circuits, measurement and troubleshooting, so that he or she can relate to biomedical equipment and its application.

Qualified applicants will be accepted on a first-come, first-served basis and assessed on the following criteria:
- transcript(s) from academic institution(s) attended to verify academic suitability;
- certification from an accredited organization, association or society; or verified work experience;
- letters of reference from current or former employers, as requested;
- an interview with the appropriate technical department Chair and/or a Program Admissions Committee may be requested.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent

Continued on next page
Biomedical Engineering Technology (continued)

Entrance Requirements (continued)
the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

*Note: Please submit applications by August 1 with transcripts and any other proof of completion of entrance requirements.*

Employment Potential
Graduates who are registered by a provincial authority (e.g., MANSCEYfl, and have two years of clinical experience, will be eligible to write the International Certification Commission (ICC) qualifying examinations for BMET certification given by the Canadian Board of Examiners for Biomedical Engineering Technologists and Technicians. Biomedical Engineering Technologists are employed in hospitals and in industry in Manitoba and across Canada.

Program Outline

**YEAR 1**

*Term 1*
September – November
H04-A107 Anatomy and Physiology

*Term 2*
December – March
H04-A201 Patient Care and Procedures
H04-A202 Medical Biophysics and Biochemistry
H04-A203 Hazards and Safety Regulations and Standards
H04-A204 Sensors, Measurement, Treatments

*Term 3*
March – June
H04-A301 Operation, Care of Biomedical Equipment – A
H04-A302 BMET Practice
  - BMET Roles and Relationships
  - Identifying and Solving Problems
  - Interpersonal Skills
  - Structure and Function of Organizations
  - Performance Assurance of Medical Equipment
  - The BMET Department

**YEAR 2**

*Term 4*
September – November
H04-A401 Operation, Care of Biomedical Equipment – B
H04-A402 Operation, Care of Biomedical Equipment – C

*Term 5*
December – March
H04-A501 Practicum
H04-A502 Review and Preparation for BMET Certification Examination
Business Accountancy

Purpose
To develop a thorough working knowledge of fundamental financial and cost accounting. Graduates are capable of maintaining a complete set of accounting records in a business environment with the use of a microcomputer.

Program
Business Accountancy is a 10-month certificate program with a September entry date. The program is designed to provide a thorough working knowledge of accounting systems and procedures to enable the graduate to maintain a complete set of records for most types of businesses.

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with English 200/30S or 201/30G and Mathematics 200/30S or 201/30G;

or

- Adult Basic Education 11B.

In order to inform applicants about their career choice, applicants will be invited to attend an information session. While attendance is not compulsory, the College and the program staff encourage applicants to take advantage of this opportunity.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Employment opportunities will vary, depending upon your personal preferences, ability and prior work experience. Most graduates have found employment as accounting technicians in wholesale, retail, or manufacturing firms, in financial departments of banks and trust companies, or in private clubs, schools or professional sports associations. Some graduates have been accepted for positions as full-fledged accountants, and others have been hired by public accounting firms. Graduates may be eligible to receive some advanced standing in programs offered by the Society of Management Accountants and the Certified General Accountants Association (Manitoba).

Continued on next page
# Business Accountancy (continued)

## Program Outline

### Term 1
- B11-A103 Business Mathematics B U A C
- B11-A161 Financial Accounting A
- B12-L360 Business Law
- B12-O333 Principles of Organization and Management
- B17-E811 Basic Business Communication

### Term 2
- B11-A204 Cost Accounting A
- B11-A261 Financial Accounting B
- B11-A495 Microcomputer Accounting (GL)
- B15-S213 Microcomputer Productivity Software 1
- B17-E822 Intermediate Business Communication

### Term 3
- B11-A304 Cost Accounting B
- B11-A361 Financial Accounting C
- B11-A595 Microcomputer Accounting (AP and AR)
- B15-S313 Microcomputer Productivity Software 2
- B17-E833 Advanced Business Communication
Business Accountancy Integrated

Purpose
To develop a thorough working knowledge of fundamental financial and cost accounting. Graduates are capable of maintaining a complete set of accounting records in a business environment with the use of a microcomputer.

Program
Business Accountancy Integrated is a 12-month certificate program with a December entry date. This integrated program is designed for applicants who do not meet the entrance requirements for the 10-month Business Accountancy program, and integrates the required academic programs to bring the student to an Adult 11 level. The modified pace in the first three terms allows additional time for meeting individual needs. Term 4 will be identical in pace and content to the 10-month Business Accountancy program's final term.

The program is designed to provide a thorough working knowledge of accounting systems and procedures to enable the graduate to maintain a complete set of records for most types of businesses.

Entrance Requirements
A – Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and English 100/20S or 101/20G;

or

– Adult Basic Education 10 program with supplemental mathematics and communications modules;

and

B – acceptable performance on entrance tests, administered by the College, which survey basic skills in mathematics, language, and reading.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects and must meet entrance requirements B as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Employment opportunities will vary, depending upon your personal preferences, ability and prior work experience. Most graduates have found employment as accounting technicians in wholesale, retail, or manufacturing firms, in financial departments of banks and trust companies, or in private clubs, schools or professional sports associations. Some graduates have been accepted for positions as full-fledged accountants, and others have been hired by public accounting firms.

Graduates may be eligible to receive some advanced standing in programs offered by the Society of Management Accountants and the Certified General Accountants Association (Manitoba).

Continued on next page
Business Accountancy Integrated (continued)

Program Outline

Term 1
B11-A105 Business Mathematics — Term 1
B11-A162 Introductory Accounting — Term 1
B12-L199 Business Law 1 (BA)
B17-E651 Introduction to Communication
B18-T100 Keyboarding for Information Processors

Term 2
B11-A106 Business Mathematics — Term 2
B11-A163 Introductory Accounting — Term 2
B11-A205 Cost Accounting Principles and Applications — Term 2
B15-S214 Microcomputer Productivity Software 1
B16-E811 Basic Business Communication

Term 3
B11-A206 Cost Accounting Principles and Applications — Term 3
B11-A262 Introductory Accounting — Term 3
B11-A495 Microcomputer Accounting (GL)
B12-O333 Principles of Organization and Management
B16-E822 Intermediate Business Communication

Term 4
B11-A304 Cost Accounting B
B11-A361 Financial Accounting C
B11-A595 Microcomputer Accounting (AR and AP)
B15-S313 Microcomputer Productivity Software 2
B16-E833 Advanced Business Communication
Business Administration

Purpose
To develop a potential for supervision and management through the study of business-related courses and practical projects.

Program
Business Administration is a two-year diploma program with a September entry date. The program is designed to provide a broad general business background so that the graduate may choose a career from a variety of job opportunities in the business community. Students may specialize to some degree in either Accounting or Marketing.

The co-operative education option aims at an effective blend of classroom study and off-campus work experience in a program-related industry. The co-operative education student spends alternate three-month periods in the work force and is paid a salary or hourly rate. The program comprises seven continuous terms: five on campus and two employment terms.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S or 301/40G and Mathematics 300/40S or 301/40G. (Standing in Mathematics 300/40S is recommended.); or
- Adult Basic Education 11B, with supplemental mathematics modules.

In order to inform applicants about their career choice, applicants will be invited to attend an information session. While attendance is not compulsory, the College and the program staff encourage applicants to take advantage of this opportunity.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Many graduates have been accepted into management-training programs with department stores, banks, insurance companies and financial institutions. Graduates interested in accounting have found work in federal and provincial finance and taxation departments. Others have found rewarding careers in small businesses. Some graduates have even gone on to start their own enterprises.

Please see the Business Administration program brochure for information regarding transfer of credit to university, certified accounting programs and the Credit Union Institute of Canada.
Business Administration (continued)

Program Outline

YEAR 1

Term 1
B11-A191 Introductory Accounting A
B12-E171 Economic Principles BA 1
B13-M612 Introduction to Business BA
B13-R713 Business Mathematics
B15-S213 Microcomputer Productivity Software 1
B16-E841 Basic Business Communication

Term 2
B11-A291 Introductory Accounting B
B12-E272 Economic Principles BA 2
B13-R703 Financial Mathematics
B14-M101 Basic Marketing
B15-S313 Microcomputer Productivity Software 2
B16-E852 Intermediate Business Communication

Term 3
B11-A391 Introductory Accounting C
B12-E373 Economic Principles BA 3
B13-R706 Statistics 1
B13-S513 Human Behavior in Organizations
B14-M202 Basic Marketing
B16-E843 Advanced Business Communication

YEAR 2

Term 4
Compulsory courses:
B12-L360 Business Law 1
B13-R707 Statistics 2

Students will elect any four of the following courses:
B11-A491 Intermediate Accounting A
B11-A495 Microcomputer Accounting (GL)
B12-E472 International Economics and Business
B12-E670 Public Finance
B13-R708 Business Finance
B13-S501 Psychology
B14-C401 Consumer Behavior
B14-S401 Personal Selling

Term 5
Compulsory courses:
B12-P555 Entrepreneurship
B13-M624 Politics and Government in Canada

Students will elect any four of the following courses:
B11-A507 Cost and Management Accounting A
B11-A591 Intermediate Accounting B
B12-E471 Economic Issues in Canada
B12-L466 Business Law 2
B13-M613 Human Resource Management
B13-M614 Canadian Real Estate
B13-R701 Production Management and Quality Control
B13-R705 Quantitative Methods
B13-S544 Sociology
B14-M601 Merchandising
B14-R602 Marketing Research

Term 6
Compulsory courses:
B12-P666 Entrepreneurship Practicum
B13-M602 Management

Students will elect any four of the following courses:
B11-A607 Cost and Management Accounting B
B11-A691 Intermediate Accounting C
B12-E580 Industrial Relations
B12-E675 Manitoba Economic Perspectives
B12-I491 Risk and Insurance
B13-M618 Credit Management
B13-M623 Cooperative Enterprise
B13-R709 Securities Investments
B14-A501 Advertising
B14-M603 International Marketing
B15-S601 Microcomputer Data Base

Please note that not all elective courses listed are offered each year.
Purpose
To develop a potential for supervision and management through the study of business-related programs and practical projects.

Program
Business Administration Integrated is a three-year diploma program with an August entry date. This integrated program is designed for applicants who do not meet the entrance requirements for the two-year Business Administration program. The modified pace in the first two years allows additional time for upgrading study and for meeting individual needs. Sponsored students are expected to take a third-year elective in the summer during July to lighten their workload in the third year. The third year of the program is similar in pace and content to the second year of the regular Business Administration program, and students from both programs attend the same classes.

The program is designed to provide a broad general business background so that the graduate may choose a career from a variety of job opportunities in the business community. Students may specialize to some degree in either Accounting or Marketing.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation, with Mathematics 100/20S or 101/20G and English 100/20S or 101/20G;
- Adult Basic Education 10 with supplemental mathematics and communications modules;
- GED 12 accepted.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Many graduates have been accepted into management training programs with department stores, banks, insurance companies and financial institutions. Graduates interested in accounting have found work in federal and provincial finance and taxation departments. Others have found rewarding careers in small businesses. Some graduates have even gone on to start their own enterprises.

Please see the Business Administration Integrated program brochure for further information on transfer of credit to university and certified accounting programs.
**Business Administration Integrated (continued)**

**Program Outline**

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Please note that not all elective courses listed are offered each year.

**YEAR 2 — Term 4**

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**Term 6**

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Please note that not all elective courses listed are offered each year.
Business Teacher Education

Purpose
To develop teaching and technical skills in general business practices and in an area of specialization selected from options of marketing, accounting or secretarial.

Program
Business Teacher Education is a four-year Red River Community College and University of Manitoba integrated Bachelor of Education degree program with a September entry date. Emphasis is directed at developing the knowledge and skills in the areas of general business and the area selected from the specializations of marketing, accounting or secretarial. Technical skills in typewriting, accounting and computer applications combined with teaching methodology in business are components of the program.

Entrance Requirements
The following criteria are used in selecting applicants for admission based on high school credentials: satisfactory standing in Grade 12/Senior 4 which satisfies the Manitoba Education and Training requirements for high school graduation, with five of these credits held at the Senior 4 level, so that these five include:

A - a standing in English 300/40S and Mathematics 300/40S or 301/40G;
B - four different subject areas;
C - a minimum of three subjects at the 300/40S level;
D - a 60% average in English 300/40S and any two other 300/40S level subjects.

Note: Applicants who have completed course work in any university or college degree or diploma program are considered transfer applicants and must have a minimum cumulative grade point average of 2.0 in their university and/or college course work.

Mature Student Admission. Applicants who do not meet these education requirements, but are 21 years of age on or before September 30 in the year of registration, may apply as mature students. Mature applicants, without Grade 12/Senior 4 standing, may be required to achieve a Grade 12/Senior 4 standing on the General Educational Development (GED) test. Mature students are strongly advised to include formal course work in mathematics and English at the 300/40S or 301/40G level as part of their preparation for College.

Applications from mature students will be reviewed on an individual basis. All applicants will be interviewed by the Admissions Committee and are required to complete a written communications skills test. The College will notify you of time, date and location.

Employment Potential
After successful completion of the Bachelor of Education degree program, you will be eligible for a Professional Teaching Certificate from Manitoba Education and Training. This allows you to teach in the secondary schools in Manitoba. Many of the job opportunities are available in rural areas of the province.

Continued on next page
**Business Teacher Education (continued)**

**Program Outline**

**YEAR 1**  
**Red River Community College**  
*Common core for all students:*

- B22-B112 Keyboarding and Basic Formatting  
- B22-B113 Word Processing and Advanced Formatting  
- B22-B116 Fundamentals of Accounting  
- B22-B120 Data Processing 1  
- B22-B205 Management Accounting Systems  
- B22-B208 Business Organization and the Consumer  
- B22-B220 Data Processing 2  
- B22-T111 Seminar and School Experience  
- B23-W102 Co-operative Business/Industrial Education  

**Secretarial Specialty**  
B22-B110 Shorthand  

**Accounting and Marketing Specialty**  
B22-M102 Marketing  

**YEAR 2**  
**University of Manitoba**

- 43.202 Psychology of Learning and Instruction  
- 81.216 Principles of Business Education  
- 81.217 Teaching Business/Industrial Organization  
- 63.202 Communication Skills  
- 116.101 Social Foundations of Education  
- 116.301 School Organizations  
- 27.330 Commercial Law  
- 18.120 Principles of Economics  
- 9.111 Introductory Managerial Accounting  
- 27.203 Administrative Theory  

Six credit hours of course work for second teachable or in-depth business specialization. (See requirements for Second Teachable Minor.)

**YEAR 3**  
**Red River Community College**  
*Common core for all students:*

- B22-B209 Intermediate Accounting  
- B22-B222 Records Management  
- B22-E203 Course Development in Business Education  
- B22-E204 Educational Testing and Evaluation  

- B22-E212 Teaching Typewriting and Office Systems Management  
- B22-E213 Methods of Teaching Basic Business  
- B22-E220 Methods of Teaching Accounting and Data Processing  
- B22-T211 Student Teaching  

**Secretarial Specialty**  
B22-E222 Comparative Shorthand Systems  

**Accounting Specialty**  
B22-B210 Intermediate Accounting 2  

**Marketing Specialty**  
B22-E209 Methods of Teaching Retailing  

**YEAR 4**  
**University of Manitoba**

- 81.306 Topics in Business Education: Information Processing  
- 81.310 Microcomputers Applications in Occupational Education  
- 81.408 Curriculum Development in Business Education  
- 81.409 Issues in Business Education  

Eighteen credit hours of course work selected in consultation with faculty advisors in a second teachable minor or in-depth business education minor. (See requirements for Second Teachable Minor.)

**Second Teachable Minor**

Second teachables in any one of the following subject areas which will serve as a second teaching area in the public school, or the in-depth business specialization in advanced Faculty of Management courses, can be developed with your advisor at the University of Manitoba:

- Art  
- English  
- Geography  
- Physics  
- Biology  
- French  
- German  
- Spanish  
- Chemistry  
- Theatre  
- Ukrainian  
- General Science  
- Computer Science  
- History/Canadian Studies  
- In Depth Business Education – Specialization in business courses.

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*B - 32*
Program
Carpentry and Woodworking is a 10-month certificate program with September and February entry dates. The program has been designed to develop the basic skills of carpentry and woodworking required to enter an apprenticeship program in carpentry.

The aim of the program is two-fold. Students just starting in the trade can, after completing the program successfully, enter the apprenticeship program. Students who have worked previously in the trade, and have the required practical experience, can apply on graduation to write the Provincial Examination under the Apprenticeship and Tradesmen's Qualification Act.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended; or
- Adult Basic Education 10 program completion.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Past employment records show a high percentage of graduates are working in program-related fields all across Canada. Opportunities have been found in commercial construction, housebuilding, factories or cabinet-making shops. Almost all graduates choose to enter the apprenticeship program. Graduates who reach journeyman apprenticeship level may progress to foremen, supervisors, building inspectors, draftspersons, estimators, superintendents or specialists in related fields.

For further information on apprenticeship and possible transfer of credit, please see the Carpentry and Woodworking program brochure.
# Carpentry and Woodworking (continued)

## Program Outline

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<td>T02-C002</td>
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<td>Woodworking Machines — Theory</td>
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<td>WHMIS Workshop</td>
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<td>T14-C504</td>
<td>Communication</td>
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Chef Training

Purpose
To develop the skills and related requirements for advanced food preparation and supervision of staff.

Program
Chef Training is a nine-month certificate program with an August entry date. The program has been designed to develop basic management capability and to provide training in advanced cooking skills. The curriculum is delivered on a competency-based learning (CBL) basis. CBL is a modularized approach to learning which allows a moderate degree of self-pacing. It requires initiative in planning a study schedule, completing requirements in a reasonable time, and in managing time wisely and effectively to meet deadlines.

Entrance Requirements
A – Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with English 100/20S or 101/20G, Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G;

or

– Adult Basic Education 10 program completion;

and

B – completion of a basic cooking program (e.g., Commercial Cooking) or a minimum of two years of general, comprehensive cooking experience in the industry;

and

C – successful completion of the prescribed, written achievement test, and/or a personal interview;

and

D – submission of medical and dental certificates attesting to good health (required after an applicant receives notice of acceptance).

In order to inform applicants about their career choice, applicants will be invited to attend an information session. While attendance is not compulsory, the College and the program staff encourage applicants to take advantage of this opportunity.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects and must meet entrance requirements B through D as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment in hotels, restaurants, private clubs and resorts and in institutions and catering companies. Statistics indicate that Chef Training graduates generally earn a higher hourly rate than cooking program graduates who have not taken this program.

Continued on next page
Chef Training (continued)

Program Outline

B09-F103  Food Safe Course*
B11-A218  Accounting Chef
B13-S514  Human Behavior in Organizations (HRA)
B30-A305  Nutrition
B33-BX01  Practical 1
B33-DX01  Practical Pastry
B33-0A00  Demonstrate Chef Training Prerequisites
B33-0A01  Explain Basic Sanitation Principles and Procedures
B33-0A02  Explain Basic Kitchen Safety Rules and Procedures
B33-0A03  Explain Safe and Efficient Use of Kitchen Equipment
B33-0A04  Use Kitchen Knife Safely and Efficiently
B33-0A05  Explain Standard Recipes, Measures, and Calculate Conversions
B33-0B00  Demonstrate Food Preparation Skills
B33-0B01  Identify Elements Essential to Food Products
B33-0B02  Explain Seasonings, Flavorings, Herbs, Spices
B33-0B03  Explain the Preparation of Basic Stocks
B33-0B04  Prepare Soups
B33-0B05  Prepare Sauces
B33-0B06  Cook Vegetables, Rice, Pasta and Dumplings
B33-0B07  Cook Meat, Fish and Poultry
B33-0B08  Debone, Cut and Portion Meat, Fish and Poultry
B33-0B09  Describe Preparation of Typical Breakfast Items
B33-0B10  Describe the Use of Dairy Products
B33-0B11  Prepare Coffee and Tea
B33-0D00  Serve Food and Beverage in Dining Room
B33-0D05  Serve Customers
B33-0D06  Dining Room Sanitation and Safety
B33-0D07  Set Up and Serve Food and Beverages in Dining Room
B33-0E00  Prepare Patisserie Items
B33-0E01  Identify Baking Ingredients
B33-0E02  Prepare Yeast and Raised Goods
B33-0E03  Prepare a Variety of Pastries
B33-0E04  Prepare Cakes, Sweets and Desserts
B33-0F00  Describe Elements of Cost Control of Kitchen Management
B33-0F01  Control Mechanisms/Record Food Items Sold
B33-0F02  Explain Elements of Purchasing/Inventory Control
B33-0F03  Identify Purchasing Criteria for Food
B33-0F04  Describe Receiving, Storing and Issuing Procedures
B33-0F05  Calculate Recipe Costs, Portion Costs, Etc.
B33-0G00  Prepare Garde Manger Items
B33-0G01  Prepare Sandwiches
B33-0G02  Prepare Salads and Dressings
B33-0G03  Prepare Appetizers
B33-0G04  Buffet Preparation and Services
B33-0H00  Explain Management of Human Resources
B33-0H01  Describe Basic Concepts of Personnel Management
B33-0H02  Perform Job Analysis/Description/Specification
B33-0H03  Recruit and Select Employees
B33-0H04  Explain Hotel/Restaurant Training and Development
B33-0H05  Evaluate Employee Performance
B33-0H06  Explain Factors Affecting Labor Costs
B33-0I00  Design Menu and Kitchen Layout
B33-0I01  Develop Menu
B33-0I02  Design Layouts of Kitchen Equipment
T13-W100  WHMIS Workshop

*Food Safe Course is delivered by the City of Winnipeg; registration fee is $22 (subject to change without notice).
Chemical and Biosciences Technology

Purpose
To meet the ever-increasing need for individuals who can play an active role in a laboratory setting supporting research, testing and production.

Program
Students in the program will learn the traditional chemical techniques as well as advanced instrumentation methods and new techniques in biotechnology.
The program will prepare graduates to work as technologists in the following major areas: analytical analysis, research chemistry, quality assurance and biotechnology such as molecular biology and recombinant DNA technology.
Chemical and Biosciences Technology is a two-year program with a September entry date. The program is divided into eight terms, two of which are co-operative education work placements. The work placements are scheduled for Term 4 (June, July, August) and Term 7 (March, April, May). The program will not have summer breaks. The paid work placements will provide students with first-hand knowledge of a working laboratory in industry and a chance to use their acquired skills productively.
The program will focus on the applied laboratory skills graduates will need to satisfy the requirements for qualified laboratory staff in drug, environmental, food, health and other industrial lab settings.

Entrance Requirements
- Manitoba Grade 12/Senior 4 with English 300/405 or 301/400, Mathematics 300/405 and two sciences at the 300/405 level. Chemistry is highly recommended.
  or
- Adult Basic Education Pre-Technology/Adult 12.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates may find employment as technologists in the following areas: analytical analysis, research chemistry, quality assurance and biotechnology such as molecular biology and recombinant DNA technology.

Continued on next page
## Program Outline

### YEAR 1

#### Term 1
- T07-A103 Introductory Biology
- T07-A104 Mathematics
- T07-A106 Instrumentation Principles 1
- T07-A140 General Chemistry
- T07-A141 Workplace Safety
- T14-A104 Writing and Study Skills

#### Term 2
- T07-A111 Analytical Chemistry
- T07-A117 Instrumentation 1
- T07-A142 Computer Applications
- T07-A144 Anatomy/Physiology
- T07-A145 Organic Chemistry 1
- T14-A105 Business Communications

#### Term 3
- T07-A112 Microbiology
- T07-A113 Organic Chemistry 2
- T07-A115 Biochemistry 1
- T07-A116 Data Analysis 1
- T07-A120 Instrumentation 2
- T14-A103 Critical Thinking/Problem Solving

#### Term 4
- T07-A119 Co-op Work Term

### YEAR 2

#### Term 5
- T07-A201 Instrumentation 3
- T07-A202 Biochemistry 2
- T07-A203 Microbiology 2
- T07-A204 Tissue Culture/Virology
- T07-A205 Organic Chemistry 3
- T07-A206 Data Analysis 2
- T14-A203 Oral Communications

#### Term 6
- T07-A207 Applied Microbiology
- T07-A208 Biochemistry 3
- T07-A209 Quality Assurance
- T07-A210 Molecular Biology
- T07-A211 Immunology
- T07-A220 Microtechniques (Laboratory)
- T14-A601 Interpersonal Communications

#### Term 7
- T07-A212 Co-op Work Term

#### Term 8
- T07-A214 Advanced Lab Techniques
- T07-A215 Environmental Chemistry/Toxicology
- T07-A216 Resource Management
- T07-A217 Occupational Hygiene
- T07-A218 Professional Ethics/TQM
- T07-A219 Sustainable Development Issues
Civil Engineering Technology

Purpose
Civil Engineering Technology is a 30-month diploma program with a September entry date. The program is designed to develop the skills needed to assist engineers in the design and construction of municipal services and roadways, soil mechanics theory and testing, open channel flow hydraulics and hydrology, and the theory and use of photogrammetry.

Program
The Civil Engineering Technology program group consists of the Engineering Design and Construction, Municipal, Structural and Survey programs. Co-operative Education, which integrates two six-month terms of paid employment with six terms of classroom theory, are included in all of these programs. Red River Community College offers Co-operative Education as part of its education strategy to enhance students’ career training opportunities.

All applications will be processed for entry into Civil Engineering Technology. Students who successfully complete the first year of studies in Civil Engineering Technology may then apply for entry into one of the program options listed above. In order to proceed in Co-operative Education terms, students must meet departmental academic requirements.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;  
- Adult Basic Education Pre-Technology/Adult 12.

*Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment with consulting engineering companies and various government departments and agencies in the design and construction of sewer and water projects, highway projects, and earth-retaining and hydraulic structures. Other graduates are employed in equipment and material sales and in the research and manufacture of construction-related products.
Civil Engineering Technology (continued)

Program Outline

YEAR 1
Term 1
CIV-C192  Engineering Graphics 1
CIV-C193  Computer-Assisted Drafting 1
CIV-C195  Mechanics 1
CIV-C196  Surveying 1
CIV-C197  Communications
CIV-C199  Mathematics 1
T13-W100  WHMIS Workshop

Term 2
CIV-C292  Engineering Graphics 2
CIV-C293  Computer Assisted Drafting 2
CIV-C295  Strength of Materials 1
CIV-C296  Surveying 2
CIV-C297  Report Writing
CIV-C299  Calculus 1

Term 3
CIV-W300  Co-op Work Placement
College Preparation for Aboriginal Students

Purpose
To assist Aboriginal students in the development of mathematics, communications, physical science and professional skills.

Program
College Preparation for Aboriginal Students is a 10-month (or less) program with an August entry date. The program is designed to assist students to develop mathematics, science, communications and professional skills to pursue further education or training.

College Preparation for Aboriginal Students – Adult 10 will give you the chance to get enough academic skills to meet Adult 10 entrance requirements for Manitoba community college programs. Although mathematics and communications will be emphasized, science will be taught when required for occupational goals.

Adult 11. There are three Adult 11 programs: Adult 11A, which is science-based; Adult 11B, which is business-based; and Adult 11C. Each program has been designed as a preparation for a different educational and occupational goal. To ensure that you choose the right Adult 11 program you should check the entrance requirements for the college program you wish to take when finished upgrading.

Adult 11A will prepare you to enter the one-year science-based programs at the College.

Adult 11B will prepare you to enter the one-year and two-year business and applied arts programs at the College.

Adult 11C will prepare you to enter the Dental Assisting Program at the College.

Adult 12 is a science-based program and is a follow-up to the Adult 11A science-based program. It will prepare you to meet the entrance requirements of the two-year technology programs at the College.

Entrance Requirements
A – successful completion of the Level Placement Test with appropriate scores; 

and

B – be at least 17 years of age; 

and

C – participate in a selection process.

Employment Potential
Graduates have found that they are more confident and better prepared for further training at the College.
College Preparation for Aboriginal Students (continued)

Program Outline

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<th>Adult 10</th>
<th>Adult 11A</th>
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<td>S02-D240 Computer Awareness Training – Core</td>
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<td>L96-D101 Sentence Structure A</td>
<td>S02-D241 Computer Awareness Training – Keyboarding (optional)</td>
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<td>L96-D102 Sentence Structure B</td>
<td>S03-K001 Communications</td>
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<td>L96-D103 Usage</td>
<td>S03-L001 Mathematics</td>
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<td>L96-D104 Punctuation and Capitalization</td>
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<td>L96-D507 Life Science A</td>
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| Adult 11B | |
| S03-N001 Business Communications | |
| S03-N003 College Study Skills | |
| S03-N005 Basic WordPerfect | |
| S03-N006 Computer Keyboarding | |
| S03-O001 Business Mathematics | |
| S03-P001 Business and Consumer Fundamentals | |

| Adult 11C | |
| S02-D240 Computer Awareness Training – Core | |
| S02-D241 Computer Awareness Training – Keyboarding (optional) | |
| S03-K001 Communications | |
| S03-L001 Mathematics | |
| S03-L004 Science (Chemistry) | |
| S03-N003 College Study Skills | |

| Adult 12 | |
| S02-D240 Computer Awareness Training – Core | |
| S02-D241 Computer Awareness Training – Keyboarding (optional) | |
| S03-N003 College Study Skills | |
| S03-Q001 Communications | |
| S03-R002 Mathematics 300 | |
| S03-S001 Science 300 (Physics) | |
| S03-S002 Science 300 (Chemistry) | |
| T13-W100 WHMIS Workshop | |
College Preparation for Nursing

Purpose
To acquire the academic skills needed to enter the Nursing program.

Program
College Preparation for Nursing is a 10-month certificate program with an August entry date. The program is designed to enable mature applicants who do not meet the educational requirements for Nursing, to acquire the developmental skills to enter the program. It integrates the required academic courses to bring the student to an Adult 12 level with some of the courses from the first year of the Nursing program.

Entrance Requirements
A – Manitoba Grade 10/Senior 2 or equivalent secondary school preparation;
    or
    – Adult Basic Education 10;
    and
B – completion of the additional information sheets;
    and
C – successful completion of the Level Placement tests for entry-level competencies in mathematics and reading skills;
    and
D – a personal interview with the Selection Committee.

Program Outline
H11-N120  Human Anatomy and Physiology
H11-S101  Social Science
H11-S201  Social Science
H11-S301  Social Science
S02-C116  Reading and Study Skills
S02-C122  English 40S
S03-R001  Mathematics 40G
S03-S002  Science (Chemistry 40S)
S03-S004  Pre-Nursing Science
T13-W100  WHMIS Workshop
Collision Repair and Refinishing

Purpose
To develop the skills and knowledge required to repair damaged vehicles, including all phases of auto-body repair and painting.

Program
Collision Repair and Refinishing is a 10-month certificate program with a September entry date. The program is designed to provide a basic working knowledge of all areas of metal working and spray painting.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended;
- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Many graduates have found employment as autobody mechanics, metal finishers, painters and body-frame specialists. Others are employed as claims adjusters, collision estimators or shop supervisors.

For further information on apprenticeship and possible transfer of credit, please see the Collision Repair and Refinishing program brochure.

Program Outline

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<td>Advanced Metal Working and Rust Repair</td>
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<td>T01-A032</td>
<td>Frame Repair and Estimating</td>
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<td>T01-A033</td>
<td>Major Body Alignment, Weld-on Panel Replacement</td>
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<td>T01-A058</td>
<td>Vehicle Construction, Hardware, Glass and Trim</td>
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<td>T01-A059</td>
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<td>WHMIS Workshop</td>
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<td>T14-C001</td>
<td>Communication</td>
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</table>

B - 44
Commerce/Industry Sales and Marketing

Purpose
To develop the knowledge and personal-selling skills required for the identification and solution of sales problems.

Program
Commerce/Industry Sales and Marketing is a 10-month certificate program with September and December entry dates. The program is designed to develop the necessary skills to become a successful salesperson: to deal effectively with people and to understand, organize, and solve sales problems in marketing programs and situations.

Each term of the program is a comprehensive program in itself, but represents a different level of achievement. A weighted grade point average of 2.0 is required in Terms 1 and 2 for progression to subsequent terms. Students who pass all courses in Term 1 but are not continuing to Term 2 are eligible for a Basic Business Certificate. Similarly, a pass in all Term 2 courses earns a Basic Sales Certificate for students not entering Term 3. Graduates of the complete 10-month program receive a Commerce/Industry Sales and Marketing certificate.

Entrance Requirements
- Manitoba Grade 12/Senior 4/40S or equivalent secondary school preparation with English 300/40S or 301/40G and Mathematics 200/30S or 201/30G;

- Adult Basic Education 11B.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates of this program have found employment as sales and marketing representatives in various industries including manufacturing and distribution of office supplies and equipment, food products, paper products, industrial goods and consumer goods.

Program Outline

Continued on next page
Commerce/Industry Sales and Marketing (continued)

Program Outline

Term 1
B13-S508  Human Behavior for Sales
B14-C114  Basic Marketing and Customer Behavior
B14-I117  Introduction to Business
B14-M161  Business and Financial Mathematics
B14-T118  "In Business" Training
B16-E123  Sales Communications

Term 2
B12-E292  Economics
B13-S509  Psychology of Selling
B14-M213  Advanced Marketing
B14-S211  Basic Sales
B14-T218  Advanced "In Business" Training
B15-S209  Computer Literacy 1
B16-E202  Advanced Sales Communications

Term 3
B14-D300  Marketing Decision Simulation
B14-L314  Canadian Business Law
B14-P319  Advertising and Promotion
B14-R312  Merchandising
B14-S311  Advanced Sales
B14-T318  "In Business" Sales Training
B15-S309  Computer Literacy 2
Purpose
To develop basic baking skills and related requirements through classroom instruction, practical lab training, and off-campus work experience.

Program
Commercial Baking is a 10-month certificate program with an April entry date. The program is designed to develop the skills required for employment in entry-level baking positions. It is noted for both its co-operative education component and its competency-based-learning (CBL) format.

Co-operative education aims at an effective blend of classroom study and off-campus work experience in program-related industry. This means that the student spends alternate two-month periods in the workforce and is paid an hourly rate.

CBL is a modularized approach to learning which allows a moderate degree of self-pacing. It requires initiative in planning a study schedule, completing requirements in a reasonable time, and in managing time wisely and effectively to meet self-imposed deadlines.

Entrance Requirements
A—Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with English 100/20S or 101/20G, Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G;

or

—Adult Basic Education 10;

and

B—an interview with a special selection committee;*

and

C—submission of recent medical and dental certificates attesting to good health (required after an applicant receives notice of acceptance).

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects and must meet entrance requirements B and C as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

*This is a special selection program. The committee looks for applicants who are adequately prepared, who have a sincere desire to work in the baking industry and who understand the demanding working conditions. Some work experience in a bakery or a related area is preferred.

Employment Potential
A graduate generally begins employment as a baker’s helper and may progress to a position with more advanced baking responsibilities within approximately one year. Job opportunities have been found in both large in-store bakeries and smaller bakery operations.

Continued on next page
Commercial Baking (continued)

Program Outline

B09-F103 Food Safe Course*
B31-CX01 Practical Yeast Goods
B31-DX01 Practical Muffins
B31-FX01 Practical Cakes
B31-XE01 Practical Pies and Tarts
B31-XE02 Practical Choux Pastry
B31-XG01 Practical Cookies
B31-0A00 Demonstrate Basic Baking Prerequisites
B31-0A01 Basic Sanitation Principles and Procedures
B31-0A02 Basic Bakeshop Safety Rules
B31-0A03 Safe and Efficient Use of Bakeshop Equipment
B31-0A04 Standardized Recipes and Conversions
B31-OB00 Basic Baking Ingredient Knowledge
B31-OB01 Typical Ingredients Used in Baking
B31-OC00 Prepare Yeast-Raised Goods
B31-OC01 Basic Methods to Prepare Yeast Goods
B31-OD00 Prepare Muffin-Type Products
B31-OD01 Basic Preparation for Muffin-Type Products
B31-OE00 Prepare Pies and Short Pastry
B31-OE01 Methods Used to Produce Pies and Tarts
B31-OE04 Preparation of Puff Pastry
B31-OF00 Prepare Cakes and Icings
B31-OF01 Identify Mixing Methods for Cakes
B31-OG00 Prepare Cookies
B31-OG01 Methods for Preparing Cookies
B31-OH00 Basic Management Functions
B31-OH01 Purchasing Functions
B31-OH02 Describe Receiving, Storing and Issuing
B31-OH03 Calculate Cost and Selling Prices
B31-OH04 Scheduling Staff and Production
B31-OH05 Explain the Role of Merchandising
B32-C206 On-the-Job Training
B32-C207 On-the-Job Training
B32-N506 Nutrition
T13-W100 WHMIS Workshop
T14-C502 Communications

* Food Safe Course is delivered by the City of Winnipeg; registration fee is $22 (subject to change without notice).
Commercial Cooking

Purpose
To develop basic cooking skills and related requirements through a blend of classroom instruction, practical lab training and off-campus work experience.

Program
Commercial Cooking is a 13-month certificate program with five entry dates: September, October, January, March and April. The program is designed to develop the skills required to function effectively in an entry-level cooking position in the industry. It is noted for its co-operative education component. The program comprises seven continuous terms: five on campus and two employment terms.

Co-operative education aims at an effective blend of classroom study, practical lab training and off-campus work experience. It goes beyond the traditional supplementary on-the-job training programs in that the student spends alternate two-month terms in the work force and is paid an hourly rate.

Entrance Requirements
A – Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with English 100/20S or 101/20G, Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G;

or

– Adult Basic Education 10;

and

B – an interview with a special selection committee*;

and

C – submission of a recent medical certificate attesting to good health (required after an applicant receives notice of acceptance).

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects and must meet entrance requirement B and C as outlined above. Mature students must be at least 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their applications a detailed resume and an official transcript, which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

* This is a special selection program. The committee looks for applicants who are adequately prepared, who have a sincere desire to work in the food preparation industry and who understand the demanding working conditions. Some related food service experience is preferred.
Commercial Cooking (continued)

Program Outline
B09-F103  Food Safety*
B32-AX10  Practical Basic Food Prep 1
B32-AX11  Practical Restaurant Cooking
B32-AX12  Practical Garde Manger
B32-AX13  Practical Basic Food Prep 2
B32-AX14  Practical Patisserie
B32-B010  Basic Food Prep 1
B32-B011  Restaurant Cooking
B32-B012  Garde Manger
B32-B013  Basic Food Prep 2
B32-B014  Patisserie
B32-B020  Food Costing
B32-B021  Menu Planning
B32-C206  On-the-Job Training
B32-C207  On-the-Job Training
B32-N509  Nutrition
T13-W100  WHMIS Workshop
T14-C502  Communication

*Food Safety Course is delivered by the City of Winnipeg; registration fee is $22 (subject to change without notice).
Communication Engineering Technology

Purpose
The purpose of the program is to develop the knowledge and skills required to specify, configure, implement, test, troubleshoot and repair communication systems.

Program
The Electronic Engineering Technology program group consists of Communication, Computer, Electrical, Electronic and Instrumentation Engineering Technology. These programs have a common first year of training. All applications will be processed for entry into Electronic Engineering Technology. Students who successfully complete the first year of studies in Electronic Engineering Technology may then transfer into one of the options listed above.

Communication Engineering Technology is a two-year diploma program with a September entry date. The program focuses on communications applications in analog electronics, wireless, digital computers, LANs, and industrial distributed systems.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S * or Physical Science 301/40G;

or

- Adult Basic Education Pre-Technology/Adult 12.

* Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Due to the increasing presence of communication systems in modern industry and commerce, graduates should find employment with a wide variety of companies in communications systems technical support, technical sales, servicing, and research and development. With appropriate further experience some graduates will achieve supervisory and managerial positions.

For information on possible transfer of credit, see the Communication Engineering Technology program brochure.

Continued on next page
Communication Engineering Technology
(continued)

Program Outline

YEAR 1
Electronic Engineering
Technology

Term 1
- ELE-E101 Electric Circuits
- ELE-E102 Electrical Instruments
- ELE-E104 Personal Computers 1
- ELE-E106 Drafting
- ELE-M102 Mathematics
- ELE-P109 Physics
- ELE-R100 Report Writing
- T13-W100 WHMIS Workshop

Term 2
- ELE-E201 Electric Circuits
- ELE-E202 Electrical Instruments
- ELE-E204 Personal Computers 2
- ELE-E207 Basic Electronics
- ELE-M202 Calculus
- ELE-P209 Physics
- ELE-R200 Report Writing

Term 3
- ELE-E301 Electric Circuits
- ELE-E303 Introductory Logic Circuits
- ELE-E305 Introductory Microprocessors
- ELE-E307 Basic Electronics
- ELE-M302 Calculus
- ELE-P309 Physics

YEAR 2
Communication Engineering
Technology

Term 4
- ELE-M442 Calculus
- ELE-T441 Communication Circuits
- ELE-T443 Digital Communications 1
- ELE-T444 Computer Systems
- ELE-T445 "C" Language Programming
- ELE-T447 Instrumentation Electronics

Term 5
- ELE-M542 Calculus
- ELE-M543 Statistics and Quality Control
- ELE-T541 High Frequency Circuits
- ELE-T543 Digital Communications 2
- ELE-T545 Digital Electronics
- ELE-T547 Introduction to PLC
- ELE-T546 Manufacturing Technology

Term 6
- ELE-E640 Report Writing
- ELE-T641 Circuits and Fields
- ELE-T643 Computer Networks
- ELE-T645 Technical Project
- ELE-T647 Industrial Communications Applications
- ELE-T624 Computer Systems 3
Computer Analyst/Programmer

Purpose
To provide students with training in problem recognition, analysis and solution as applied to business data processing. The graduate will be familiar with a variety of computer languages, the principles of business and advanced topics of data processing.

Program
Computer Analyst/Programmer is a two-year diploma program with three entry dates: September, December and March. The program is designed to develop proficiency in computer programming and systems analysis.

Entrance Requirements
A—Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S or 301/40G and Mathematics 300/40S* or 301/40G;
  or
  — Adult Basic Education 11A;
  or
  — Adult Basic Education 11B with supplemental mathematics topics;
  and
B—successful completion of an entrance test which assesses aptitudes for training as an analyst/programmer.

* Mathematics 300/40S is strongly recommended for applicants to this program.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirement B as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Job opportunities have been found in many aspects of computer programming or systems analysis. Previous graduates are employed with various companies that require computers for business purposes such as accounts payable, accounts receivable, payroll, inventory, general ledger, sales-order forecasting and credit authorization. Other job opportunities exist with the government, computer manufacturers and consulting firms.
Computer Analyst/Programmer (continued)

Program Outline

Term 1
B11-A191 Introductory Accounting A
B13-M608 Introduction to Business
B15-C101 Data Processing 1
B15-M102 Maths of Finance
B16-E129 Communication 1

Term 2
B11-A291 Introductory Accounting B
B13-S543 Human Behavior in Organizations
B15-C201 Data Processing 2 (COBOL)
B15-C508 Microcomputers
B16-E289 Business Communication 2

Term 3
B11-A392 Introductory Accounting C
B12-E276 Economic Principles 1
B15-C301 Data Processing 3 (COBOL and C Language)
B15-C304 Operating Systems
B15-C308 Systems Analysis

Term 4
B15-C405 RPG Programming
B15-C406 File Structures
B15-C408 Systems Design
B15-M301 Statistics

Term 5
B11-A681 Managerial Accounting
B12-E377 Economic Principles 2
B15-C507 Business Applications
B15-C509 dBASE IV
B15-C603 Data Base

Term 6
B15-C601 Edit Project
B15-C608 4th Generation Software
B15-C609 Computer Topics
B15-C610 Work Experience
Computer Engineering Technology

Purpose
To develop a broad general background in electronics with specialty training in computer hardware, operating systems, peripherals, networking, troubleshooting, maintenance and servicing.

Program
The Electronic Engineering Technology program group consists of Communication, Computer, Electrical, Electronic and Instrumentation Engineering Technology. These programs have a common first year of training. All applications will be processed for entry into Electronic Engineering Technology. Students who successfully complete the first year of studies in Electronic Engineering Technology may then transfer into one of the options listed above.

Computer Engineering Technology is a two-year diploma program with a September entry date. It is a multi-discipline program encompassing electronic, electrical, and some mechanical courses. These courses range from digital electronics, computer systems and networking to peripheral devices and the troubleshooting environment.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G; or
- Adult Basic Education Pre-Technology/Adult 12.

* Physics 40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment in almost every aspect of the electronics and computer industry: in research and development, installation, testing and maintenance, design and marketing.

Continued on next page
### Computer Engineering Technology (continued)

#### Program Outline

**YEAR 1**

**Electronic Engineering Technology**

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**YEAR 2**

**Computer Engineering Technology**

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<td>ELE-R620</td>
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Computer Numerical Control (CNC) Machine Operator

Purpose
To develop the skills and knowledge to enable the student to perform safe and proficient operations on a variety of computer numerically-controlled machines found in manufacturing production shops and tooling shops.

Program
Computer Numerical Control (CNC) Machine Operator is a five-month certificate program with September and February entry dates. The program will involve learning to select, measure and set up tooling; identify and set up jigs and fixtures for various machining applications on a CNC machine; write, load and prove CNC programs for CNC machines. This program includes one month of industrial experience.

Please note that because Workers Compensation regulations stipulate that steel-toed footwear must be worn in industrial workplaces, students are required to provide and wear appropriate safety footwear in machine shops, both in the College and during in-industry placements.

Entrance Requirements
Successful completion of the Red River Community College Machine Shop Practice or Machine Shop Practice – Basic program or Journeyman's Machinist certificate.

Mature Student Admission. Mature students must be at least 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their applications a detailed resume and an official transcript, which may assist in determining eligibility. Testing by the College may be necessary.

Employment Potential
Many graduates have found employment as CNC machine tool operators in manufacturing companies, production job shops, tool and die shops, aircraft repair and overhaul facilities, wood millworking shops, etc. Other graduates have found that the knowledge and skills gained through this program have provided a sound basis for related occupations, such as quality control inspectors, set-up persons, and CNC programmers.

Program Outline
CNC-0111  Computer Numerical Control
T04-A053  Geometric Dimensioning and Tolerancing
T04-A054  Quality Control
T04-A055  Industrial Training
T10-A001  Mathematics 2
T10-A002  Science 2
T13-W100  WHMIS Workshop
T14-A045  Communication Skills 2
Creative Communications

Purpose
To develop the knowledge and skills required to function effectively as a writer in advertising, public relations and journalism.

Program
Creative Communications is a two-year diploma program with a September entry date. The program is designed to develop broad skills as a generalist in journalism, advertising and public relations in the first year of training. In the second year of the program, students have the opportunity to specialize in one of the three areas. Practical work experience is provided through field placements in the industry.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S or 301/40G;

or

— Adult Basic Education 11B;

and

B — submission of a two-page autobiography;

and

C — successful completion of tests of reading ability and current affairs information;

and

D — completion of a home assignment and portfolio. (Details provided at the time of entrance testing; the deadline for submission of the assignment is two weeks from the test date.);

and

E — an interview with the Creative Communications selection committee.

It is strongly recommended that successful applicants have a typing proficiency of 40 wpm.

Because this special selection program has a cut-off date, applications should be submitted as early as possible. Please contact the Registration Department at 204-632-2327 or 1-800-903-7707 (outside Winnipeg in Canada) to confirm the exact date.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through E as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

This is a special selection program. Students are selected on the basis of writing talent, motivation and suitability for the kinds of communications careers available in the labor market.

Continued on next page
Creative Communications (continued)

Employment Potential
Past employment records show that a high percentage of graduates are working in program-related fields in Manitoba and other Canadian provinces. Graduates have found employment as journalists in print, radio and television; copywriters and media buyers in advertising agencies, radio and television stations; and public relations personnel in various companies and government agencies.

Program Outline

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
<th>Term 4</th>
<th>Term 5</th>
<th>Term 6</th>
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<tbody>
<tr>
<td>B10-C111</td>
<td>Creative Writing: Fiction</td>
<td>B10-C216</td>
<td>Current Events</td>
<td>B10-C325</td>
<td>Canadian Literature</td>
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<td>B10-C113</td>
<td>Composition and English Grammar</td>
<td>B10-C220</td>
<td>Public Relations: Process</td>
<td>B10-C331</td>
<td>Creative Writing: Style</td>
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<td>B10-C114</td>
<td>Advertising: Introduction</td>
<td>B10-C221</td>
<td>Creative Writing: Drama and Poetry</td>
<td>B10-C332</td>
<td>Journalism: Media and The Law</td>
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<td>B10-C115</td>
<td>Literary Structure and Styles</td>
<td>B10-C222</td>
<td>Journalism: Style and Practice</td>
<td>B10-C334</td>
<td>Advertising: Print Media</td>
</tr>
</tbody>
</table>

Required courses:
- B10-C510 Field Work 1
- B10-C520 Independent Professional Project 2
- B10-C537 Television: Workshop
- B10-C544 Radio: Fine Tuning for the Ear

Elective Group A: one course required
- B10-C550 Public Relations: Practicum 2
- B10-C552 Journalism: Practicum 2
- B10-C554 Advertising: Practicum 2

Elective Group B: two courses required
- B02-P516 Photojournalism 1
- B10-C509 Media Buying
- B10-C512 Freelance Writing
- B10-C513 Cultural Arts 1
- B10-C514 Theatre Arts 1
- B13-S527 Psychology
- B10-C515 Advanced Desktop Publishing

Required courses:
- B10-C609 Independent Professional Project 3
- B10-C610 Field Work 2
- B10-C644 Radio: You're on the Air
- B10-C649 Television: Broadcasting

Elective Group A: one course required
- B10-C659 Public Relations: Practicum 3
- B10-C664 Advertising: Practicum 3
- B10-C663 Journalism: Practicum 3

Elective Group B: two courses required
- B13-S617 Sociology
- B02-P626 Advanced Photojournalism 2
- B10-C515 Advanced Desktop Publishing
- B10-C614 Theatre Arts 2
- B10-C615 Promotion Management
- B10-C623 Cultural Arts 2
- B10-C635 Manitoba Literature
- B10-C616 Freelance Business Management
Dental Assisting — Level 2

Purpose
To develop the skills required to assist the dental operator in all dental procedures by using four-handed dentistry techniques, in mixing materials and in preparation of instruments, operatories and patients. The program will also develop the skills required for a variety of intra-oral duties, including polishing of teeth, application of fluoride, exposing radiographs, placement and removal of rubber dams, placement of sealants and taking of impressions. The graduate will be able to perform limited laboratory work and receptionist duties.

Program
Dental Assisting — Level 2 is a 10-month certificate program with a September entry date. The program has an Advisory Committee that includes representatives from all oral health team associations and the College. Through this committee, the College keeps up-to-date with current dental procedures and standards and the requirements of prospective employers. The program has been fully accredited by the Canadian Dental Association after a thorough inspection by an accreditation team.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with one of Biology 300/40S or 301/40G, Chemistry 300/40S, Physics 300/40S or Physical Science 301/40G. Biology 300/40S or 301/40G is recommended. Preparation in Mathematics at the 200/30S or 201/30G level is strongly recommended;

— Adult Basic Education 11C or 11A;

or

and

B — successful completion of the prescribed reading test;

and

C — recent medical and dental certificates plus immunization records which confirm general good health and freedom from communicable disease. These records need not be submitted until notification of acceptance is received by the applicant.

Note: Certificates in Emergency First Aid procedures and Basic Rescuer — CPR must be obtained prior to office practicums.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B and C as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment in private dental offices, large clinics, hospital dental clinics and in government public health programs.
Dental Assisting – Level 2 (continued)

Program Outline

B15-S110  Introduction to Data Processing
F01-B007  Physical Education
H07-C119  Rubber Dam – Theory
H07-C124  Radiology – Theory
H07-C138  Interpersonal Relations
H07-C146  Rubber Dam – Practical
H07-C147  Radiology – Practical
H07-C156  Supervised Clinical Experience
H07-C157  Clinical Practice
H07-D001  Operative Dentistry – Theory
H07-D002  Endodontics – Theory
H07-D003  Microbiology and Infection Control – Theory
H07-D004  Workplace Hazardous Materials Information System
H07-D005  Life Sciences
H07-D006  Dental Anatomy
H07-D007  Professional Development
H07-D008  Dental Practice Management
H07-D009  Preventive Dentistry
H07-D010  Polishing and Fluoride – Theory
H07-D011  Diagnosis – Theory
H07-D012  Oral Surgery – Theory
H07-D013  Operatory – Theory
H07-D014  Laboratory – Theory
H07-D015  Operatory – Practical
H07-D016  Laboratory – Practical
H07-D017  Prosthodontics – Theory
H07-D018  Orthodontics – Theory
H07-D020  Social Sciences 2
H07-E212  Sealants – Theory
H07-E213  Impressions – Theory
H10-G031  Job Search
H11-S101  Social Science
Dental Assisting Prior Learning Assessment (PLA)

Purpose
The purpose of the program is to assess previously-learned dental assisting skills and theory, to acknowledge prior learning and to give credit where applicable.

Program
Testing dates are held in February of each year. After applicants have completed entrance requirements A and B, they meet with an instructor to discuss the program and their status. The applicant’s next step is to complete a portfolio detailing work experience. An assessment fee of $96 is to be submitted with the portfolio. A letter of reference and a checklist of practical skills is to be completed by the applicant’s employer. Testing dates are then arranged.

A Red River Community College Dental Assisting – Chairside certificate will be issued to applicants who have successfully completed all dental assisting requirements.

Skill Evaluation
Practical Skills:
Applicants can challenge those practical skills which they have gained through job training.

Theoretical Skills:
Those applicants who have had formal training are eligible to challenge the theory. The pass mark for all theory is 60% or D. Current first aid and CPR Basic Rescuer certificates must be submitted upon successful completion of challenge.

Social Sciences:
Applicants must obtain credit for Social Science through Red River Community College or another institution. A minimum C grade is required for this credit. Transcripts must be submitted to the Dental Assisting Department, A306-2055 Notre Dame Avenue, Winnipeg, Manitoba R3H 0J9.

Introduction to Data Processing:
Applicants must obtain credit for Data Processing through Red River Community College or another institution. Transcripts must be submitted to the Dental Assisting Department.

Please note that students will be restricted to one attempt at each examination. If a course is failed (below 60%), the student must enroll in the day program as a part-time student and will be charged tuition fees.

If there is a minimum of five students requiring instruction in the same course, an instructor may be contracted to teach them at a scheduled time.

Entrance Requirements
A – two years of full-time dental assisting work experience; or

– four years of part-time dental assisting work experience; or

– Chairside Dental Assisting Certificate from an institution other than Red River Community College or
Dental Assisting Prior Learning Assessment (continued)

Entrance Requirements, continued

- a dental degree from another country;  
  and
B - successful completion of the prescribed reading skills test;  
  and
C - recent certificates of good medical and dental health and an immunization record (to be submitted after successful completion of reading skills test).

Program Outline
B15-S108 Introduction to Data Processing
F01-B007 Physical Education
H07-C005 Life Sciences
H07-C138 Interpersonal Relations
H07-C156 Supervised Clinical Experience
H07-D001 Operative Dentistry – Theory
H07-D002 Endodontics – Theory
H07-D003 Microbiology and Infection Control – Theory
H07-D004 Workplace Hazardous Materials Information System
H07-D006 Dental Anatomy
H07-D007 Professional Development
H07-D008 Dental Practice Management
H07-D009 Preventive Dentistry
H07-D011 Diagnosis – Theory
H07-D012 Oral Surgery – Theory
H07-D013 Operatory – Theory
H07-D014 Laboratory – Theory
H07-D015 Operatory – Practical
H07-D016 Laboratory – Practical
H07-D017 Prosthodontics – Theory
H07-D018 Orthodontics – Theory
H07-D020 Social Sciences 2
H10-G031 Job Search
H11-S101 Social Science
Developmental Services Worker

Purpose
To develop the knowledge and skills required to provide quality care to people with a mental handicap, who are living in the community.

Program
Developmental Services Worker is a two-year diploma program with a September entry date. The objective of the program is to prepare the student to promote a variety of experiences that offer people with a mental handicap appropriate intellectual stimulation as well as opportunities for physical, emotional and social development. If the student chooses to exit the program after one year, he or she will be eligible to receive a certificate.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation including English 300/40S or 301/40G and Mathematics 300/40S or 301/40G or Accounting 302/40S/41B;
   or
   — Adult Basic Education 11A, 11B or 11C;
   and
B — successful completion of the prescribed reading skills test;
   and
C — completion of the additional information sheets and submission of two letters of reference;
   and
D — an interview with members of the selection committee*;
   and
E — good health. **Immunizations are required of all students and must commence as indicated upon notification of acceptance into the program.

* Accepted applicants will be requested to complete the following: a) a two-day Standard First Aid Course, b) a four-hour CPR Heartsaver course.
  ** The selection committee may require an applicant to submit medical certificates (including dental and chest x-ray) verifying good health and freedom from communicable disease.

Note: You may be required to submit to a criminal record check prior to going out on some practicum experiences, due to government regulations of agencies.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through E as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Continued on next page
Developmental Services Worker (continued)

Employment Potential
Opportunities for employment are expanding as the need for community-based services for people with a mental handicap increases. Positions may be found in residential situations, employment-related, developmental and educational services.

Program Outline

YEAR 1
- F01-D001 Activity for Life 1
- H11-S101 Social Science
- H11-S201 Social Science
- H11-S301 Social Science (3)
- H16-D100 Social and Historical Perspectives
- H16-D101 Health and Safety
- H16-D102 Professional Development
- H16-D103 Interpersonal Communications
- H16-D104 Practicum 1
- H16-D105 Practicum 2
- H16-D106 Residential Services
- H16-D107 Personal Care
- H16-D108 Writing Skills 1
- H16-D109 Writing Skills 2
- H16-D204 Sexuality
- H16-D210 Education 3
- H16-D211 Education 2
- H16-D212 Education 1

YEAR 2
- H16-D106 Residential Services
- H16-D200 Family Dynamics
- H16-D201 Advocacy
- H16-D202 Communication and Counselling
- H16-D203 Principles of Management
- H16-D204 Sexuality
- H16-D205 Practicum 3
- H16-D206 Practicum 4
- H16-D207 Medications Training
- H16-D208 Response to Physical Illness
- H16-D209 Planning
- H16-D213 Augmentative Communication
- H16-D214 Introduction to Mental Health
- H16-D215 Development Seminar
- H16-D216 Integration and Community Living
- H16-D217 Vocational Options
- H16-D218 Aging
Diesel Mechanics – Transport

Purpose
To develop the knowledge and skills required to diagnose malfunctions, inspect and repair worn parts, and reassemble and render operational diesel-powered trucks and construction equipment.

Program
Diesel Mechanics – Transport is a 10-month certificate program with a September entry date. The program is designed to prepare the student to adjust, service and repair a variety of heavy mobile equipment, usually diesel powered, used in construction and/or highway transportation. The work will involve fault diagnosis, dismantling engines and related equipment to effect repairs, basic servicing and/or overhaul of fuel-injection and hydraulic systems, transmissions, air brakes, drives and control linkages, and other mechanical components.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended;
- or
- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates of this program have found employment all across Canada, especially in northern areas on dam sites. Some graduates work as mechanics and maintenance specialists on industrial, highway and construction equipment, on rail-transport or marine equipment and on generating-plant equipment. Other graduates who have decided to take the apprenticeship program and have gained considerable work experience, have become service managers, company representatives and salespeople.

For further information on apprenticeship and possible transfer of credit, please see the Diesel Mechanics – Transport program brochure.

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# Diesel Mechanics - Transport (continued)

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<td>Automatic Transmission - Practical</td>
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<td>T01-D036</td>
<td>Industrial Training - Practical</td>
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<td>T01-D037</td>
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<td>T01-D038</td>
<td>Introductory Mechanics - Practical</td>
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<td>T01-D039</td>
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<td>Standard Transmissions Overhaul - Practical</td>
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<td>T01-D045</td>
<td>Gas Engine Overhaul - Theory</td>
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<td>Gas Engine Overhaul - Practical</td>
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<td>T13-M508</td>
<td>Motor Vehicle Mechanic Technician Math</td>
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<td>T13-S508</td>
<td>Power Mechanics Science</td>
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<td>T13-W100</td>
<td>WHMIS Workshop</td>
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<tr>
<td>T14-C504</td>
<td>Communication</td>
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Early Childhood Education

Purpose
To develop the knowledge and skills required to provide quality child care in the community.

Program
Early Childhood Education is a two-year diploma program with a September entry date. The goals of the program are to prepare students to support children and families in group care settings. Graduates competently plan appropriate learning experiences that stimulate the intellectual, physical, emotional and social development of young children.

The major part of the program curriculum is delivered on a competency-based learning (CBL) basis. CBL is a modularized approach to learning which allows a moderate degree of self-pacing. It requires initiative in planning a study schedule, completing requirements in a reasonable time and in managing time wisely and effectively to meet deadlines.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with 300/40S or 301/40G courses inclusive. English 300/40S or 301/40G and Biology 300/40S or 301/40G are strongly recommended;

— Adult Basic Education 11A, 11B, or 11C;

or

B — successful completion of the prescribed reading skills test;

C — completion of the additional information sheets and submission of two letters of reference;

D — an orientation session with members of the Selection Committee;

E — good health. Immunizations are required of all students and must commence as indicated upon notification of acceptance into the program.

*Applicants may be required to attend an individual interview with the Selection Committee, as well as the general orientation session.

It is strongly recommended that all potential Early Childhood Education students obtain a criminal record check through their local RCMP detachment or the Winnipeg Police Service before starting classes. All employees of children's centres are required by law to complete a criminal record check to help ensure the safety of children.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through E as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites.

Continued on next page
Early Childhood Education (continued)

It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential

Opportunities for employment are expanding as society's need for child care increases. Graduates have found positions in day care centres, nursery schools, infant centres and in school-age programs. With experience and continuing education, some graduates have progressed to positions as directors of children's centres. For further information on transfer of credit, please see the Early Childhood Education program brochure.

Please note that, as of October, 1991, diploma status is required for classification as a Child Care Worker Level 2. The Provincial Day Care Regulations stipulate that two-thirds of all staff in full-time Manitoba day care centres must be at that level.

Program Outline

YEAR I

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<td>H06-C122</td>
<td>Integration Seminar 1</td>
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<td>H06-C123</td>
<td>Practicum 1</td>
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<td>H06-C221</td>
<td>Integration Seminar 2</td>
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<td>H06-C224</td>
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<td>H06-C322</td>
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<td>Foster Development of the Preschool Child</td>
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<td>H06-0B31</td>
<td>Respect Children's Culture</td>
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<td>H06-0C32</td>
<td>Report Suspected Cases of Abuse</td>
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<tr>
<td>H06-0C31</td>
<td>Use Basic Writing Skills</td>
</tr>
<tr>
<td>H06-0C32</td>
<td>Write Observation Reports</td>
</tr>
<tr>
<td>H06-0C33</td>
<td>Interpersonal Skills and Self-Understanding</td>
</tr>
<tr>
<td>H06-0D31</td>
<td>Provide Nurturing Care</td>
</tr>
<tr>
<td>H06-0D32</td>
<td>Act as Role Model</td>
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<tr>
<td>H06-0D33</td>
<td>Communicate with Children</td>
</tr>
<tr>
<td>H06-0D34</td>
<td>Provide Guidance and Discipline</td>
</tr>
<tr>
<td>H06-0D35</td>
<td>Guide Routines and Transitions</td>
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<tr>
<td>H06-0D37</td>
<td>Foster Social Interaction and Growth</td>
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<tr>
<td>H06-0E32</td>
<td>Respond to Emergencies</td>
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<tr>
<td>H06-0F31</td>
<td>Follow Health Regulations</td>
</tr>
<tr>
<td>H06-0F32</td>
<td>Identify Childhood Diseases and Illness</td>
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<tr>
<td>H06-0G31</td>
<td>Identify Activity Areas and their Components</td>
</tr>
<tr>
<td>H06-0J31</td>
<td>Guide Play Indoors and Outdoors</td>
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<tr>
<td>H06-0J32</td>
<td>Facilitate Play</td>
</tr>
<tr>
<td>H06-0K31</td>
<td>Set Steps in Planning a Curriculum</td>
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<tr>
<td>H06-0K32</td>
<td>Set Goals And Objectives</td>
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<tr>
<td>H06-0K33</td>
<td>Plan Activities</td>
</tr>
<tr>
<td>H06-0L35</td>
<td>Provide Drama Activities</td>
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<tr>
<td>H06-0L36</td>
<td>Provide Science Activities</td>
</tr>
<tr>
<td>H06-0M31</td>
<td>Use Materials and Equipment</td>
</tr>
<tr>
<td>H06-0N31</td>
<td>Relate to Individual Family Situations</td>
</tr>
<tr>
<td>H06-1A31</td>
<td>Explain Continuum of Human Development</td>
</tr>
<tr>
<td>H06-1A32</td>
<td>Foster Development of the Infant</td>
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<tr>
<td>H06-1A33</td>
<td>Foster Development of the Toddler</td>
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<tr>
<td>H06-1D36</td>
<td>Guide Children's Expression of Emotion</td>
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<tr>
<td>H06-1E31</td>
<td>Prevent Accidents</td>
</tr>
<tr>
<td>H06-1F33</td>
<td>Administer Medications</td>
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<tr>
<td>H06-1G32</td>
<td>Select Equipment and Play Materials</td>
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<tr>
<td>H06-1H31</td>
<td>Explain the Program Development Process</td>
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<tr>
<td>H06-1L31</td>
<td>Provide Art Experiences</td>
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<tr>
<td>H06-1L32</td>
<td>Provide Literature Activities</td>
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<tr>
<td>H06-1L33</td>
<td>Provide Group Time Activities</td>
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<tr>
<td>H06-1L34</td>
<td>Provide Music Activities</td>
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<tr>
<td>H06-1L37</td>
<td>Provide Outdoor Activities</td>
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<tr>
<td>H06-1Q31</td>
<td>Explain the Child Care Profession</td>
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Early Childhood Education (continued)

YEAR 2

H06-C433 Practicum 4
H06-C434 Integration Seminar 4
H06-C531 Integration Seminar 5
H06-C533 Practicum 5
H06-C631 Integration Seminar 6
H06-C634 Practicum 6
H06-A36 Analyze Theories of Development
H06-B33 Support the Abused Child
H06-B34 Support Children’s Special Needs
H06-C34 Use Job-Related Writing Skills
H06-C35 Analyze Personal Behavior
H06-D38 Guide a Variety of Children’s Behavior
H06-D39 Apply Behavior Management Approaches
H06-D41 Evaluate Personal Interaction with Children
H06-F35 Consider Children’s Dietary Needs
H06-G34 Design an Outdoor Playspace
H06-G35 Provide Activities for Infants
H06-G36 Provide Activities for School-age Children
H06-H34 Adapt a Program Philosophy
H06-H35 Develop a Daily Schedule
H06-J33 Analyze Play
H06-K34 Develop a Weekly Plan
H06-K35 Develop a Long Range Plan
H06-L39 Provide Movement Activities
H06-M32 Utilize Resources
H06-N34 Promote Parent Involvement
H06-N35 Communicate with Parents
H06-N36 Support the Family Unit
H06-P31 Network with Support Agencies

H06-Q33 Identify Operational Structure of the Centre
H06-Q36 Identify Current Professional Issues
H06-A35 Foster Development of the School-Age Child
H06-B35 Support Children in Stressful Situations
H06-B36 Advocate for Children
H06-F34 Implement a Nutritious Food Program
H06-F36 Respond to Physical and Medical Needs
H06-G33 Design a Floor Plan for a Children’s Centre
H06-H32 Assess Program as Related to Children’s Needs
H06-H33 Assess Factors that Influence Programs
H06-H36 Design Program Evaluation Procedures
H06-J34 Plan for Play
H06-L38 Provide Social Studies Activities
H06-L41 Provide Nutrition Activities
H06-N32 Integrate Cultural Factors
H06-N33 Respect Parent’s Rights and Opinions
H06-P32 Communicate with School Personnel
H06-Q32 Demonstrate Employability Skills
H06-Q34 Display Professional Behavior
H06-Q35 Identify the Need for Professional Growth
Electrical

Purpose
To develop performance skills in house wiring, commercial and industrial wiring and controls, and motor repair.

Program
Electrical is a 10-month certificate program with a September entry date. The program is designed to develop the required knowledge and skills for employment in the electrical construction industry, with public utilities, motor winding and repair facilities, and manufacturers and distributors of electrical equipment. The graduate will have sufficient knowledge to plan and wire residential occupancies and small commercial buildings, and to repair and troubleshoot motor-control circuits and single-phase motors. The graduate also will be familiar with the Electrical Code, DC and AC machines and transformers.

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with Mathematics 200/30S* and Science 100/20S or 101/20G;
  - Adult Basic Education 11A.
* Mathematics 301/40G will be accepted in lieu of Mathematics 200/30S.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to the applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found jobs in the electrical industry working with house wiring, commercial and industrial wiring and controls and electric motors. Other graduates work with utility companies such as Manitoba Hydro and the Manitoba Telephone System, with electrical contractors, manufacturers and distributors of electrical equipment and machinery, and in many other areas where electrical equipment is used and sold.

For further information on possible transfer of credit, see the Electrical program brochure.
**Electrical (continued)**

**Program Outline**

T11-E001  Fundamentals of Electricity  
T11-E005  Electrical Laboratory  
T11-E008  Residential Code  
T11-E009  Residential Wiring  
T11-E049  In-Industry  
T11-E051  Alternating Current Fundamentals  
T11-E053  Three Phase and Transformers  
T11-E057  Electrical Laboratory AC  
T11-E058  Commercial Code  
T11-E060  Commercial Wiring  
T11-E062  Solid State  
T11-E063  Electric Motor Repair - Theory  
T11-E067  Programmable Logic Controllers  
T13-M517  Electrical P/E Math  
T13-S717  Lighting Fundamentals  
T13-W100  WHMIS Workshop  
T14-C502  Communication
Electrical Engineering Technology

Purpose
To develop the knowledge and skills required to design, construct, troubleshoot and maintain a wide variety of electrical power systems.

Program
The Electronic Engineering Technology program group consists of Communications, Computer, Electrical, Electronic, and Instrumentation Engineering Technology. These programs have a common first year of training. All applications will be processed for entry into Electronic Engineering Technology. Students who successfully complete the first year of studies in Electronic Engineering Technology may then transfer into one of the options listed above.

Electrical Engineering Technology is a two-year diploma program with a September entry date. It is a multi-discipline program that includes electrical, electronic, computer and some mechanical courses. These courses range from electrical machines and electrical power systems to industrial electronics and microprocessor-based controllers.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;
  or
- Adult Basic Education Pre-Technology/Adult 12.

* Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment at the engineering technologist level in electrical utility systems, consulting engineering, electrical manufacturing, electrical contracting, general primary and secondary manufacturing, and government agencies.

For information on possible transfer of credit, see the Electrical Engineering Technology program brochure.

Continued on next page
# Electrical Engineering Technology (continued)

## Program Outline

### YEAR 1

**Electronic Engineering Technology**

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ELE-E101</td>
<td>Electric Circuits</td>
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</tr>
<tr>
<td>ELE-E102</td>
<td>Electrical Instruments</td>
<td></td>
</tr>
<tr>
<td>ELE-E104</td>
<td>Personal Computers 1</td>
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<tr>
<td>ELE-E106</td>
<td>Drafting</td>
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<tr>
<td>ELE-M102</td>
<td>Mathematics</td>
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<tr>
<td>ELE-P109</td>
<td>Physics</td>
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<tr>
<td>ELE-R100</td>
<td>Report Writing</td>
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<tr>
<td>T13-W100</td>
<td>WHMIS Workshop</td>
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### YEAR 2

**Electrical Engineering Technology**

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<thead>
<tr>
<th>Term 2</th>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ELE-E201</td>
<td>Electric Circuits</td>
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<tr>
<td>ELE-E202</td>
<td>Electrical Instruments</td>
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<tr>
<td>ELE-E204</td>
<td>Personal Computers 2</td>
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<tr>
<td>ELE-E207</td>
<td>Basic Electronics</td>
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<tr>
<td>ELE-M202</td>
<td>Calculus</td>
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<tr>
<td>ELE-P209</td>
<td>Physics</td>
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<tr>
<td>ELE-R200</td>
<td>Report Writing</td>
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<tr>
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<tr>
<td>ELE-E301</td>
<td>Electric Circuits</td>
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<tr>
<td>ELE-E303</td>
<td>Introductory Logic Circuits</td>
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<tr>
<td>ELE-E305</td>
<td>Introductory Microprocessors</td>
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<tr>
<td>ELE-E307</td>
<td>Basic Electronics</td>
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<tr>
<td>ELE-M302</td>
<td>Calculus</td>
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</tr>
<tr>
<td>ELE-P309</td>
<td>Physics</td>
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<tr>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ELE-E401</td>
<td>Electrical Circuits</td>
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<tr>
<td>ELE-E402</td>
<td>Electrical Measurements</td>
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<tr>
<td>ELE-E405</td>
<td>Programmable Logic Controllers</td>
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<tr>
<td>ELE-E406</td>
<td>Electrical Practices and Design</td>
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<tr>
<td>ELE-E407</td>
<td>Instrumentation Electronics</td>
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<tr>
<td>ELE-E408</td>
<td>Electrical Machines</td>
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<tr>
<td>ELE-M402</td>
<td>Calculus</td>
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<th>Course Code</th>
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<tr>
<td>ELE-E501</td>
<td>Electrical Circuits</td>
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<tr>
<td>ELE-E502</td>
<td>Electrical Measurements</td>
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<tr>
<td>ELE-E505</td>
<td>Data Acquisition and Communication</td>
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<tr>
<td>ELE-E506</td>
<td>Electrical Practices and Design</td>
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</tr>
<tr>
<td>ELE-E507</td>
<td>Power Electronics</td>
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<tr>
<td>ELE-E508</td>
<td>Electrical Machines</td>
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<td>ELE-M502</td>
<td>Calculus</td>
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<tr>
<th>Term 6</th>
<th>Course Code</th>
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<tr>
<td>ELE-E602</td>
<td>Electrical Measurements</td>
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<tr>
<td>ELE-E606</td>
<td>Switchgear and Protection</td>
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<tr>
<td>ELE-E607</td>
<td>Power Electronics</td>
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<tr>
<td>ELE-E608</td>
<td>Electrical Machines</td>
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<tr>
<td>ELE-E609</td>
<td>Linear Control Systems</td>
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<tr>
<td>ELE-R600</td>
<td>Report Writing</td>
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</table>
Electronic Engineering Technology

Purpose
To acquire the knowledge and skills required to develop, test and repair a wide variety of electronic systems and equipment.

Program
The Electronic Engineering Technology program group consists of Communication, Computer, Electrical, Electronic and Instrumentation Engineering Technology. These programs have a common first year of training. All applications will be processed for entry into Electronic Engineering Technology. Students who successfully complete the first year of studies in Electronic Engineering Technology may then transfer into one of the options listed above.

Electronic Engineering Technology is a two-year diploma program with a September entry date. The program is a multi-discipline program encompassing electronic, electrical and mechanical courses, ranging from microprocessor-based control systems and radio and high-frequency circuits to high-speed data communications.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;

or

- Adult Basic Education Pre-Technology/Adult 12.

*Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be at least 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their applications a detailed resume and an official transcript, which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment in a broad range of electronics-related occupations, in research and development, assisting in project development, in technical sales, selling and servicing electronic equipment and in design and quality control. Many graduates are in supervisory and managerial positions.

For further information on possible transfer of credit, see the Electronic Engineering Technology program brochure.

Continued on next page
Electronic Engineering Technology (continued)

Program Outline

**YEAR 1**

**Term 1**
- ELE-E101 Electric Circuits
- ELE-E102 Electrical Instruments
- ELE-E104 Personal Computers 1
- ELE-E106 Drafting
- ELE-M102 Mathematics
- ELE-P109 Physics
- ELE-R100 Report Writing
- T13-W100 WHMIS Workshop

**Term 2**
- ELE-E201 Electric Circuits
- ELE-E202 Electrical Instruments
- ELE-E204 Personal Computers 2
- ELE-E207 Basic Electronics
- ELE-M202 Calculus
- ELE-P209 Physics
- ELE-R200 Report Writing

**Term 3**
- ELE-E301 Electric Circuits
- ELE-E303 Introductory Logic Circuits
- ELE-E305 Introductory Microprocessors
- ELE-E307 Basic Electronics
- ELE-M302 Calculus
- ELE-P309 Physics

**YEAR 2**

**Term 4**
- ELE-E411 Communication Circuits
- ELE-E412 Electronic Measurements
- ELE-E415 Microprocessors
- ELE-E416 Manufacturing Techniques
- ELE-E417 Electronic Devices
- ELE-M412 Calculus

**Term 5**
- ELE-E511 High Frequency Circuits
- ELE-E512 Circuits and Fields
- ELE-E515 Microprocessors
- ELE-E517 Electronic Devices
- ELE-E519 Linear Control Systems
- ELE-M512 Calculus
- ELE-M513 Statistics

**Term 6**
- ELE-E611 Data Communications
- ELE-E615 Digital Control Systems
- ELE-E616 Manufacturing Techniques
- ELE-E617 Electronic Devices
- ELE-E618 Low Frequency Circuits
- ELE-R610 Report Writing
Engineering Design and Construction Technology

Purpose
Engineering Design and Construction Technology is a 30-month Co-operative Education diploma program within the Civil Engineering Technology program group. Students in this program will acquire the knowledge and skills needed to work with the engineering team in the design, detailing, and preparation of contract documents for the construction of architectural and related building systems. Students will receive comprehensive training in design, detailing and presentation of architectural, mechanical and structural building systems, as well as studies in estimating, contract administration and project management.

Program
The Civil Engineering Technology program group consists of the Engineering Design and Construction, Municipal, Structural and Survey programs. Co-operative Education, which integrates two six-month terms of paid employment with six terms of classroom theory, is included in all of these programs. Red River Community College offers Co-operative Education as part of its education strategy to enhance students’ career training opportunities.

All applications will be processed for entry into Civil Engineering Technology, where the emphasis will be on mathematics, engineering graphics, mechanics, surveying, communications and computer-assisted drafting. Students who successfully complete the first year of studies in Civil Engineering Technology may then apply for entry into Engineering Design and Construction Technology. The emphasis will shift to the study of architectural systems, structural analysis and design, contract administration, electrical and mechanical building systems and building science.

In order to proceed in Co-operative Education terms, students must meet departmental academic requirements.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;

  or

- Adult Basic Education Pre-Technology/Adult 12.

  * Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Continued on next page
Engineering Design and Construction Technology (continued)

Employment Potential
Graduates have found employment with consulting and mechanical engineers, contractors, fabricators, architects and service industries, as well as a variety of positions with various departments of municipal, provincial and federal government services.

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<tr>
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<th>YEAR 2</th>
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<tbody>
<tr>
<td>Civil Engineering Technology</td>
<td>Engineering Design and Construction Technology</td>
</tr>
</tbody>
</table>

**Term 1**
- CIV-C192 Engineering Graphics 1
- CIV-C193 Computer Assisted Drafting 1
- CIV-C195 Mechanics
- CIV-C196 Surveying 1
- CIV-C197 Communications
- CIV-C199 Mathematics 1
- T13-W100 WHMIS Workshop

**Term 2**
- CIV-C292 Engineering Graphics 2
- CIV-C293 Computer-Assisted Drafting 2
- CIV-C295 Strength of Materials 1
- CIV-C296 Surveying 2
- CIV-C297 Report Writing
- CIV-C299 Calculus 1

**Term 3**
- CIV-W300 Co-op Work Placement (16 weeks minimum)

**Term 4**
- CIV-C499 Calculus 2
- CIV-C797 Project Management
- CIV-D491 Building Science
- CIV-D492 Residential Construction
- CIV-D493 Computer-Assisted Drafting 3
- CIV-T495 Structural Analysis 1

**Term 5**
- CIV-C497 Principles of Management
- CIV-D591 Building Science 2
- CIV-D592 Commercial Construction
- CIV-D593 Mechanical Systems 1
- CIV-D596 Construction Materials and Systems
- CIV-T594 Timber Design

**Term 6**
- CIV-W600 Co-op Work Placement (16 weeks minimum)

**YEAR 3**

**Term 7**
- CIV-C597 Engineering Economics
- CIV-D791 Electrical Systems
- CIV-D792 Architectural Technology 1
- CIV-D793 Mechanical Systems 2
- CIV-D796 Architectural Environment 1
- CIV-T794 Steel Design

**Term 8**
- CIV-C897 Costing and Contract Administration
- CIV-D892 Architectural Technology 2
- CIV-D893 Mechanical Systems 3
- CIV-D896 Architectural Environment 2
**English as a Second Language (ESL)**

**Purpose**
To develop practical English speaking, listening, reading and writing skills.

**Program**
The English as a Second Language (ESL) program is an intensive, full-time language training program at the basic, intermediate and advanced levels. Each level is five months in duration and has September and February entry dates. Courses have been designed to develop practical speaking, listening, reading and writing skills which would be of immediate use to students. Course objectives are met through a combination of regular classroom activities and individualized instruction in the language laboratory and in reading and spelling course components.

**Entrance Requirements**
All applicants will be tested to determine placement at an appropriate level of language development.

**Employment Opportunities**
Many former students have found that ESL courses have opened up new employment opportunities for them. Others, who have successfully completed upper level programs, have gone on to enroll in college and university programs. An important benefit for all students is the increased ability to communicate and function effectively in the community.

*Continued on next page*
English as a Second Language (continued)

Program Outline

Basic Level
S05-E422 Writing Skills
S05-E423 Reading Skills
S05-E424 Grammar Skills
S05-E425 Speaking and Listening Skills

English for Integration and Job Market Preparation
S05-A012 Integration Skills
S05-A013 Reading
S05-A014 Grammar/Writing Skills
S05-A015 Oral/Aural Language Preparation
S05-A016 Spelling
S05-A017 Volunteer Placement
S05-A018 Job Market Preparation

Bridge Program for College Entry
S02-D240 Computer Awareness Training - Core
S02-D300 Mathematics - Core
S02-D301 Whole Numbers
S02-D302 Fractions
S02-D303 Decimals
S02-D304 Ratio and Proportion
S02-D305 Percent
S02-D306 Measurement
S02-D420 Mathematics Supplement
S02-D421 Hand-Held Calculator
S02-D422 Algebra 1
S02-D423 Algebra 2
S02-D424 Graphs
S02-D425 Algebra Problems
S02-D426 Geometry 1
S02-D427 Geometry 2
S02-D500 Science
S02-D501 Measurement
S02-D502 Matter and Energy
S02-D503 Heat AB
S02-D504 Heat C
S02-D505 Electrical Energy
S02-D506 Mechanical Energy
S02-D507 Life Science A
S02-D508 Chemistry C

S02-D509 Life Science B & C
S02-D999 Grading System: C = 80, B = 85, A = 90, A+ = 95
S05-A020 Speaking Skills
S05-A021 Spelling
S05-A023 Reading
S05-A024 Writing
S05-A025 Grammar
S05-A028 Listening

English for Business Purposes
ELE-E100 Introduction to Personal Computers
S05-B001 Guided Work Experience
S05-B002 Business Topics
S05-B003 Speaking
S05-B004 Writing
S05-B005 Listening
S05-B006 Reading
S05-B007 Spelling/Vocabulary Development
S05-B008 Grammar

English for Science and Technology
ELE-E100 Introduction to Personal Computers
S05-A107 Speaking
S05-A108 Listening
S05-A109 Reading
S05-A110 Grammar
S05-A111 Writing
S05-A112 Spelling

English for Academic Purposes
S05-E434 Listening and Note Taking
S05-E435 Reading
S05-E436 Spelling
S05-E437 Conversation and Oral Presentation
S05-E438 Grammar
S05-E439 Writing
S05-E440 Preparation for TOEFL
Entrepreneurship Training

Purpose
The Entrepreneurship Training program is designed to provide the opportunity for participants to explore business opportunities, assess their potential for small business ownership and develop skills needed to become successfully self-employed.

Program
The training will be specifically directed to opening and operating a small business, however, graduates of the program will be well qualified to accept employment as management trainees in a wide range of small and large businesses. Participants will be expected to develop a comprehensive business plan detailing plans for establishing their own business venture.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation;

    or

    – Adult Basic Education 11B;

    and

B – special selection criteria. Candidates for the program will be selected on the basis of potential suitability for small business ownership. The selection process includes completion of a questionnaire and a personal interview.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Program Outline

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<td>B17-A006</td>
<td>Introduction to Business 2</td>
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<td>B11-A010</td>
<td>Finance</td>
<td>B17-A007</td>
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<td>B14-A002</td>
<td>Marketing</td>
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<td>B16-A004</td>
<td>Business Communications 1</td>
<td>B21-A010</td>
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<td>Introduction to Business 1</td>
<td>B26-A010</td>
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<td>B17-A003</td>
<td>Personal Management</td>
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<td>B17-A004</td>
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<td>B26-A020</td>
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<td>B17-A005</td>
<td>Production Management</td>
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Geographic Information Systems Technology

Purpose
The Geographic Information Systems (GIS) Technology program will provide individuals with advanced training in the application of geographic information systems technology and concepts to a wide range of fields including surveying, engineering, planning, resource management and the environment.

Program
GIS Technology is one of the most rapidly growing areas of information systems management. The Manufacturing, Transportation and Civil Technology Division, in consultation with the GIS program advisory committee, has designed a program to meet a clearly identified need for training in this field. The complete program will be delivered over a two-year period in three terms per year. In order to accommodate persons currently employed, courses are delivered Monday through Thursday in three-hour units from 4 – 7 p.m. Courses are 72 hours in length delivered two evenings per week or 36 hours in length delivered one night per week.

Entrance Requirements
Applicant should have an engineering technology diploma from a recognized institution or a science-based university degree. Individuals with related experience will also be considered. All applications will be reviewed and approved by the Red River Community College Manufacturing, Transportation and Civil Technology Division.

Program Outline

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<td>CIV-GT01 Advanced Programming</td>
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<td>CIV-GC02 C Programming</td>
<td>CIV-GT02 Systems Administration</td>
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<td>CIV-GC03 Database Management Systems</td>
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<td>CIV-GC04 Systems Analysis</td>
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<td>CIV-GC05 Raster Applications</td>
<td>CIV-GM01 GIS Management Issues</td>
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<td>CIV-GC06 Vector Applications 1</td>
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<td>CIV-GA03 Advanced Raster Applications</td>
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<td>CIV-GA04 Facilities Management</td>
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Health Record Technician

Purpose
To develop the knowledge and skills needed for the collection, retention, analysis and utilization of health-care information required for patient care, management, research and education.

Program
Health Record Technician is a 10-month certificate program with a September entry date. The program is designed to train students for the specialized techniques required in health information management and offers a unique combination of medical, computer and business courses. This program has been fully recognized by the Canadian College of Health Record Administrators (CCHRA) and graduates are eligible to write the national certification exam. The CCHRA credentials are recognized throughout Canada.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with one of English 300/40S or 301/40G and at least one of Biology 300/40S or 301/40G or Chemistry 300/40S;

or

– Adult Basic Education 11B with science supplements;

and

B – applicants must achieve a basic typewriting speed of 35 wpm with a maximum of three errors on a five-minute timing;

and

C – an interview with the Health Record Technician Selection Committee.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B and C as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

This is a special selection program. The Selection Committee chooses candidates on the basis of educational background and aptitude for a career in the health records field. Applicants are encouraged to do some background research on this health profession before attending the interview.

Employment Potential
Most graduates have found employment in environments where health information is gathered and used: hospitals, clinics, cancer treatment centres, mental health centres, adolescent treatment centres, paramedical and government agencies and research studies. Others are employed as sole-charge technicians in rural health care facilities.

Continued on next page
Health Record Technician (continued)

Program Outline

Term 1
B13-S504  Psychology
B18-W535  Word Processing – Practical
B19-E751  Communications 1
B19-M751  Medical Terminology 1
B19-R741  Health Records Science 1
H03-L113  Anatomy and Physiology 1
One-week practicum in accredited facilities

Term 2
B12-L367  Legal Aspects of Health Records
B19-C762  Medical Coding 1
B19-E752  Communications 2
B19-M752  Medical Terminology 2
B19-R752  Health Records Science 2
H03-L213  Anatomy and Physiology 2
One-week practicum in accredited facilities

Term 3
B13-M610  Organization and Management
B13-R704  Statistics for Health Record Technicians
B15-S310  Microcomputer Data Base
B19-C763  Medical Coding 2
B19-E753  Communications 3
B19-N751  Medical Transcription
B19-P303  Hospital Practicum
H03-L313  Anatomy and Physiology 3

This program is currently being revised to a two-year Health Information Technologist.
Hotel and Restaurant Administration

Program
Hotel and Restaurant Administration is a two-year diploma program with a September entry date. The 21 months are consecutive and there is no summer break. The program was designed in cooperation with the Manitoba hospitality industry and is noted for its Co-operative Education component.

Co-operative Education aims at an effective blend of classroom study and off-campus work experience in program-related industry. This means that the student spends alternate three-month periods in the work force and is paid an hourly rate. The program comprises seven continuous terms: five on campus and two employment terms.

All courses have been identified by the hospitality industry in terms of required competencies and curriculum has been designed to achieve these competencies.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S or 301/40G and Mathematics 300/40S or 301/40G are strongly recommended. (Many students have found Accounting 202/30G and 302/40G to be very helpful in this program.);

   or

   – Adult Basic Education 11B;

   and

B – submission of an applicant information sheet. (Questions to be answered in writing will be sent to the applicant after an application form and proof of education are received by the Registration Department.);

   and

C – an information session with the Hotel and Restaurant Administration faculty;

   and

D – proof of good health, substantiated by recent medical, dental and chest x-ray certificates (to be submitted after notification of acceptance is received by the applicant).

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through D as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

This is a special selection program. After attending the information session the faculty may wish to discuss your application with you personally to determine your commitment to working in a people-oriented business. Some related industry experience is a definite asset.

Continued on next page
Hotel and Restaurant Administration (continued)

Employment Potential

It is difficult to forecast typical jobs that graduates can expect after graduation as much depends on the individual graduate's industry employment record, attitude, motivation and maturity. Statistics indicate that more than half of the Hotel and Restaurant Administration graduates move directly into supervisory or management-trainee positions. Other graduates begin their careers in entry-level positions. Most graduates have experienced little difficulty in moving into junior-to-middle management positions as they gain a broader range of work experience. Hotel and Restaurant Administration graduates are currently employed in major hotels as front-desk managers and supervisors, banquet managers and captains, sales managers, food and beverage managers and controllers and executive housekeepers. They are also employed in smaller hotels as general managers and assistant managers and in management and supervisory positions in restaurants, private clubs and food service departments.

Program Outline

**YEAR 1**
- B09-A101 Dining Room Service
- B09-A102 Front Office Operations 1
- B09-A103 Food Safe*
- B09-A104 Front Office Operations 2
- B09-A105 Housekeeping Operations
- B09-A106 Inventory Management 1
- B09-A107 Wines, Spirits and Beers
- B09-A108 Inventory Management 2
- B09-A114 Co-operative Education
- B09-A116 Tourism
- B11-A002 Accounting Systems 1
- B11-A004 Accounting Systems 2
- B11-A005 Accounting Systems 3
- B12-H110 Economics
- B12-H111 Hospitality Law
- B13-S514 Human Behavior in Organizations (HRA)
- B14-A201 Marketing 1
- B15-S109 Computer Applications
- B16-E841 Basic Business Communication
- B16-E843 Advanced Business Communication
- B16-E852 Intermediate Business Communication

**YEAR 2**
- B09-A113 Human Resource Management
- B09-A118 Co-operative Education
- B09-H212 Design, Layout and Maintenance
- B09-H404 Design Project
- B09-H662 Bartending
- B09-H666 Advanced Dining Room Service
- B11-A006 Hospitality Management Accounting 1
- B11-A007 Hospitality Management Accounting 2
- B14-A202 Marketing 2
- B16-C695 Hospitality Advertising, Sales and Public Relations
- B32-A012 Basic Food Preparation
- T13-W100 WHMIS Workshop

* Food Safe Course is delivered by the City of Winnipeg; registration fee is $22 (subject to change without notice).
Industrial Arts Teacher Education

Purpose
To develop teaching and technical skills in industrial arts and technology education.

Program
Industrial Arts Teacher Education is a four-year Red River Community College and University of Manitoba integrated Bachelor of Education degree program with a September entry date. Emphasis is directed at four areas: manufacturing, power and energy, graphic communications and construction. Technical skills, teaching skills and broad general knowledge about society are all important components in the program.

Entrance Requirements
The following criteria must be met for admission based on high school credentials: satisfactory standing in Grade 12/Senior 4 which satisfies the Manitoba Education and Training requirements for high school graduation, with five of these credits held at the Grade 12/Senior 4 level, so that these five include:

- A – a standing in English 300/40S and Mathematics 300/40S or 301/40G;
- B – four different subject areas;
- C – a minimum of three courses at the 300/40S level;
- D – a 60% average in English 300/40S and any two other 300/40S level subjects.

Note: Applicants who have completed course work in any university or college degree or diploma program are considered transfer applicants and must have a minimum cumulative grade point average of 2.0 in their university and/or college course work.

Mature Student Admission. Applicants who do not meet these entrance requirements, but are 21 years of age on or before September 30 in the year of registration, may apply as mature students. Mature student applicants, without Grade 12/Senior 4 standing, may be required to achieve a Grade 12/Senior 4 standing on the General Educational Development (GED) test. Mature students are strongly advised to include formal course work in mathematics and English at the 300/40S or 301/40G level as part of their preparation for College.

Applications from mature students will be reviewed on an individual basis. All applicants will be interviewed by the Admissions Committee and required to complete a written communications skills test. The College will notify you of time, date and location.

Employment Potential
After successful completion of the Bachelor of Education degree program, you will be eligible for a Professional Teaching Certificate from Manitoba Education and Training. This allows you to teach in all schools in Manitoba. Many of the job opportunities are available in rural areas of the province.

Program Outline

YEAR 1
Red River Community College
B23-C102 Construction – Introduction
B23-E105 General Teaching Methods 1
B23-G102 Graphic Communications – Introduction

Continued on next page
### Industrial Arts Teacher Education (continued)

#### YEAR 1 (continued)
- B23-M102 Manufacturing – Introduction
- B23-P102 Power & Energy – Introduction
- B23-T102 Seminar & School Experience
- B23-W102 Co-operative Business/Industrial Education

#### YEAR 2
- **University of Manitoba**
  - 63.202 Communication
  - 43.202 Psychology of Learning and Instruction
  - 81.215 Industrial Education in Technology
  - 81.305 Topics in Industrial Education
  - 116.101 Social Foundation of Education
  - 116.301 School Organization
  - Two courses (12 credit hours) in a second teachable. (See education requirements for Second Teachable Major/Minor.)

#### YEAR 3
- **Red River Community College**
  - B22-E204 Educational Testing and Evaluation
  - B23-C202 Construction – Advanced
  - B23-E103 Audiovisual and Technical Education
  - B23-E201 Organizing Industrial Education Facilities
  - B23-E203 Course Development in Technology Education
  - B23-E205 General Teaching Methods 2
  - B23-G202 Graphic Communications – Advanced
  - B23-M202 Manufacturing – Advanced
  - B23-P202 Power and Energy – Advanced
  - B23-T202 Student Teaching

#### YEAR 4
- **University of Manitoba**
  - 81.310 Microcomputers in Occupational Education
  - 81.311 Design Technology
  - 81.312 Industrial Safety
  - 81.407 Advanced Methods in Industrial Education
  - 81.309 Co-operative Education Curriculum and Instruction
  - Three courses (18 credit hours) in a second teachable. (See education requirements for Second Teachable Major/Minor.)

### Second Teachable Major/Minor
Second teachables in any one of the following subject areas or support options, which will serve as a second teaching area in the public school, can be developed with your advisor at the University of Manitoba:
- **Art**
- **Physics**
- **Chemistry**
- **Computer**
- **Science**

#### Industrial Arts Support Option
- 13.228 Mathematics
- 007.124 Earth and Planetary Science or 007.227 Earth Science
- 77.120 Introduction to Sociology
- 18.120 Principles of Economics

**Elect either a) or b):**
- a) 16.130 Physics
- b) 27.203 Administrative Theory or 27.208 Introduction to Management and Organization Theory
- 77.337 Sociology of Work

#### Industrial Arts Science Option
- 2.123 General Chemistry or 2.127/002.128 Introductory University Chemistry
- 71.123 Biology
- 16.105 Physics 1: Mechanics and Physics 2: Electricity and Magnetism or 16.106
- 16.102 General Physics 1 and 16.103 General Physics 2
- 13.139 Introductory Calculus
- 13.149 Calculus for Physics and Mathematical Sciences

**Elect one: a), b), c) or d):**
- a) 16.124 Physical Science
- b) 16.130 Physical Aspects of the Environment
- c) 7.227 Earth Science or 7.124 Earth and Planetary Science
- d) Curriculum and Instruction

#### Industrial Arts Social Science Option
- 17.120 Introduction to Psychology
- 17.231 Adolescent Psychology
- 77.120 Introduction to Sociology
- 77.337 Sociology of Work

Plus, 12 credit hours of course work from Sociology or Psychology.
Industrial Electronics

Purpose
To develop the fundamental knowledge of electrical and electronic components, devices and circuits needed to set up, adjust and troubleshoot laboratory and industrial electronic equipment used in control circuits and/or instrumentation.

Program
Industrial Electronics is a 10-month certificate program with 35 hours per week scheduled class time. There are two entry dates to the program: September and December. Evaluation in the program is based on skill competency, as determined through written assignments, tests and/or practical demonstration. Training is designed to emphasize hands-on experience in all skill areas and there is a close coordination of theory and application.

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with Mathematics 200/30S and one of Physics 200/30S or Physical Science 201/30G. English 200/30S or 201/30G is strongly recommended;
- Adult Basic Education 11A.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their applications a detailed resume and an official transcript, which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Jobs are available in any industrial area where electronic devices require installation, maintenance and servicing. Graduates have found employment in automated factories as installers and maintenance staff, in medical electronics and computer services and with public utilities.

Please note some employers of graduates require Mathematics 300/40S as a condition of employment.

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<td>T12-I003</td>
<td>AC Fundamentals</td>
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<td>T12-I004</td>
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<td>T12-I016</td>
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<td>T12-I017</td>
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<td>T12-I054</td>
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<td>T12-I058</td>
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<td>T12-I060</td>
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<td>T12-I073</td>
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<td>T12-I074</td>
<td>Microprocessor/Computer/Interfacing</td>
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<td>Electronics Math 1</td>
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<tr>
<td>T14-C504</td>
<td>Communication</td>
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</table>
Instrumentation Engineering Technology

Purpose
To develop the knowledge and skills required to design, construct, troubleshoot and maintain a wide variety of control systems.

Program
The Electronic Engineering Technology program group consists of Communication, Computer, Electrical, Electronic, and Instrumentation Engineering Technology. These programs have a common first year of training. All applications will be processed for entry into Electronic Engineering Technology. Students who successfully complete the first year of studies in Electronic Engineering Technology may then transfer into one of the options listed above.

Instrumentation Engineering Technology is a two-year diploma program with a September entry date. It is a multi-discipline program encompassing electronic, electrical and mechanical courses, ranging from microprocessors and power electronics to control valves and chemistry.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;
- Adult Basic Education Pre-Technology/Adult 12.

* Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment as instrument mechanics, working with tools; as instrument technologists in engineering offices; as junior designers; and as technical sales people. With broad experience and additional training, some graduates have moved into management positions.

For further information on possible transfer of credit, see the Instrumentation Engineering Technology program brochure.
Instrumentation Engineering Technology  
(continued)

Program Outline

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Electronic Engineering Technology

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<td>ELE-E106</td>
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**YEAR 2**  
Instrumentation Engineering Technology

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<tr>
<td>ELE-I438</td>
<td>Final Control Elements</td>
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<td>ELE-I539</td>
<td>Linear Process Control</td>
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<td>ELE-K531</td>
<td>Intro Chemical Instrumentation</td>
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<td>ELE-M532</td>
<td>Calculus</td>
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<tr>
<th>Term 6</th>
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<tr>
<td>ELE-I632</td>
<td>Process Measurements</td>
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<td>ELE-I637</td>
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<td>Industrial Control Application</td>
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<td>ELE-K631</td>
<td>Chemical Instrumentation</td>
</tr>
<tr>
<td>ELE-R630</td>
<td>Report Writing</td>
</tr>
</tbody>
</table>
Introduction to Community Services

Purpose
To prepare persons for entry into the Early Childhood Education (ECE) and Developmental Services Worker (DSW) programs.

Program
Students will be provided with the necessary basic academic skills in reading, writing, study skills and computer. English 300/40S will be included to develop writing, reading and critical thinking skills. (Province of Manitoba credit is awarded.) Interpersonal Communications and Self Understanding, one of the courses in both ECE and DSW, is included to give the student advance credit and lighten the course load in the first year of the diploma program.

Entrance Requirements
A — complete Adult Basic Education 10 with appropriate reading level;
   or
   — referral from ECE or DSW Selection Committee;
   and
B — applicants must be 17 years of age. Note: Level Placement Testing may be required.

Students are strongly encouraged to read the following books (required for Senior 4 English) before the program start date: Hamlet, The Stone Angel, The Devil's Disciple, Tess of the D'Urbervilles and Fahrenheit 451.

For further information, contact:
Red River Community College
Adult Basic Education Office
E303-2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9
Phone: 204-632-2401
Library and Information Technology

Purpose
To provide students with the necessary public service and technical skills to be a productive employee in library and other related fields.

Program
Library and Information Technology is a two-year diploma program with a September entry date. This program will be offered in alternate years.
The program combines technical and academic courses. The student learns the fundamentals of both manual and automated systems for acquiring, organizing, and disseminating information in a variety of formats. Academic courses are directed towards broadening students' general knowledge in order to enhance their ability to function effectively in an information environment. A variety of instructional techniques are employed including oral presentations, written assignments and group projects. Practical work experience is provided through field placements in different types of libraries.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S;
   or
   - Adult Basic Education 11B;
   and
B – successful completion of the reading skills assessment test;
   and
C – official proof of typing speed of 35 wpm with a maximum of three errors on a recent test;
   and
D – an interview with the Library Selection Committee.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through D as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
The program will provide graduates with training to be employed as a library technician. Technicians occupy mid-range positions with a level of responsibility between that of a clerk and a librarian. They may direct clerks, student assistants or other library technicians. Duties may be limited to a specific area within a technical or public service unit of a library or may cover a wide range of activities according to the size of the library. Technicians may also manage small libraries.

Continued on next page
Library and Information Technology (continued)

Program Outline

**YEAR 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>B05-L001</td>
<td>Introduction to Libraries</td>
</tr>
<tr>
<td>B05-L002</td>
<td>Basic Library Procedures</td>
</tr>
<tr>
<td>B05-L004</td>
<td>A/V and Office Equipment and Materials</td>
</tr>
<tr>
<td>B05-L005</td>
<td>Reference 1: Ready Reference</td>
</tr>
<tr>
<td>B05-L006</td>
<td>Cataloguing 1: Introduction to Descriptive Cataloguing</td>
</tr>
<tr>
<td>B05-L007</td>
<td>Acquisitions 1: Collection Development and Acquisitions</td>
</tr>
<tr>
<td>B05-L008</td>
<td>Field Placement 1</td>
</tr>
<tr>
<td>B05-L009</td>
<td>Cataloguing 2: Dewey Decimal and Sears Subject Headings</td>
</tr>
<tr>
<td>B05-L010</td>
<td>Reference 2: Theory and Effects of Automation</td>
</tr>
<tr>
<td>B12-L001</td>
<td>Academic Course: Introduction to Economics</td>
</tr>
<tr>
<td>B13-L001</td>
<td>Academic Course: Human Behaviour in Organizations</td>
</tr>
<tr>
<td>B15-L001</td>
<td>Microcomputers and Word Processing for Library Technicians</td>
</tr>
<tr>
<td>B15-L002</td>
<td>Spreadsheets</td>
</tr>
<tr>
<td>B16-L001</td>
<td>Academic Course: Business Communications</td>
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<tr>
<td>B16-L002</td>
<td>Academic Course: Career Writing</td>
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<tr>
<td>B16-L003</td>
<td>Academic Course: Children's Literature</td>
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<td>B16-L004</td>
<td>Academic Course: Young Adult Literature</td>
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**YEAR 2**

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<tr>
<td>B05-L011</td>
<td>Cataloguing 3: Derivative Cataloguing and MARC Coding</td>
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<tr>
<td>B05-L012</td>
<td>Acquisitions 2: Special Materials and Serials Management</td>
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<tr>
<td>B05-L013</td>
<td>Reference 4: Social Sciences and Humanities</td>
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<td>B05-L014</td>
<td>Field Placement 2</td>
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<td>B05-L015</td>
<td>Cataloguing 4: Library of Congress Classification and LCSH</td>
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<tr>
<td>B05-L016</td>
<td>Reference 3: On-Line Searching</td>
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<tr>
<td>B05-L017</td>
<td>Marketing the Library and Information Services</td>
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<tr>
<td>B05-L018</td>
<td>Academic Course: Issues in Canadian Society</td>
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<tr>
<td>B05-L019</td>
<td>Field Placement 3</td>
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<tr>
<td>B05-L020</td>
<td>Cataloguing 5: Advanced Descriptive Cataloguing</td>
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<tr>
<td>B05-L021</td>
<td>Management Skills for Library Technicians</td>
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<tr>
<td>B05-L022</td>
<td>Reference 5: Science and Technology</td>
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<tr>
<td>B05-L023</td>
<td>Selected Library Topics</td>
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<tr>
<td>B12-L002</td>
<td>Academic Course: Levels of Canadian Government</td>
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<tr>
<td>B13-L002</td>
<td>Academic Course: Multiculturalism in Canada</td>
</tr>
<tr>
<td>B16-L005</td>
<td>Academic Course: Canadian Literature</td>
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<tr>
<td>B16-L006</td>
<td>Academic Course: Literary Genres</td>
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</table>
Machine Drafting

Purpose
To develop the skills and knowledge needed to assemble and produce working drawings, manually and computer-generated, as required by the industrial and manufacturing industries.

Program
Machine Drafting is a 10-month certificate program with a September entry date. The program is designed to train the student to produce working drawings of machines and their components and focuses on the development of both traditional manual drafting skills and high technology methods using computer-assisted drafting systems.

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with one of Mathematics 200/30S* or 201/30G. Physics 200/30S or Physical Science 201/30G is strongly recommended;
- Adult Basic Education 11A.

* Mathematics 200/30S or its academic equivalent is advised. A strong background in mathematics is essential to the drafting field.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Job opportunities have been found as junior draughtspeople with machinery manufacturers and in tool and die production shop offices. Some graduates have found employment with structural fabricators, equipment manufacturers and in the aircraft industry. Other graduates are working in consulting engineering offices. After gaining experience, many have found employment as technical representatives or salespeople for metal-working equipment and product companies, or as shop inspectors, estimators and designers.

Program Outline

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
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</thead>
<tbody>
<tr>
<td>T03-M105 Fundamentals of Delineation</td>
<td>T03-M201 Strength of Materials</td>
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<tr>
<td>T03-M102 Applied Machine Drafting 1</td>
<td>T03-M204 Work Experience</td>
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<tr>
<td>T03-M103 Computer-Aided Drafting 1</td>
<td>T03-M205 Applied Machine Drafting 2</td>
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<tr>
<td>T03-M104 Computer Applications 1</td>
<td>T03-M206 Computer-Aided Drafting 2</td>
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<tr>
<td>T13-M524 Drafting Math</td>
<td>Term 3</td>
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<tr>
<td>T13-W100 WHMIS Workshop</td>
<td>T03-M301 Mechanics</td>
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<tbody>
<tr>
<td>T03-M304 Applied Machine Drafting 3</td>
<td>T14-R504 Communications</td>
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<tr>
<td>T03-M305 Computer-Aided Drafting 3</td>
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</table>
Machine Shop Practice – Advanced

Purpose
To develop the skills and knowledge to be able to perform safely and proficiently basic operations on a variety of machine shop equipment found in machine and tool and die shops. This program will enable the student to perform, at a higher level, safe and proficient operations covered in the Machine Shop Practice – Basic program. Advanced operations not previously covered will also be included.

Program
Machine Shop Practice – Advanced is a five-month certificate program with September and February entry dates. Graduates of this program who achieve a minimum of a “C” average will be allowed to apply to Manitoba Education and Training, Apprenticeship and Training Division, for credit in the Apprenticeship Level 1 Machinist program.
This program includes one month of industrial experience.

Entrance Requirements
Successful completion of the Red River Community College Machine Shop Practice or Machine Shop Practice – Basic program.
Mature Student Admission. Mature students must be at least 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Testing by the College may be necessary.

Employment Potential
Graduates may find employment as machine tool operators or as machinist apprentices in the areas of manufacturing, repair or servicing in aircraft, automotive, mining, construction and agricultural equipment industries. Graduates will find that the knowledge and skills gained through this program will provide a sound basis for related occupations, such as mechanical draftsperson, mechanical technician, estimator and industrial salesperson.

Program Outline
T10-A001  Mathematics 2
T10-A002  Science 2
T04-A053  Geometric Dimensioning and Tolerancing
T04-A054  Quality Control
T04-A055  Industrial Training
T10-A058  Machine Shop
T13-W100  WHMIS Workshop
T14-A045  Communication Skills 2
Machine Shop Practice — Basic

Purpose
To develop the knowledge and skills to be able to perform safely and proficiently basic operations on a variety of machine shop equipment found in machine and tool and die shops.

Program
Machine Shop Practice — Basic is a five-month certificate program with September and February entry dates. The tools involved in this program are metal cutting types which include: hand cutting tools, basic grinders, drill press, lathe and milling machine. Students will also be able to interpret engineering drawings, read measuring tools, inspect various parts and do basic mathematic calculations as required. Graduates of this program may advance to Red River Community College’s Machine Shop Practice — Advanced program or Computer Numerical Control (CNC) Machine Operator program, or the Apprenticeship Level 1 Machinist program.

Please note that because Workers Compensation regulations stipulate that steel-toed footwear must be worn in industrial workplaces, students are required to provide and wear appropriate safety footwear in welding and machine shops, both in the College and during in-industry placements.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended; or

- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Program Outline
T04-A056 Machine Shop
T04-A057 Interpreting Engineering Drawings
T10-A003 Mathematics 1
T10-A004 Science 1
T13-W100 WHMIS Workshop
T14-A046 Communication Skills 1
Masonry

Purpose
To develop skill and speed in bricklaying through the practical use of tools and through an understanding of trade terminology, types of materials and bonds.

Program
Masonry is a six-month certificate program with an October entry date. The program is designed to develop a basic theoretical knowledge of all aspects of the trade; to acquire practical skills in masonry; to develop standards and pride of craftsmanship; and to develop proper working habits.

Entrance Requirements
- complete Manitoba Grade 9/Senior 1, or equivalent, with Mathematics 9 and Science 9. English 9 is strongly recommended;
or
- Adult Basic Education 10.

*Applicants must be able to do basic operations in mathematics with whole numbers, fractions, and decimals and should be able to read with good comprehension at a Grade 9/Senior 1 level.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 9/Senior 1 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Although there have been some job opportunities in related occupations for which the knowledge of masonry is an asset, almost all graduates have chosen to enter the apprenticeship program. After reaching journeyperson level, graduates have worked in a variety of positions: mason, supervisor, estimator, contractor or building inspector, in maintenance or as a sales representative.

For further information on apprenticeship and possible transfer of credit, please see the Masonry program brochure.

Program Outline
T02-M001 Introduction, Materials and Tools Used in Masonry
T02-M004 Practical Work
T02-M006 Masonry Bonds – Theory
T02-M008 Definitions – Theory
T02-M010 Walls – Theory
T02-M011 Estimating – Theory
T03-R019 Blueprint Reading and Sketching for Masonry
T13-M502 Masonry Math
T13-W100 WHMIS Workshop
T14-C003 Communications
Mechanical Engineering Technology

Purpose
To develop knowledge and skills in mechanical design, the production side of manufacturing, and technical supervision.

Program
Mechanical Engineering Technology is a two-year diploma program with a September entry date. The objective of the program is to prepare the student to work in design, manufacturing, quality assurance, equipment selection and computer-aided engineering. The emphasis is on mechanical analysis and design, manufacturing methods, building systems design and control, supervision and management and computer applications.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;
  
or
- Adult Basic Education Pre-Technology/Adult 12.

*Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment in design, technical sales, manufacturing, research, instruction and management with companies involved in the areas of agriculture, mining, aerospace, air conditioning, refrigeration, transportation, foundries, fluid power, consulting engineering and government services.

For further information on possible transfer of credit, see the Mechanical Engineering Technology program brochure.
## Program Outline

### YEAR 1

**Term 1**
- MET-1001 Math
- MET-1003 Communications
- MET-1004 Manufacturing Processes 1
- MET-1005 Industrial Materials
- MET-1006 Mechanical Drafting
- MET-1013 Electronics (Passive Circuits)
- T13-W100 WHMIS Workshop

**Term 2**
- MET-1008 Mechanics (Statics)
- MET-1010 Engineering Economics
- MET-1011 Project Management
- MET-1012 Manufacturing Processes 2
- MET-1017 Calculus
- MET-1018 Electronics (Linear and Digital Circuits)
- MET-1023 Computer-Assisted Design

**Term 3**
- MET-1007 Math/Applied Statistics
- MET-1009 Report Writing
- MET-1014 Canadian Business Fundamentals
- MET-1015 Mechanics (Dynamics)
- MET-1016 Structured Computer Programming
- MET-1019 Fluid Mechanics

### YEAR 2

**Term 4**
- MET-1020 Numerical Methods
- MET-1021 Stress Analysis 1
- MET-1022 Quality Control
- MET-1024 Fluid Power (Hydraulics)
- MET-1025 Commercial Mechanical Components
- MET-1030 Metallurgy
- MET-1040 Thermodynamics
- MET-1051 Advanced CAD

**Term 5**
- MET-1027 Stress Analysis 2
- MET-1028 Fluid Power (Pneumatics)
- MET-1031 Advanced Manufacturing 1
- MET-1032 Industrial Engineering 1
- MET-1033 Tooling Technology and Design
- MET-1041 Instrumentation 1
- MET-1042 Air Conditioning
- MET-1043 Electrical Systems
- MET-1050 Supervisory Management
- MET-1052 Technical Report Planning

**Term 6**
- MET-1029 Fundamentals of Component Design
- MET-1034 Technical Report
- MET-1035 Automation
- MET-1037 Industrial Engineering 2
- MET-1038 Advanced Manufacturing 2
- MET-1039 Production Planning and Control
- MET-1045 Instrumentation 2
- MET-1046 Air Conditioning Systems
- MET-1047 Energy Management
- MET-1048 Noise, Vibration and Balancing
- MET-1049 Engineering Design
Medical Laboratory Technology

Purpose
To develop the knowledge and skills required to examine and analyze body specimens using various chemical, microscopic and bacteriological tests.

Program
Medical Laboratory Technology, a 22-month program with a September entry date, is designed to train students to work in medical laboratories or clinics. The program comprises 10 months at the College where both academic and practical courses are emphasized, followed by 12 months in an affiliated clinical training centre to supplement theory and develop practical skills.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation. English 300/40S or 301/40G, Mathematics 300/40S, Chemistry 300/40S and Biology 300/40S will be required. Preparation at the 300/40S level in all course areas is preferred. Physics 300/40S and English 300/40S are strongly recommended;
or
- Adult Basic Education Pre-Technology/Adult 12;*
and
B – completion of clinical training centre application form. The necessary form will be sent to applicants once a College application and supporting educational documents are received;
and
C – may include an orientation and interview conducted by the clinical training centre;
and
D – submission of immunization records after notification of acceptance is received.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through D as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

This is a special selection program. The selection committee(s) will interview applicants who have completed the preliminary requirements and will select students on the basis of academic preparation, maturity, motivation and potential to work as part of a health care team.

*Applicants are advised that selection committee(s) may give preference to candidates possessing Manitoba Grade 12/Senior 4 with standing in 300/40S level courses or post-high-school science preparation.

Because this special selection program has a cut-off date, applications should be submitted as early as possible. Please contact the Registration Department at 204-633-2327 or 1-800-903-7707 (outside Winnipeg in Canada) to confirm the exact date.

Continued on next page
Medical Laboratory Technology (continued)

Employment Potential

Upon successful completion of the program, and with the clinical training centre's recommendation, the graduate is eligible to write the Canadian Society of Laboratory Technologists (CSLT) national examinations which lead to a certificate as a Registered Medical Laboratory Technologist (RT), a nationally-recognized certification. Successful completion of these exams will qualify the graduate for membership in the CSLT.

Graduates have found employment in hospital laboratories, medical clinics, research agencies and in veterinary and pharmaceutical laboratories aiding the medical practitioner in the diagnosis and subsequent treatment of the patient.

Program Outline

Term 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>H03-L101</td>
<td>Anatomical Structure and Function</td>
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<td>H03-L119</td>
<td>Applied Laboratory Mathematics</td>
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<tr>
<td>H03-L120</td>
<td>Computers</td>
</tr>
<tr>
<td>H03-L121</td>
<td>Introductory Chemistry</td>
</tr>
<tr>
<td>H03-L122</td>
<td>Occupational Safety</td>
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<tr>
<td>H03-L123</td>
<td>Instrumentation</td>
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<tr>
<td>H03-L230</td>
<td>Immunology</td>
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<tr>
<td>T13-W100</td>
<td>WHMIS Workshop</td>
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Term 2

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<td>H03-L202</td>
<td>Clinical Microbiology</td>
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<td>H03-L203</td>
<td>Clinical Chemistry</td>
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<tr>
<td>H03-L204</td>
<td>Hematology</td>
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<td>H03-L205</td>
<td>Histotechnology</td>
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<td>H03-L212</td>
<td>Transfusion Science</td>
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<tr>
<td>H03-L220</td>
<td>Computers</td>
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<tr>
<td>H03-L222</td>
<td>Clinical Microbiology Laboratory 202</td>
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<td>H03-L223</td>
<td>Clinical Chemistry Laboratory 203</td>
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<td>H03-L224</td>
<td>Hematology Laboratory 204</td>
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<td>H03-L225</td>
<td>Histotechnology Laboratory 205</td>
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<td>H03-L228</td>
<td>Transfusion Science Laboratory 212</td>
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<td>H03-L230</td>
<td>Immunology</td>
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Term 3

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<td>H03-L302</td>
<td>Clinical Microbiology</td>
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<td>Clinical Chemistry</td>
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<tr>
<td>H03-L304</td>
<td>Hematology</td>
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<td>H03-L305</td>
<td>Histotechnology</td>
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<td>H03-L306</td>
<td>Transfusion Science</td>
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<td>H03-L322</td>
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<td>H03-L324</td>
<td>Hematology Laboratory 304</td>
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<td>H03-L325</td>
<td>Histotechnology Laboratory 305</td>
</tr>
<tr>
<td>H03-L326</td>
<td>Transfusion Science Laboratory 306</td>
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Medical Radiological Diagnostic Technology

Purpose
To develop proficiency in the management of patients and the safe operation and manipulation of x-ray equipment.

Program
Medical Radiological Diagnostic Technology is a two-year diploma program with a September entry date. The program is designed to provide the academic foundation and supervised practical experience to develop the required knowledge and skills for taking x-rays of diseased or injured areas of the human body. Training takes place at both Red River Community College and the training hospital that has accepted the student.

Entrance Requirements
A – Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S, Mathematics 300/40S and two of Physics 300/40S, Chemistry 300/40S and Biology 300/40S. (It is strongly recommended that Physics 300/40S be one of the two sciences);

or

- Adult Basic Education Pre-Technology/Adult 12;

and

B – satisfactory reading proficiency as measured by a reading test administered by the College;

and

C – completion of a hospital application form, a training preference sheet and a short autobiography. Details on this requirement will be sent to the applicant once a College application form and supporting educational documents are received;

and

D – attendance at an orientation and interview conducted by the hospital training centre;

and

E – submission of immunization records after notice of acceptance is received.

Note: Effective September 1996, entrance requirements will be Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S, Mathematics 300/40S, Physics 300/40S and one of Chemistry 300/40S or Biology 300/40S.

This is a special selection program. When the applicant has met entrance requirements A and B above, the application will be forwarded to the hospital training centre for consideration. The Selection Committee will interview applicants who have completed the preliminary requirements and will select students on the basis of academic preparation, maturity, motivation and potential to work as part of a health care team.

The application deadline for this program is April 18 (subject to change under extraordinary circumstances). Only applications processed before this date will be considered for the annual Fall intake of students. Therefore, applications should be submitted at the earliest possible date. Contact the Registration Department at 204-632-2327 or 1-800-903-7707 (outside Winnipeg in Canada) if you have any questions regarding this deadline.
Medical Radiological Diagnostic Technology (continued)

Entrance Requirements continued

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through E as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential

After successfully completing this program, the graduate will write the qualification examinations set by the Canadian Association of Medical Radiation Technologists (CAMRT). Successful candidates are awarded Registered Technologist (Radiography) certificates: RT(R). This certificate indicates a properly trained and competent person who meets the professional standards of, and is eligible for membership in, the CAMRT. As this program is nationally accredited, CAMRT certification as a RT(R) is recognized across Canada.

Most graduates are employed in hospitals and clinical x-ray departments, in laboratories and in some commercial chemical companies. Some graduates are working in related areas of teaching and research, and others are employed as technical advisors or representatives for x-ray equipment and supply manufacturers.

All graduates have opportunities to advance both in knowledge and status. The CAMRT offers advanced levels of certification, as well as many individual correspondence courses to prepare RT(R)s for jobs in specialty areas such as mammography and computed tomography. Graduates may also apply to magnetic resonance imaging and ultrasound programs.

Program Outline

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<tr>
<th>Term 1</th>
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<td>H04-X216 Radiographic Positioning</td>
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<td>H04-X105 Apparatus and Accessory Equipment</td>
<td>H04-X217 Apparatus and Accessory Equipment</td>
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<td>H04-X107 Patient Care and Interpersonal Skills</td>
<td>H04-X218 Principles of Radiographic Exposure and Imaging</td>
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<td>H04-X108 Radiation Protection</td>
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<td>H11-N120 Human Anatomy and Physiology</td>
<td>H04-X223 Radiobiology and Protection</td>
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</table>

Note: Students are responsible for obtaining certification in CPR by the end of the first year in the program.
Motor Vehicle Mechanic – Certificate

Purpose
To develop the knowledge and skills required to disassemble, inspect, machine, calibrate and reassemble motor vehicle units and components.

Program
Motor Vehicle Mechanic – Certificate is a 10-month certificate program with a September entry date. The program is designed to develop an understanding of the basic purpose, construction, operation and service of component parts and assemblies of an automobile.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended; or
- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Please note that reference books are essential components of the work procedures for this program so applicants require above-average reading vocabulary and comprehension. Applicants are strongly encouraged to take Reading Comprehension and Study Skills through the College's Continuing Education Department prior to entering skill training.

Employment Potential
Graduates of this program have found employment in service stations, dealerships, large corporations, farming communities and allied industries where they work in service/repair, sales or parts distribution. Graduates who have entered apprenticeship programs, and reached journeyperson level, work as journeyperson mechanics, shop supervisors, service managers, parts managers, machine operators and service station operators.

For further information on apprenticeship and possible transfer of credit, please see the Motor Vehicle Mechanic – Certificate program brochure.
## Motor Vehicle Mechanic – Certificate (continued)

### Program Outline

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<td>T01-T021</td>
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<td>T01-T023</td>
<td>Rear Axles and Drivelines – Theory</td>
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<td>T01-T025</td>
<td>Brakes – Hydraulics – Theory</td>
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<td>T01-T026</td>
<td>Brakes – Hydraulics – Practical</td>
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<td>T01-T027</td>
<td>Steering and Suspension – Theory</td>
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<td>T01-T028</td>
<td>Steering and Suspension – Practical</td>
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<tr>
<td>T01-T029</td>
<td>Automatic Transmissions – Theory</td>
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<td>T01-T030</td>
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<tr>
<td>T01-T032</td>
<td>Engine Construction and Operation – Theory</td>
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<td>T01-T033</td>
<td>Engine Construction and Operation – Practical</td>
</tr>
<tr>
<td>T01-T056</td>
<td>Electrical – Repairs and Service – Live Shop</td>
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<tr>
<td>T01-T058</td>
<td>Fuel Systems – Repairs and Service – Live Shop</td>
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<td>T01-T062</td>
<td>Transmission Overhaul Standard – Live Shop</td>
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<td>T01-T064</td>
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</tr>
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<td>T01-T066</td>
<td>Brakes – Hydraulic and Disc Power – Live Shop</td>
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<td>T01-T068</td>
<td>Steering Repairs – Live Shop</td>
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<td>T04-G510</td>
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<td>T13-M508</td>
<td>Motor Vehicle Mechanic Technician Math</td>
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<td>T13-SS08</td>
<td>Power Mechanics Science</td>
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<td>T14-C504</td>
<td>Communication</td>
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<tr>
<td>T13-W100</td>
<td>WHMIS Workshop</td>
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</table>
Motor Vehicle Mechanic – Diploma

Purpose
This new 36-week diploma program is designed to meet the demand for training in new technology. It supplements current Motor Vehicle Mechanic certificate programs and will prepare graduates to work in the electronic technician field. Training will combine instruction at the College with work experience. This program is delivered in the following format: three terms of six weeks each classroom instruction alternating with three terms of six weeks each work experience placement. This program would be an asset to both employees and employers due to the continued technological change and the need for constant updating.

Program
This program will include areas of study to support the skills needed for electronic technicians. Classroom instruction will be designed to broaden the student’s knowledge in the automotive electronics area as well as engine management, fuel injection, and ABS brakes.

Entrance Requirements
A — must have successfully completed a Motor Vehicle Mechanic – Certificate program at Red River Community College, Assiniboine Community College or Keewatin Community College or the Motor Vehicle Mechanic – Work Experience program at Red River Community College, and attend an orientation session;

or

B — must have a three-year Vocational Power Mechanics certificate with a grade of “C” or better in both theory and practical, and an interview by a College selection committee. Testing may be required;

or

— must have a minimum of two years appropriate work experience in the automotive service industry and an interview by a College selection committee. Testing may be required.

Program Outline

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tr>
<td>T01-G013</td>
<td>Electronic Information, Storage and Retrieval Systems</td>
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<td>T01-G015</td>
<td>Automotive Electrical and Electronics</td>
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<tr>
<td>T01-G017</td>
<td>Introduction to Computer Systems</td>
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<tr>
<td>T01-G019</td>
<td>Electrical Diagnosis</td>
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<tr>
<td>T01-G020</td>
<td>Practical Training in Industry 1</td>
</tr>
<tr>
<td>T01-G021</td>
<td>Electronic Fuel Injection Systems (Domestic)</td>
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<tr>
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<td>Electronic Fuel Injection Systems (Import)</td>
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<tr>
<td>T01-G025</td>
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<td>T01-G031</td>
<td>Advanced Steering and Suspension Systems</td>
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<tr>
<td>T01-G033</td>
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<tr>
<td>T01-G035</td>
<td>A/C System Diagnosis and Service</td>
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<td>T01-G037</td>
<td>Supplemental Restraints</td>
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<tr>
<td>T01-G040</td>
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<tr>
<td>T14-A026</td>
<td>Customer Relations</td>
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<tr>
<td>T14-A027</td>
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<td>T14-A028</td>
<td>Automotive-Related Business Practices</td>
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<tr>
<td>T13-W100</td>
<td>WHMIS Workshop</td>
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Motor Vehicle Mechanic — Work Experience

Purpose
To develop the knowledge and skills required to disassemble, inspect, machine, calibrate and reassemble motor vehicle units and components.

Program
Motor Vehicle Mechanic — Work Experience is a 10-month certificate program with two entry dates: September and October. The program is designed to develop an understanding of the basic purpose, construction, operation and service of component parts and assemblies of an automobile.

The program consists of an effective blend of classroom study, practical lab training and off-campus work experience in program-related industry. It goes beyond the traditional supplementary on-the-job training in that the student spends alternate six-week terms in the work force.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/23S or 101/20G. English 100/20S or 101/20G is strongly recommended; or
- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration.

All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Please note that reference books are essential components of the work procedures for this program and require above-average reading vocabulary and comprehension. Applicants are strongly encouraged to take Reading Comprehension and Study Skills through the College's Continuing Education Department prior to entering skill training.

Employment Potential
Graduates of this program have found employment in service stations, dealerships, large corporations, farming communities and allied industries where they work in service/repair, sales or parts distribution. Graduates who have entered apprenticeship programs and reached journeyperson level, work as journeyperson mechanics, shop supervisors, service managers, parts managers, machine operators and service station operators.

For further information on apprenticeship and possible transfer of credit, please see the Motor Vehicle Mechanic — Work Experience program brochure.

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Program Outline

T01-C026  Automotive Service Fundamentals – Theory
T01-C027  Automotive Service Fundamentals – Practice
T01-C029  Engines and Related Systems – Theory
T01-C030  Engines and Related Systems – Practical
T01-C032  Drivetrain – Theory
T01-C033  Drivetrain – Practical
T01-C034  Chassis: Suspension, Steering, Brakes – Theory
T01-C035  Chassis: Suspension, Steering, Brakes – Practical
T01-C036  Electrical – Theory
T01-C037  Electrical – Practical
T01-C041  Work Experience 1
T01-C042  Work Experience 2
T01-C043  Work Experience 3
T04-G516  Related Gas Welding
T13-M525  Motor Vehicle Technician Mathematics
T13-S607  Motor Vehicle Technician P/E Science
T13-W100  WHMIS Workshop
T14-C507  Communications 1
Municipal Engineering Technology

Purpose
Municipal Engineering Technology is a 30-month Co-operative Education diploma program within the Civil Engineering Technology program group. Students in this program will acquire the knowledge and skills needed to assist in the design and construction of municipal services and roadways, including soils and materials testing, engineering surveying, open channel flow hydraulics, terrain interpretation and environmental analysis.

Program
The Civil Engineering Technology program group consists of the Engineering Design and Construction, Municipal, Structural and Survey programs. Co-operative Education, which integrates two six-month terms of paid employment with six terms of classroom theory, is included in all of these programs. Red River Community College offers Co-operative Education as part of its education strategy to enhance students' career training opportunities.

All applications will be processed for entry into Civil Engineering Technology, where the emphasis will be on mathematics, engineering graphics, mechanics, surveying, communications and computer-assisted drafting. Students who successfully complete the first year of studies in Civil Engineering Technology may then apply for entry into Municipal Engineering Technology. The emphasis will shift to the study of hydraulics, hydrology, soil mechanics, roadway design, water supply and waste disposal design, terrain interpretation, environmental analysis and construction practices. In order to proceed in Co-operative Education terms, students must meet departmental academic requirements.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G and Physics 300/40S* or Physical Science 301/40G;
or
- Adult Basic Education Pre-Technology/Adult 12.

*Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment with consulting engineering companies and various government departments and agencies in the design and construction of sewer and water projects, highway projects, and earth-retaining and hydraulic structures.

Other graduates are employed in equipment and material sales and in the research and manufacture of construction-related products.
## Municipal Engineering Technology (continued)

### Program Outline

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**Civil Engineering Technology**

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<td>CIV-C292 Engineering Graphics 2</td>
<td>CIV-W300 Co-op Work Placement (16 weeks minimum)</td>
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<tr>
<td>CIV-C193 Computer-Assisted Drafting 1</td>
<td>CIV-C293 Computer-Assisted Drafting 2</td>
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<tr>
<td>CIV-C195 Mechanics</td>
<td>CIV-C295 Strength of Materials 1</td>
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<td>CIV-C196 Surveying 1</td>
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<td>CIV-C197 Communications</td>
<td>CIV-C297 Report Writing</td>
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<td>CIV-C199 Mathematics 1</td>
<td>CIV-C299 Calculus 1</td>
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<td>T13-W100 WHMIS Workshop</td>
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#### YEAR 2

**Municipal Engineering Technology**

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<td>CIV-C597 Engineering Economics</td>
<td>CIV-W600 Co-op Work Placement (16 weeks minimum)</td>
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<tr>
<td>CIV-C499 Calculus 2</td>
<td>CIV-U593 Water Supply and Waste Disposal 1</td>
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<td>CIV-U493 Terrain Analysis</td>
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<td>CIV-U495 Strength of Materials 2</td>
<td>CIV-U596 Roadway Design 1</td>
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<td>CIV-U496 Surveying 3</td>
<td>CIV-U598 Soil Mechanics 2</td>
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<tr>
<td>CIV-U498 Soil Mechanics 1</td>
<td>CIV-U599 Environmental Analysis</td>
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<td>CIV-C897 Costing and Contract Administration</td>
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<tr>
<td>CIV-U793 Water Supply and Waste Disposal 2</td>
<td>CIV-U892 Pavement Mix Design 2</td>
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<td>CIV-U795 Hydrology</td>
<td>CIV-U893 Water Supply and Waste Disposal 3</td>
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<tr>
<td>CIV-U796 Roadway Design 2</td>
<td>CIV-U894 Thesis Project</td>
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<td>CIV-U797 Project Management</td>
<td>CIV-U896 Urban Roadway Design</td>
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<tr>
<td>CIV-U798 Soil Mechanics 3</td>
<td>CIV-U898 Stabilization</td>
</tr>
</tbody>
</table>
Nursing

Purpose
To develop the knowledge and skills required to use the nursing process in the provision of direct nursing care to persons of all ages with commonly occurring health interferences.

Program
Nursing is a two-year diploma program with a September entry date. The program is designed to prepare graduates for eligibility to write examinations for registration in the Manitoba Association of Registered Nurses (MARN). Nursing has both theoretical and practical components and College instructors directly supervise the weekly practical experiences planned for the student.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation including English 300/40S, Mathematics 300/40S, 301/40G, or 200/30S; and one science at the 300/40S level (Chemistry 300/40S is strongly recommended);

or

— successful completion of College Preparation for Nursing. (Applicants who lack several of the required programs should consider the College Preparation for Nursing program, described in a separate brochure.);

and

B — completion of the supplementary application form;

and

C — successful completion of the prescribed reading skills test at the required competency level;

and

D — good health. Immunizations are required of all students and must commence as indicated upon notification of acceptance into the program;

and

E — must provide evidence of current certification in CPR at the Basic Rescuer level in the year of admission. Yearly re-certification is required.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through E as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

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Employment Potential

Graduates enter the workforce as beginning practitioners and have found employment in hospitals, personal care homes and with other health agencies.

Students who have standing in English 300/40S, and Chemistry 300/40S or Mathematics 300/40S, and who graduate with a diploma in nursing and are registered nurses, meet the minimum entrance requirements for the Baccalaureate program for Registered Nurses at the University of Manitoba.

Program Outline

**YEAR 1**

- B13-S106 Interpersonal Relations
- F01-C003 Activity for Life
- H11-N108 Introduction to Nursing
- H11-N109 Nursing Practice
- H11-N120 Human Anatomy and Physiology
- H11-N208 Nursing
- H11-N209 Nursing Practice
- H11-N220 Human Anatomy and Physiology
- H11-S101 Social Science
- H11-S201 Social Science
- H11-S301 Social Science (3)

**YEAR 2**

- B13-S201 Introduction to Sociology (Dnur)
- B13-S302 Social and Health Problems (Dnur)
- H11-N308 Nursing
- H11-N309 Nursing Practice
- H11-N311 Nursing Microbiology
- H11-N408 Nursing
- H11-N409 Nursing Practice
- H11-N405 Trends in Health Care
- H11-N406 Community Health
Nursing Prior Learning Assessment

Purpose
The purpose of the Prior Learning Assessment (PLA) program is to facilitate access into the diploma nursing program for those with prior nursing knowledge and experience.

Program
The PLA program is designed for people who have prior nursing knowledge and experience, in particular Licensed Practical Nurses, Registered Psychiatric Nurses and people who have completed some portion of a diploma nursing program elsewhere or who are graduate nurses from out-of-country. An applicant may have acquired “prior learning” in various situations including: credit courses at other educational facilities, non-credit courses and training programs, independent study, conference/workshop attendance, volunteer activities and on-the-job experience.

The learning will be documented through the completion of a portfolio by the applicant. Preparation of the portfolio is discussed at an orientation to the PLA process and/or an individual interview. Using the portfolio and other assessment methods, the prior learning in nursing will be assessed for learning that is college level and consistent with current course objectives and learning outcomes in the Nursing program. The entry level in the Nursing program for the PLA applicant is dependent upon the assessment of the applicant’s prior learning. The applicant will be invited to enter the program in the term where the level of competence warrants. This process realizes that learning is a life-long process. It may also decrease the amount of time actually spent at the College in pursuit of a nursing diploma. The PLA program is an individualized process designed to enable the applicant to pursue continuing education over a flexible time period.

Entrance Requirements
The PLA program is offered to anyone who has:
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation including English 300/40S, Mathematics 300/40S, 301/40G or 200/30S and one science at the 300/40S level. Chemistry is strongly recommended;
  or
- successfully completed College Preparation for Nursing;
  and
- completed the supplementary application form;
  and
- successfully completed the prescribed reading skills test;
  and
- a minimum of one year of full-time nursing experience in a licensed health care facility.
Piping Trades

Purpose
To develop the knowledge and skills required to install and repair plumbing, heating, fire-protection and other piping systems.

Program
Piping Trades is a nine-month program with a September entry date. The program is designed to develop skills in installing and repairing piping systems and in the safe use of tools and materials in accordance with piping, safety and building codes and regulations.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended;

or

- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Please note that reference books are essential components of the work procedures for this program so applicants require above-average reading vocabulary and comprehension. Applicants are strongly encouraged to take Reading Comprehension and Study Skills, through the College's Continuing Education Department, prior to entering skill training.

Employment Potential
Many graduates have found employment with plumbing, heating or fire-protection contractors, or in industrial plants as maintenance people. Some graduates have found employment with plumbing and heating wholesale or retail outlets. Job opportunities at the journeyperson level are as plumbers, steamfitters or sprinkler and fire-protection installers. After gaining work experience, some graduates have moved into positions as supervisors, estimators, plumbing contractors and building inspectors. Others are self-employed.

For further information on apprenticeship and possible transfer of credit, please see the Piping Trades program brochure.

Continued on next page
Piping Trades (continued)

Program Outline
T03-R013  Blueprint Reading and Sketching for Plumbing PE
T04-G520  Related Gas Welding
T13-M513  Plumbing P/E Math
T13-S513  Plumbing Science
T13-W100  WHMIS Workshop
T14-C502  Communication
T15-P007  Hot Water Heating – Theory
T15-P008  Hot Water Heating – Practical
T15-P009  Basic Sprinkler/Fire Protection – Theory
T15-P010  Basic Sprinkler/Fire Protection – Practical
T15-P011  In-Industry Work Experience
T15-P012  Introduction to the Piping Trades and General Information
T15-P013  General Shop Work – Practical
T15-P014  Piping and Materials – Theory
T15-P015  Piping and Materials – Practical
T15-P016  Regulations and Project Installations – Theory
T15-P017  Project Installations – Practical
Power Engineering

Purpose
To develop the knowledge and skills required for the safe operation of the major equipment in commercial, industrial and public buildings.

Program
The College offers three levels of Power Engineering training:
4th Class – five-month program with September entry date.*
3rd Class – five-month program with February entry date.*
2nd Class – 10-month program with September entry date.*

* The programs are not offered on an annual basis. The 4th Class and 3rd Class programs are offered on alternate years to the 2nd Class. Contact the Registration Department for scheduled entry dates.

The operation of major equipment in commercial, industrial and public buildings is closely regulated by Manitoba Labour. The physical size of the plant determines licensing requirements at the 1st, 2nd, 3rd or 4th Class level with the smaller plant requiring a 4th Class Power Engineer. The Power Engineering programs are designed to prepare the student for the applicable Manitoba Labour examination and the related type of plant in which the graduate would work.

Power Engineering has an advisory committee that includes representatives from the industry, government licensing representatives and College staff. Through this committee, the College keeps up-to-date with industry standards and the requirements of prospective employers.

Entrance Requirements
4th Class
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with English 200/30S or 201/30G, Mathematics 200/30S and one of Physics 200/30S or Chemistry 200/30S;

- Adult Basic Education 11A with supplemental mathematics and chemistry topics.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

3rd Class
A – 3rd Class Certificate from a provincial Department of Labour;

and

B – specific credits in Mathematics 200/30S or 290 (academic) and one of Physics 200/30S or 290 or Chemistry 200/30S or 290;

- Adult Basic Education 11A with supplemental mathematics and chemistry topics.

Mature Student Admission. All applicants must meet entrance requirements A and B above.

Continued on next page
Power Engineering (continued)

2nd Class
A – successful completion of the Red River Community College 3rd Class program or an equivalent day program* within the past five years;

or

B – if graduation took place prior to five years ago: 3rd Class Licence and specific credits in Mathematics 300/40S and Physics 300/40S;

or

C – if graduation took place prior to five years ago: 3rd Class Licence and a passing grade in a pre-admission test at the 3rd Class level in mathematics, Mechanics and Thermal Studies (to be administered by Red River Community College).

Mature Student Admission. All applicants must meet entrance requirement A or B or C above.

*Please contact the Registration Department for information on equivalent programs.

Employment Potential
Graduates have found employment in industrial plants, food-processing plants, cold-storage plants and in other commercial, industrial or public buildings.

Program Outlines

4th Class
T06-S102 Blueprint Reading
T06-S121 Thermal Studies
T06-S123 Instrumentation and Controls
T06-S124 Fuels and Combustion
T06-S125 Engines
T06-S131 Mechanics
T06-S133 Electrical Fundamentals
T06-S134 Boilers
T06-S135 Refrigeration
T10-M161 Mathematics (P.E. 4th)
T14-C124 Communications 1
T13-W100 WHMIS Workshop

3rd Class
T06-S202 Mechanical Drafting
T06-S221 Thermal Studies
T06-S223 Instrumentation
T06-S224 Fuels and Water Treatment
T06-S225 Turbines and Engines
T06-S231 Mechanics
T06-S233 Electrical
T06-S234 Boilers
T06-S235 Refrigeration
T10-M261 Mathematics (P.E. 3rd)
T13-W100 WHMIS Workshop
T14-C224 Communications 2

2nd Class
T06-A311 Control Instrumentation
T06-A314 ASME Codes
T06-A321 Thermodynamics
T06-A324 Water Treatment and Combustion
T06-A331 Applied Mechanics
T06-A334 Boilers, Pumps, and Piping
T06-B302 Mechanical Drawing
T06-B312 Electrotechnology
T06-B313 Plant Administration and Maintenance
T06-B325 Turbines and Engines
T06-B335 Refrigeration
T06-S322 Computers
T10-A361 Mathematics
T10-M261 Mathematics (RE. 3rd)
T13-W100 WHMIS Workshop
T14-C224 Communications 2
Power Equipment Technician

Purpose
To provide graduates with the skills and knowledge required for entry-level employment in the power equipment repair field. Upon successful completion of this program, the student will be able to service and repair common types of small gasoline-powered equipment.

Program
The program consists of a common core of courses followed by specific equipment training and includes shop practices, precision measuring, internal combustion engines and preventative maintenance, followed by instruction on the repair and maintenance of lawn and garden equipment, chain saws, snow throwers, electrical generating units, outboard motors, snowmobiles, all-terrain vehicles and motorcycles.

Entrance Requirements
A — Manitoba Grade 10/Senior 2 or equivalent secondary school preparation; 
or
— Adult Basic Education 10 Enhanced program; 
and
B — special selection criteria which include entrance testing in reading, mathematics and science; 
and
C — attendance at a mandatory information session, which may include a personal interview.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects and must meet entrance requirements B and C as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Note: You should be in good physical health. You should have no physical handicaps or respiratory difficulties. You should be able to lift 50 pounds on a regular basis and lifting 100 pounds occasionally may be required.

Employment Potential
Graduates may be employed by a variety of firms engaged in the sales or service of power equipment. Such firms may include agricultural equipment dealers, private power equipment sales and repair shops, rural agribusinesses and various federal, provincial and municipal government departments.

Continued on next page
Power Equipment Technician (continued)

Program Outline

T04-G510  Related Gas Welding
T13-M508  Motor Vehicle Mechanic Technician Math
T13-P001  Orientation to Power Equipment Technician
T13-P002  Shop Safety and Hand Tools - Theory
T13-P003  Shop Safety and Hand Tools - Practical
T13-P004  Basic Small Engine - Theory
T13-P005  Basic Small Engine - Practical
T13-P006  Fuel Systems - Theory
T13-P007  Fuel Systems - Practical
T13-P008  Electrical Systems - Theory
T13-P009  Electrical Systems - Practical
T13-P010  Engine Service - Theory
T13-P011  Engine Service - Practical
T13-P012  Outboard Motors - Theory
T13-P013  Outboard Motors - Practical
T13-P014  Outboard Motor Drives - Theory
T13-P015  Outboard Motor Drives - Practical
T13-P016  Motorcycle/ATV - Theory
T13-P017  Motorcycle/ATV - Practical
T13-P018  Motorcycle/ATV Drives - Theory
T13-P019  Motorcycle/ATV Drives - Practical
T13-P020  Snowmobile - Theory
T13-P021  Snowmobile - Practical
T13-P022  Lawn and Garden/Chainsaw - Theory
T13-P023  Lawn and Garden/Chainsaw - Practical
T13-S508  Power Mechanics Science
T13-W100  WHMIS Workshop
T14-C504  Communications
Precision Metal Fabrication

Purpose
To develop the knowledge and skills required to safely and effectively setup, adjust and operate press brakes, shears, turret punch presses and other related metal-forming equipment used in the metal fabrication industry.

Program
The Precision Metal Fabrication program is a nine-month certificate program with a September entry date. It consists of 60 percent theory and 40 percent practical training which includes shop work on campus at the College and industrial work experience placements.

Entrance Requirements
A – Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with English 201/30G and Mathematics 201/30G;

or

- Adult Basic Education 11A (science is optional);

and

B – a mandatory orientation session. Note: Diagnostic testing in mathematics and reading and writing skills will be administered prior to enrollment.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects and must meet entrance requirement B as outlined above. Mature students must be at least 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their applications a detailed resume and an official transcript, which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant’s advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates may be employed in a variety of firms engaged in metal fabrication. Potential employers include agricultural equipment manufacturers, transportation/vehicle manufacturers, custom steel fabricating shops and the aerospace industry.

Program Outlines
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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
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<tr>
<td>T04-A201</td>
<td>Interpretation of Engineering Drawings</td>
</tr>
<tr>
<td>T04-A202</td>
<td>Measuring Tools</td>
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<td>T04-A203</td>
<td>Sheet Metal and Related Materials</td>
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<td>T04-A205</td>
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<td>T04-A208</td>
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<td>T04-A209</td>
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<tr>
<td>T04-A210</td>
<td>Machine Shop Practice</td>
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<td>Work Experience</td>
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<tr>
<td>T13-W100</td>
<td>WHMIS Workshop</td>
</tr>
</tbody>
</table>
Radiation Therapy

Purpose
To develop the knowledge and skills required to work with the treatment of cancer by use of ionizing radiation.

Program
Radiation Therapy is a 24-month program followed by an optional four-week internship program. The program has an entry date of the first Monday in May and is designed to develop an understanding of the many aspects of a radiation therapist's daily work. It includes lectures and demonstrations in professional ethics, patient care, anatomy and physiology, elementary pathology, treatment planning, physics and apparatus, radiation therapy techniques, radiobiology and radiation protection. Teaching is shared by staff from various departments. Affiliation is also provided at the Health Sciences Centre, Department of Nuclear Medicine and Department of Radiology.

Please note that the 24 months are consecutive and that the academic terms are separated by clinical blocks. The entire second year of training is delivered at the Manitoba Cancer Treatment and Research Foundation.

Entrance Requirements

A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 300/40S or 301/40G, Mathematics 300/40S, and Physics 200/30S or 300/40S. (If Physics is at the 200/30S level, then another 300/40S level science is required);

Note: These are minimum requirements. Preference will be given to applicants with high academic achievements and/or study at the post-secondary level.

or

— Adult Basic Education Pre-Technology/Adult 12;

and

B — satisfactory reading proficiency, as measured by a reading test administered by the College;

and

C — completion of a Cancer Foundation application form and a short autobiography. Details on this requirement will be sent to the applicant once an application form and supporting educational documents are received;

and

D — attendance at an information tour and interview conducted by the selection committee of the Manitoba Cancer Treatment and Research Foundation;

and

E — submission of immunization records.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through E as outlined above. Mature students must be 20 years of age or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility.

Continued on next page
Radiation Therapy (continued)

Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

This is a special selection program. The Manitoba Cancer Treatment and Research Foundation selection committee screens applications for academic requirements, additional post-secondary education, work experience and other pertinent information. The short-listed applicants will be interviewed and students selected on the basis of all the above plus personal suitability, communication skills and ability to work as part of a health-care team.

Because the program starts in early May, applicants must have the academic prerequisites completed at the time of application or be able to provide documentation of completion by early January. Contact the Registration Department at 204-632-2327 or 1-800-903-7707 (outside Winnipeg in Canada) in regard to the deadline date for submission of applications.

Employment Potential

Graduates are eligible to write the qualification examinations set by the Canadian Association of Medical Radiation Technologists. Successful candidates are awarded Registered Technologist Therapy (RTT) certificates. Graduates of the Radiation Therapy program are employed in cancer treatment centres in Manitoba and across Canada.

Program Outline

YEAR 1

Term 1

Manitoba Cancer Treatment and Research Foundation

May - June (7 weeks)
Anatomy
Patient Care and Communications
Radiation Therapy 1
Treatment Planning
Radiation Physics
Radiation Protection 1

Term 2

Red River Community College and the
Manitoba Cancer Treatment and Research Foundation

September - December (15 weeks)
H04-T114 Radiation Protection 2
H04-T115 Patient Care and Interpersonal Skills for Therapy
H04-T116 Radiation Therapy 2
H04-T117 Treatment Planning
H04-T118 Radiation Physics and Apparatus

YEAR 2

The entire second year of training is delivered at the Manitoba Cancer Treatment and Research Foundation and is primarily clinical in nature. A short review term is held in early January in preparation for national certification exams held in May.
Refrigeration and Air Conditioning Technician

Purpose
The purpose of the program is to develop the skills required to install, service and repair commercial and industrial refrigeration and air conditioning equipment.

Program
Refrigeration and Air Conditioning Technician is a 10-month certificate program with a March entry date. The program is designed to provide both theoretical and practical knowledge of refrigeration systems, air conditioning, piping, welding and electrical wiring. Special emphasis will be placed on safety regulations as they pertain to using, reclaiming and reusing chlorofluorocarbons (CFCs).

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with Mathematics 200/30S or 301/40G and Physics 200/30S or Physical Science 201/30G. English 200/30S or 301/40G is strongly recommended;
- Adult Basic Education 11A.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Please note that reference books are essential components of the work procedures for this program and require above-average reading vocabulary and comprehension. Applicants are strongly encouraged to take Reading Comprehension and Study Skills through the College's Continuing Education Department prior to entering skill training.

Employment Potential
Graduates find employment with refrigeration and air conditioning companies as apprentices or as customer consultants in refrigeration retail stores.

Journeypersons work mainly in the construction of cooling plants, the manufacture of cooling cabinets and in the maintenance field for slaughter houses, refrigerated vans, hockey rinks, food retailers, air conditioners and industries demanding cold temperatures for their processes.

Graduates of this program may challenge the provincial Apprenticeship and Training Level 1 and 2 entrance tests and, if successful, be granted one or two levels of in-school training toward the apprenticeship. Time credit, reducing the length of apprenticeship, is at the discretion of the employer.

Continued on next page
Refrigeration and Air Conditioning Technician (continued)

Program Outline

T03-K051  Blueprint Reading and Sketching
T04-G520  Related Gas Welding
T11-R002  Safety and Fundamentals – Theory
T11-R004  Fundamental Principles
T11-R006  Refrigeration Systems – Theory
T11-R008  Refrigeration Systems – Practical
T11-R010  Commercial Systems – Theory
T11-R012  Commercial Systems – Practical
T11-R014  Calculation of Heat Transfer – Theory
T11-R016  Air Conditioning Systems – Theory
T11-R018  Air Conditioning Systems – Practical
T11-R020  Refrigeration Electrical – Theory
T11-R022  Refrigeration Electrical – Practical
T11-R050  In-Industry Training
T13-M521  Mathematics
T13-S523  Science
T13-W100  WHMIS Workshop
T14-C506  Communication
Structural Engineering Technology

Purpose
Structural Engineering Technology is a 30-month Co-operative Education diploma program within the Civil Engineering Technology program group. Students in this program will acquire the knowledge and skills needed to work with the engineering team in the formulation and calculations for structural building systems. Students will receive comprehensive training in soils investigation, foundation design, reinforced concrete design, steel, masonry and timber design and structural analysis.

Program
The Civil Engineering Technology program group consists of the Engineering Design and Construction, Municipal, Structural and Survey programs. Co-operative Education, which integrates two six-month terms of paid employment with six terms of classroom theory, is included in all of these programs. Red River Community College offers Co-operative Education as part of its education strategy to enhance students' career training opportunities.

All applications will be processed for entry into Civil Engineering Technology, where the emphasis will be on mathematics, engineering graphics, mechanics, surveying, communications and computer- assisted drafting. Students who successfully complete the first year of studies in Civil Engineering Technology may then apply for entry into Structural Engineering Technology. The emphasis will shift to the study of soil mechanics, structural analysis, concrete and masonry design, timber and steel design and construction practices.

In order to proceed in Co-operative Education terms, students must meet departmental academic requirements.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G, and Physics 300/40S* or Physical Science 301/40G;

- Adult Basic Education Pre-Technology/Adult 12.

*Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found job opportunities in structural design and inspection with consulting engineering firms, architectural firms, contractors or various government departments. Some graduates have found interesting careers in technical sales or as managers in the building materials or construction equipment fields.

Continued on next page
**Program Outline**

**YEAR 1**

**Civil Engineering Technology**

**Term 1**
- CIV-C192 Engineering Graphics 1
- CIV-C193 Computer-Assisted Drafting 1
- CIV-C195 Mechanics
- CIV-C196 Surveying 1
- CIV-C197 Communications
- CIV-C199 Mathematics 1
- T13-W100 WHMIS Workshop

**Term 2**
- CIV-C292 Engineering Graphics 2
- CIV-C293 Computer-Assisted Drafting 2
- CIV-C295 Strength of Materials 1
- CIV-C296 Surveying 2
- CIV-C297 Report Writing
- CIV-C299 Calculus 1

**Term 3**
- CIV-W300 Co-op Work Placement (16 weeks minimum)

**YEAR 2**

**Structural Engineering Technology**

**Term 4**
- CIV-C499 Calculus 2
- CIV-C797 Project Management
- CIV-D491 Building Science
- CIV-T494 Strength of Materials 2
- CIV-T495 Structural Analysis 1
- CIV-T498 Soil Mechanics 1

**Term 5**
- CIV-C497 Principles of Management
- CIV-T592 Structural Detailing Practices
- CIV-T594 Timber Design
- CIV-T595 Structural Analysis 2
- CIV-T596 Reinforced Concrete Design 1
- CIV-T598 Soil Mechanics 2

**Term 6**
- CIV-W600 Co-op Work Placement (16 weeks minimum)

**YEAR 3**

**Term 7**
- CIV-C597 Engineering Economics
- CIV-T792 Masonry Design
- CIV-T794 Steel Design
- CIV-T795 Structural Analysis 3
- CIV-T796 Reinforced Concrete Design 2
- CIV-T798 Soil Mechanics 3

**Term 8**
- CIV-C897 Costing and Contract Administration
- CIV-T892 Testing Materials
- CIV-T894 Thesis Project
- CIV-T895 Structural Analysis 4
- CIV-T896 Reinforced Concrete Design 3
- CIV-T898 Foundation Design
Survey Engineering Technology

Purpose
Survey Engineering Technology is a 30-month Co-operative Education diploma program within the Civil Engineering Technology program group. Students in this program will acquire the knowledge and skills needed to work in the legal and engineering surveying fields. Students will receive comprehensive training in land, topographic, construction, mining, hydrographic and geodetic surveying, as well as photogrammetry and cartography.

Program
The Civil Engineering Technology program group consists of the Engineering Design and Construction, Municipal, Structural and Survey programs. Co-operative Education, which integrates two six-month terms of paid employment with six terms of classroom theory, is included in all of these programs. Red River Community College offers Co-operative Education as part of its education strategy to enhance students' career training opportunities.

All applications will be processed for entry into Civil Engineering Technology, where the emphasis will be on mathematics, engineering graphics, mechanics, surveying, communications and computer-assisted drafting. Students who successfully complete the first year of studies in Civil Engineering Technology may then apply for entry into Survey Engineering Technology. The emphasis will shift to the study of advanced survey computations, route surveys, plan preparation, town planning, astronomy, photogrammetry, cartography, control and legal surveys.

In order to proceed in Co-operative Education terms, students must meet departmental academic requirements.

Entrance Requirements
- Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with Mathematics 300/40S, English 300/40S or 301/40G, and Physics 300/40S* or Physical Science 301/40G;
  
  or

- Adult Basic Education Pre-Technology/Adult 12.

*Physics 300/40S is strongly recommended as a more appropriate background for technology.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment opportunities in a broad range of construction and resource industries, and in government services. They have been hired for jobs in land surveys, construction and topographic surveys, mining surveys, hydrographic and geodetic surveys.

Continued on next page
Survey Engineering Technology (continued)

A graduate also has the opportunity for further technical advancement. Credits may be obtained towards a commission as a Manitoba Land Surveyor through the Western Canadian Board of Examiners for Land Surveyors. A baccalaureate degree can be completed in an accredited university program. These advancements are completed by serving a term of Articles and successfully completing final professional examinations.

Program Outline

**YEAR 1**

**Civil Engineering Technology**

**Term 1**
- CIV-C192 Engineering Graphics 1
- CIV-C193 Computer-Assisted Drafting 1
- CIV-C195 Mechanics 1
- CIV-C196 Surveying 1
- CIV-C197 Communications
- CIV-C199 Mathematics 1
- T13-W100 WHMIS Workshop

**Term 2**
- CIV-C292 Engineering Graphics 2
- CIV-C293 Computer-Assisted Drafting 2
- CIV-C295 Strength of Materials 1
- CIV-C296 Surveying 2
- CIV-C297 Report Writing
- CIV-C299 Calculus 1

**Term 3**
- CIV-W300 Co-op Work Placement

**YEAR 2**

**Survey Engineering Technology**

**Term 4**
- CIV-R492 Plan Preparation 1
- CIV-R493 Computer Applications
- CIV-R494 Photogrammetry
- CIV-R496 Theory and Use of Instruments 1
- CIV-R498 Surveying 3
- CIV-R499 Mathematics 2

**Term 5**
- CIV-C497 Principles of Management
- CIV-C499 Calculus 2
- CIV-R592 Route Surveys
- CIV-R594 Cartography 1
- CIV-R598 Theory and Use of Instruments 2
- CIV-R599 Advanced Survey Computations 1

**Term 6**
- CIV-W600 Co-op Work Placement

**YEAR 3**

**Term 7**
- CIV-C597 Engineering Economics
- CIV-R792 Terrain Interpretation
- CIV-R794 Cartography 2
- CIV-R796 Advanced Survey Computations 2
- CIV-R798 Legal Survey 1
- CIV-R799 Control Surveys 1

**Term 8**
- CIV-R892 Town Planning
- CIV-R894 Geographic Information Systems
- CIV-R895 Hydrology
- CIV-R896 Astronomy
- CIV-R898 Legal Survey 2
- CIV-R899 Control Surveys 2
Telecommunications

Purpose
To develop the electronic knowledge and skills required to function in an entry-level job in the telecommunications industry.

Program
Telecommunications is a 10-month certificate program with 35 hours per week scheduled class time. There are two entry dates to the program: September and December. Evaluation in the program is based on skill competency, as determined through written assignments, tests and/or practical demonstration. Training is designed to emphasize hands-on experience in all skill areas and there is a close coordination of theory and application.

Entrance Requirements
- Manitoba Grade 11/Senior 3 or equivalent secondary school preparation with Mathematics 200/30S and one of Physics 200/30S or Physical Science 201/30G. English 200/30S or 201/30G is strongly recommended;
- Adult Basic Education 11A.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 11/Senior 3 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates have found employment with telephone and telecommunication companies as installers and maintenance technicians, with banks and copy machine companies as service technicians, and with radio communication companies as radio and equipment technicians. Some graduates have chosen to work for a manufacturer of telecommunication equipment as field-service technicians, quality-control checkers or equipment technicians.

Please note that some employers require Mathematics 300/30S as a condition of employment.

Program Outline

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>T12-I001</td>
<td>DC Fundamentals</td>
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<td>Multiplexing Techniques</td>
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<td>T12-I003</td>
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<td>T12-T012</td>
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<td>T12-I016</td>
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<td>T13-W100</td>
<td>WHMIS Workshop</td>
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</tbody>
</table>
Tourism

Purpose
The Tourism program will provide graduates with the knowledge, skills and attitudes required to function in a line position within the various sectors of the tourism industry.

Program
This is a 12-month program with a four-month Co-operative Education component. Co-operative Education aims at an effective blend of classroom study and off-campus work experience in a program-related industry. The program outline was developed with the assistance of representatives from the various sectors of the tourism industry in Manitoba.

Entrance Requirements
A - Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with English 301/40G/40SC and Mathematics 301/40G;

and

B - a mandatory information session provided by the Tourism program faculty;

and

C - a personal interview.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B through C as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Graduates may find employment in various sectors of the Tourism industry. This could include working in travel and visitor information positions, as tour guides and for festival and community and tourism organizations in a variety of customer service roles.

Program Outline
B09-A113 Human Resource Management
B09-A114 Co-operative Education
B09-T100 Canadian Tourist Destinations
B09-T101 Administration and Office Procedures
B09-T102 Visitor Services
B09-T200 Tourism Perspectives
B09-T201 Selling Tourism
B09-T202 Tourism Research Techniques
B09-T301 Marketing Tourism
B09-T302 Tourism Public Policy and Initiatives
B09-T303 Tourism Industry Forum
B11-T010 Accounting Procedures 1

B09-A113 Human Resource Management
B09-A114 Co-operative Education
B09-T100 Canadian Tourist Destinations
B09-T101 Administration and Office Procedures
B09-T102 Visitor Services
B09-T200 Tourism Perspectives
B09-T201 Selling Tourism
B09-T202 Tourism Research Techniques
B09-T301 Marketing Tourism
B09-T302 Tourism Public Policy and Initiatives
B09-T303 Tourism Industry Forum
B11-T010 Accounting Procedures 1

B11-T020 Accounting Procedures 2
B11-T030 Tourism Management
B12-H110 Economics
B13-S514 Human Behavior in Organizations (HRA)
B15-S109 Computer Applications
B16-E841 Basic Business Communication
B16-E843 Advanced Business Communication
B16-E852 Intermediate Business Communication
Visual Language Interpreter Training

Purpose
The purpose of the program is to develop the skills required to function as an American Sign Language (ASL)/English interpreter in facilitating communication between hearing and Deaf individuals in a wide variety of settings and for diverse populations.

Program
The Visual Language Interpreter Training Program (ITP) is a two-year diploma program with a biennial September entry date. The program is designed to increase the interpretation student's proficiency in ASL and English; to develop the skills necessary for consecutive and simultaneous interpretation and to provide cognitive and practical tools to interact as a professional interpreter in both the Deaf and hearing communities.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation with one of English 300/40S or 301/40G; or
— Adult Basic Education 11B;

B — an interview with the Visual Language Interpreter Training Program selection committee;

C — a fluent level of ASL proficiency, as determined through an individual evaluation by the selection committee.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 12/Senior 4 standing but must have successfully completed the specific subjects and must meet entrance requirements B and C as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

This is a special selection program. The selection committee chooses candidates on the basis of educational preparation, ASL and English skills, maturity and aptitude for a career as an interpreter. Applicants are encouraged to do some background research on this profession before attending the interview.

Applicants should be available to attend an interview in Winnipeg during the month of April of an intake year. Both the interview and screening of English and ASL language skills will take place at that time.

Because this is a special selection program, an early deadline for submission of applications has been set at January 31 of each year of intake.

Continued on next page
Visual Language Interpreter Training (continued)

Employment Potential
As the demand for ASL/English interpreters grows across Canada, employers have hired graduates in numerous settings. Graduates work in interpreter referral agencies, in post-secondary institutions, as freelance interpreters and in many specialized settings such as medical, legal, employment, government, educational, mental health, recreational, religious and performing arts areas.

Program Outline

**Term 1**
- S01-B102 Culture and Ethnology 1
- S01-B114 English 1
- S01-B134 ASL 1
- S01-B137 Building Translation Skills: English
- S01-B152 Deaf History
- S01-B156 Introduction to the Interpreting Field

**Term 2**
- S01-B108 Deaf Culture
- S01-B124 English 2
- S01-B135 ASL 2
- S01-B138 Culture And Ethnology 2
- S01-B139 Building Translation Skills: ASL
- S01-B155 Introductory Linguistics for Interpreters

**Term 3**
- S01-B113 Cross Cultural Interaction
- S01-B118 Literature Review 1
- S01-B140 Ethics 1
- S01-B141 ASL 3
- S01-B142 Building Translation Skills: English/ASL
- S01-B143 Interpretation Lab 1: Consecutive Interpretation
- S01-B144 Practicum 1: Observation Practicum

**Term 4**
- S01-B121 Interpretation Settings
- S01-B145 ASL 4
- S01-B146 Ethics 2
- S01-B147 Interpretation Lab 2: Consecutive English to ASL
- S01-B148 Interpretation Lab 3: General Practice Lab

**Term 5**
- S01-B123 ASL 5
- S01-B126 Interpretation Lab 5: General Practice Lab
- S01-B127 Interpretation Lab 6: Mock Situations
- S01-B130 Special Projects: Independent Study
- S01-B149 Interpretation Lab 4: Consecutive Interpretation
- S01-B150 Interpretation Lab 7: Simultaneous English to ASL
- S01-B151 Practicum 2

**Term 6**
- S01-B132 Practicum 3
- S01-B133 Literature Review 2
Vocational Industrial Teacher Education

Purpose
To develop the knowledge and skills required for Vocational Industrial Teacher certification by Manitoba Education and Training.

Program
Vocational Industrial Teacher Education is a 10-month program with a September entry date. The program is designed to meet the certification requirements of Manitoba Education and Training for vocational industrial teachers. Graduates from the Vocational Industrial Teacher Education program may be granted credit of up to 69 credit hours (two years) in the four-year Bachelor of Education program at the Faculty of Education, University of Manitoba.

Entrance Requirements
A — Manitoba Grade 12/Senior 4 or equivalent secondary school preparation. Mathematics 300/40S or 301/40G and English 300/40S or 301/40G are recommended;

and

B — a Journeyperson’s Certificate in a designated trade with a minimum of six years approved work experience in that trade, including the apprenticeship period;

or

— evidence of satisfactory trade training in a non-designated trade with a minimum of six years approved work experience in that trade, including the training period;

or

— evidence of satisfactory training in an approved technical or industrial area other than the trades with a minimum of six years of approved work experience, including the training period specific to the technical or industrial area;

and

C — submission of acceptable verification of all work experience, as set out in B above *

and

D — submission of a personal resume;

and

E — an interview with the Vocational Industrial Teacher Education Admissions Committee.

*Acceptable verification of training period/work experience would include a journeyperson’s licence or, in the case of a non-designated trade, documents which verify required training and supervised experience. As well, the applicant must include letters of reference which confirm six years of work experience in the applicant’s area of specialty.

Mature Student Admission. Mature students may submit either the Manitoba Grade 12/Senior 4 Diploma or GED 12 standing in lieu of Grade 12/Senior 4; however, they must also meet entrance requirements B, C, D, and E above and be 21 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Chair, Teacher Education, for review.

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Vocational Industrial Teacher Education (continued)

Entrance Requirements (continued)
This is a special selection program. The selection committee looks for applicants who have an above average skill/trade background, adequate academic preparation and an aptitude for teaching. Applicants who are found to be marginal in mathematics or reading, but who are otherwise suitable candidates, may be required to take remedial programs to overcome deficiencies.

Employment Potential
Upon successful completion of this program, the graduate will be eligible for a Special Vocational Industrial teaching certificate issued by Manitoba Education and Training, and a diploma from Red River Community College. Graduates have found employment in high schools that offer vocational industrial programs and in community colleges.

For further information on possible transfer of credit, see the Vocational Industrial Teacher Education program brochure.

Program Outline

YEAR 1
B23-V101 Vocational Training and Related Work Experience

YEAR 2
Term 1
B22-E206 Educational Psychology
B23-E103 Audiovisual and Technical Education
B23-E104 Communication Skills
B23-E105 General Teaching Methods 1
B23-E201 Organizing Industrial Education Facilities
B23-V202 Introduction to Microcomputers

Term 2
B22-E204 Educational Testing and Evaluation
B22-E210 Classroom Counselling
B23-E202 Principles of Industrial Education
B23-E203 Course Development in Industrial Education
B23-E205 General Teaching Methods 2

Term 3
B23-T202 Student Teaching
Welding

Purpose
To develop the skills and knowledge required to safely and effectively perform the oxyacetylene, arc, tungsten-inert-gas, and metal-inert-gas welding processes and related operations.

Program
Welding is a seven-month certificate program with a September entry date. The program comprises five hours each day of practical shop work and two hours of classroom instruction in welding, mathematics, science, industrial communications and blueprint reading.

Please note that because Workers Compensation regulations stipulate that steel-toed footwear must be worn in industrial workplaces, students are required to provide and wear appropriate safety footwear in welding and machine shops, both in the College and during in-industry placements.

Entrance Requirements
- Manitoba Grade 10/Senior 2 or equivalent secondary school preparation with Mathematics 100/20S or 101/20G and Science 100/20S or 101/20G. English 100/20S or 101/20G is strongly recommended; or
- Adult Basic Education 10.

Mature Student Admission. Mature student applicants are not required to have a complete Grade 10/Senior 2 standing but must have successfully completed the specific subjects as outlined above. Mature students must be 20 years of age on or before September 30 in the year of registration. All mature student applications are referred to the Director of Registration to determine applicant suitability. Applicants must include with their application a detailed resume and an official transcript which may assist in determining eligibility. Entrance requirements stated for each program represent the minimum prerequisites. It is to an applicant's advantage to acquire the best education possible prior to entering a program at the College. Testing by the College may be necessary.

Employment Potential
Some graduates have found employment in aircraft maintenance, in the manufacturing of farm equipment, and in heavy-equipment repairs. Other graduates are employed in highway construction, northern mines and hydroelectric power plants.

Program Outline

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<td>Blue Print Reading and Sketching for Welding</td>
<td>T04-A052</td>
<td>Tungsten Inert Gas Welding TIG</td>
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<td>T04-A011</td>
<td>Safety Precautions in Welding and Cutting</td>
<td>T04-G011</td>
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<td>T04-A021</td>
<td>General Principles of Arc Welding — Theory</td>
<td>T04-G013</td>
<td>Fusion (Gas) Welding, Brazing and Flame Cutting</td>
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<td>T04-A022</td>
<td>Fusion Welding</td>
<td>T04-G021</td>
<td>Principles of Flame Cutting and Miscellaneous Application</td>
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<td>T04-A031</td>
<td>General Principles (Gas Metal Arc and Tungsten Inert)</td>
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<td>T13-S504</td>
<td>Welding Science</td>
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<td>T04-A041</td>
<td>Combined Review and Testing</td>
<td>T13-W100</td>
<td>WHMIS Workshop</td>
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<td>T14-C502</td>
<td>Communication</td>
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B01-A101 Basics of Form
Basics of Form is a study of the elements of design. Students will develop an understanding of point, line, plane and texture in imagery and page composition. Spatial relations in visual design will be investigated.

B01-A102 Principles of Drawing
Principles of Drawing is an introductory course in life drawing skills. Students will concentrate on revivisalizing (learning how to examine the world around them) and developing basic rendering skills. Students will become acquainted with drawing media and support surfaces, develop an awareness of structure in natural and man-made forms, apply basic line drawing techniques, render the structure of the human skull, execute portraits from life and develop planal compositions.

B01-A103 Basic Art Production Techniques 1
Basic Art Production is an introduction to the process and mechanics of producing camera-ready artwork for printing production. Students will develop basic technical skills used to produce mechanical artwork. Workplace health and safety will be discussed.

B01-A108 History of Graphic Design
An introduction to the history of graphic design and art, this course will explore the evolution of graphic communication and art. This presentation will deal with visual communication from prehistoric times through to ancient Egypt and Medieval civilizations up to the invention of movable typeographic printing and the Renaissance.

B01-A109 Intro to Computers for Electronic Publishing
The graphics industry as a whole is moving towards skill areas that require expertise in related computer applications. This course is an introduction to the microcomputers used by the graphics industry. Students will learn the basic operating commands, terms, and technology of the IBM platform computer. Constant references will be made to the practical applications of computer systems used in graphic design, illustration, multimedia presentations and electronic prepress.

B01-A110 WHMIS Training
Students will learn about health and safety in the workplace by applying knowledge of the requirements as set out by the Workplace Safety and Health Act. Particular emphasis will be placed on materials and procedures used in the graphic communications industry. The student will learn to visually recognize and demonstrate use of WHMIS standards. This is a required course.

B01-A111 Reproduction Methods and Materials
This course introduces the students to the theory behind the preparation of mechanical art for various printing processes. This term will explore typesetting technology, terms used and copy fitting methods. This course is a prerequisite for Reproduction Methods and Materials B01-A216.

B01-A203 Basic Art Production Techniques 2
This term of Basic Art Production will introduce the concept of mechanical color separation, film cutting and proofing. Students will gain basic skills in camera and stripping techniques used in the graphic arts industry.

B01-A211 History of Graphic Design
A continuing introduction to the history of graphic design and art, this course will explore the evolution of visual communication. This presentation will deal with the birth of printing, graphic design and typography. The evolution of art and graphic communication through the Renaissance in Europe will be explored. History of Graphic Design B01-A108 is a prerequisite for this course.
**B01-A212 Introduction to Electronic Publishing 2**

Training will emphasize hands-on experience with page creation software. Through a series of assignments, students will be encouraged to explore the electronic publishing medium. They will develop skills on IBM-compatible computers. Windows, Windows Write and Paint applications will be taught. PageMaker and CorelDRAW programs will be introduced.

**B01-A213 Life Drawing**

Life Drawing is a continuation of basic drawing skills developed in Principles of Drawing B01-A102. Students will apply rendering skills to three-dimensional drawing. Students will apply the study of composition, anatomy, figure drawing, linear perspective and value (tone) in their rendering assignments. Each unit of instruction is introduced through a lecture and/or demonstration and students are provided with handouts as reference material.

**B01-A215 Graphic Design**

This course is an introduction to visual design using tonal relationships and color. Emphasis is placed on the understanding of color theory, color mixing and the application of color to visual statements.

**B01-A216 Reproduction Methods and Materials**

Reproduction Methods and Materials will explore printing processes, camera-ready artwork and basic camera techniques applied to line art and halftones. Students will understand the process followed from paste-up to stripping. Emphasis will be placed on masking, windows and the preparation of overlays for color. This course is a prerequisite for Reproduction Methods and Materials B01-A308.

**B01-A301 Graphic Design**

Graphic Design introduces type as fundamental elements of design. The history and development of letterforms is discussed. Emphasis is placed on the use of letterforms as a means of visual communication and artistic expression.

**B01-A302 Sketching for Illustration**

Sketching for Illustration is an introduction to expressive life drawing and illustration. Students will work with full colour and mixed medium applying their rendering skills to illustration problems presented by the instructor. Felt marker rendering techniques will be developed for presentation art work and students will be encouraged to develop more personalized and interpretive drawing.

**B01-A308 Reproduction Methods and Materials**

Term 3 Reproduction Methods and Materials will cover full color printing and bindery process, electronic prepress and imposition. Students will learn through lectures, demonstrations and industry tours. Electronic image enhancement and modification will be discussed.

**B01-A309 Layout and Design**

This course involves looking at the basic principles of design and applying these in practical exercises. Composition of typographic and illustrative elements, copyfitting, photo cropping and scaling, along with reproduction methods and materials are explored. The aim is to give the student some fundamental skills towards layout of magazine/newspaper advertisements and newsletters, coupled with a grasp of the terminologies used in the graphic arts industry.

**B01-A313 Advanced Production**

Advanced production techniques used in printing will be addressed in this term. Students will study electronic prepress systems and production controls. Field trips to production houses and printers will be an important part of this term.
B01-A315 History of Graphic Design
A continuing introduction to the history of graphic design, this course will explore the effects of the industrial revolution on graphic design. The invention of photography, Victorian-era graphics, the Arts and Crafts movement, Art Nouveau and graphic design at the turn of the 20th century will be discussed. History of Graphic Design B01-A211 is a prerequisite for this course.

B01-A316 Work Experience 1
The learner will participate in a two-week work experience placement while enrolled in the first year of the Advertising Art program. This work placement will be at the end of the Spring term. The learner will work in a graphic design studio, advertising agency or printing house and will gain first-hand knowledge of the operation, procedures and expectations of the industry.

B01-A318 Introduction to Electronic Publishing 3
Operation of the Apple Macintosh computer using the FreeHand and QuarkXPress programs and application of design concepts to complete practical assignments.

B01-A403 Electronic Publishing
The learner will be introduced to electronic publishing hardware and software. With constant reference to the traditional design skills, emphasis will be placed upon the manipulation of page-creation software. Through a series of hands-on assignments, students will be able to produce work at a professional level, using a variety of hardware devices.

B01-A406 Advertising Design
The student will be presented with up-to-date practical assignments in design for print media formats. The instructor will act as art director and will give specific instructions on how a problem is to be approached. Particular attention is placed on continuity in ad series and campaigns. Projects presented will require students to prepare comprehensive layouts, write rationales and make presentations in class.

B01-A407 Graphic Design
The student will approach graphic design as an objective problem-solving activity involving thorough research and analysis of concrete and abstract information. This process involves poster design based upon knowledge acquired via the History of Graphic Design and Art, followed by Consumer Packaging, which focuses on the historical and contemporary. Students will come to balance objective and subjective concerns. Attention will also be given to students' traditional and computerized production art skills.

B01-A419 History of Graphic Design
A continuing introduction to the history of graphic design and art, this course will explore the development and growth of graphic design and art as it influenced and was influenced by modern art and the Bauhaus through to post-modernism. History of Graphic Design B01-A315 is a prerequisite for this course.

B01-A420 Work Experience 2
The learner will participate in a three-week work experience placement while enrolled in the the second year of the Advertising Art program. This work placement will take place during the Winter term. The learner will work in a graphic design studio, advertising agency, or printing house, and will gain first-hand knowledge of the operation, procedures and expectations of the industry.

B01-A421 Practicum
This course gives credit for experience gained through summer employment. To qualify for this credit, the learner will work a minimum of eight weeks under the supervision of an experienced art director in a job directly related to the student's program of study. The work placement will be approved by the Chair and will follow a prescribed training plan.
B01-A422 Design Management
Design Management averages approximately one hour lecture and one hour practical application per week. Lectures involve guided practice in design management methods and procedures that carry over into practical application. The forecasting and planning of design project hours, the recording and management of tasks, hours and materials, the quoting or estimating of time and material costs, the tracking of project progress, the preparation of written proposals and contracts and the preparation of service bureau and printing specifications are taught. Design Management students are expected to maintain accurate records for all on-going assignments within the Advertising Art program.

B01-A423 Publication Design
Publication Design averages approximately one hour of classroom lecture and six hours of practical application per week. Lectures involve a general history of publication design, the anatomy of publications and the dynamics and application of typography, photography and illustration in publication, publication design principles and methods and procedures of publication production management. Practical application involves design assignments which take the student through the problem-solving process. The manipulation of copy and type and the conceptualizing and designing of graphics, photographs and illustrations within the prescribed objective will be taught. Assignments are based upon a variety of publication formats.

B01-A424 Rendering for Illustration
Rendering for Illustration is a forum for the development of communication art. This course will deal with the exploration of artists' materials and techniques. It will focus on the development of artistic ability and individual direction, involve concept development and will have practical application within other courses offered in the Advertising Art program.

B01-A425 Electronic Prepress Theory
Electronic Prepress Theory consists of examining concepts in the desktop prepress from black and white photography to four-color separation and examination of technological concepts relating to output essentials which include paper and film output. Technology, terminology and processes will be viewed as they pertain to desktop prepress color. This is a theory course.

B01-A501 Advertising Design
This course will study the design of advertising as a process of graphic design and communication. The student will develop skills in project analysis, research and evaluation. Projects presented will require the student to consider contemporary style and to effectively integrate typography and illustrative material. The student is expected to further develop professional skills in craft and practice.

B01-A507 Graphic Design
The students' activity in research, analysis and solution continues with specific attention given to corporate identity design: the design of symbols, logos and icons and their application to various items composed within an identity manual. Attention will also be given to students' traditional and computerized production art skills. Real projects may also be presented to students. This will involve direct client/designer contact with real outcomes.

B01-A518 Creative Imaging
With constant reference back to traditional design and illustration skills, students will be taught high-end imaging software. Emphasis will be placed upon both MS-DOS and Macintosh environments. Through a series of hands-on assignments that encourage serious exploration of the medium, students will be able to produce electronic artwork to a professional level using a variety of software, hardware and input/output devices.
B01-A519 Applied Electronic Prepress
Applied Electronic Prepress develops Aldus FreeHand 3.1 and QuarkXPress 3.1 in great depth. This advanced course looks into prepress concepts that affect the output that the designer controls through files they have created using the computer. The practical prepress concepts will be further developed through actual assignments which will be involved with the prepress concepts that are pertinent to the industry standards and changes today.

B01-A520 Rendering for Illustration 2
Rendering for Illustration 2 is a forum for the development of communication art. This course will deal with the exploration of artists' materials and techniques applied to illustration for graphic communication. It will focus on the development of artistic ability and direction, involve concept development and will have practical application within other courses offered in the Advertising Art program.

B01-A522 Design Management
Term 5 Design Management averages approximately one hour lecture and one hour practical application per week. Lectures involve guided practice in design management methods and procedures that carry over into advanced application. The on-going forecasting and planning of design project hours, the recording and management of tasks, hours and materials, the on-going quoting or estimating of time and material costs and the tracking of project progress is still stressed but with the added dimension of preparing advanced written proposals and understanding legal obligations and contracts and the preparation of service bureau and printing specifications. Design Management students are expected to maintain accurate records for all Advertising Art program assignments.

B01-A523 Publication Design
Publication Design averages approximately one hour of classroom lecture and six hours of practical application per week. Lectures involve advanced anatomy of publications, typography, photography and illustration in publication and advanced methods and procedures of publication production management. Practical application is still on-going with design assignments which take the student through advanced problem-solving processes. The manipulation of copy and type and the conceptualizing and designing of graphics, photographs and illustrations within the prescribed objective is at a higher level.

B01-A601 Advanced Advertising Design
This term will be used to polish professional skills. Students will get involved in more complicated advertising problems. They will learn to work as part of a team that includes copywriters and production artists. Assignments will be designed to address legal and moral issues that affect the profession of graphic design.

B01-A616 Advanced Graphic Design Problems
Each student will be required to complete a major term project under the direction of the course instructor. A co-operative assignment will be undertaken with other disciplines from within the College and/or advertising agencies or studios from the industry. Publication design will also be a focus: the design of large volume magazines and/or corporate literature, i.e., annual reports. Students will be required to make a project presentation to a panel of representatives selected from the industry. Students will be instructed in presentation and job search techniques.

B01-A617 Portfolio Presentation
A portfolio of work completed in Year 2 will be presented to an examining panel made up of instructors and others knowledgeable in visual communication. The student will be required to demonstrate an acceptable level of professional preparedness in design and/or illustration. The student will be evaluated on the quality of work presented, technical knowledge, communication skills and general professional attitude.
B01-A620 Advanced Rendering for Illustration
Advanced Rendering for Illustration is the final term of Advertising Art drawing. Students are challenged to conclude their artistic exploration by focusing on an individual direction in illustration. By the end of the term, students are expected to have a body of work which addresses a range of course matter and media.

B01-A621 Advanced Electronic Prepress
This course is a continuation of Applied Electronic Prepress. Students will advance the concepts learned in Term 4. Graphic design and illustration assignments will be carried through to the printing process using both IBM and Apple Macintosh platforms. Final film will be output using an Imagesetter.

B01-A622 Design Management
This course is a continuation of Design Management B01-A521. Students will be taught studio organization and management skills that will establish operational budgets, forecast capital cost and human resource needs. The basics of developing a business plan and registering a business will be discussed.

B01-A623 Advanced Publication Design
Advanced Publication Design is a continuation of Publication Design B01-A523. Students will be challenged with a series of increasingly complicated problems in the design and production of newspapers, magazines and books. Students will be expected to develop personal concepts related to the application of text and the visualization of illustrative material in their design solutions.

B01-A624 Advanced Creative Imaging
This course will teach advanced skills in computer graphics and illustration. Through a series of hands-on assignments, students will produce presentation graphics. Image manipulation and retouching, color image scanning and video capture will be taught. Output for high-end presentation and print graphics will be addressed.

B02-P516 Photojournalism 1
This introductory course provides the student with the theory and practical skills to make photographs to complement the written word. The following topics are covered in this course: the major developments in documentary and photojournalistic photography from 1983 to present, the camera and its controls, processing of the record, enlarging and developing the print, lighting for photography and the techniques for improving photographs.

B02-P626 Advanced Photojournalism 2
In this course the student is taught how to research, photograph, process and print and caption a photo story at a professional level. Topics covered in this course include: the news photograph, the feature photograph, the photograph sequence and the photograph and essay.

B05-L001 Introduction to Libraries
This course is an introduction to various types of libraries, their organization, purpose, function and services. Levels of library employees are studied, with particular emphasis on the role and duties of library technicians. Students are introduced to library terminology and are taught skills in the use of libraries. The history of books and book publishing is discussed. The importance of professional library associations is covered. Students visit a variety of Winnipeg libraries.

B05-L002 Basic Library Procedures
Students learn basic library procedures such as simple book repair, materials processing, shelving and all aspects of circulation. Procedural variations according to the type of library are also covered.
B05-L004 AV and Office Equipment and Materials
Students learn to operate and perform basic maintenance of basic audiovisual and office equipment. Students are exposed to safety and security issues and to criteria for selection and purchase of equipment. The course also introduces students to types of major non-print format and their storage, handling, preservation, circulation and scheduling.

B05-L005 Reference 1: Ready Reference
Students are introduced to the reference process, with emphasis on sources used to answer ready reference questions. Types of sources include encyclopedias, dictionaries, directories, almanacs, periodical indexes, yearbooks and bibliographies.

B05-L006 Cataloguing 1: Intro to Descriptive Cataloguing
This course is an introduction to descriptive cataloguing of monographs using the latest edition of Anglo-American Cataloguing rules. Students learn to choose appropriate access points and preferred form of personal name, cross-references for names and name authorities. Filing according to the latest edition of ALA filing rules is also covered.

B05-L007 Acquisitions 1: Collection Development and Acquisitions
This course is an introduction to basic techniques in collection development (community analysis, needs assessment and collection development policy). Students learn selection, verification, ordering and receiving procedures for book materials and examine the organization and function of the acquisitions department. Acquisition procedures for handling gifts, exchanges and weeding are also covered.

B05-L008 Field Placement 1
Students work full-time in a library under the supervision of qualified librarians or library technicians for a two-week session. Students apply the knowledge and skills acquired in courses to practical workplace settings.

B05-L009 Cataloguing 2: Dewey Decimal and Sears Subject Head
This course is an introduction to the principles and procedures of subject cataloguing and classification using the Dewey Decimal Classification scheme and Sears subject heading (including Canadian supplement). Maintenance of subject authority files and cross references are also covered.

B05-L010 Reference 2: Theory and Effects of Automation
Students learn how to conduct a reference interview both in person and over the telephone. Basic bibliographic instruction and the creation of subject bibliographies and pathfinders are covered. Interlibrary loan procedures in both manual and automated environments are taught. CD-ROM tools are discussed within the framework of the reference setting. Specialized services in various types of libraries are also discussed.

B05-L011 Cataloguing 3: Derivative Cataloguing and MARC Coding
Students are introduced to procedures for manual and automated copy cataloguing as well as MARC coding of machine-readable bibliographic records. The use of software packages is also discussed.

B05-L012 Acquisitions 2: Special Materials and Serials Management
Students learn to create and maintain vertical files. Acquisitions of French and foreign language materials, pamphlets, government publications and audiovisual materials is also covered. Serials management and automation of the acquisitions function are included.

B05-L013 Reference 4: Social Sciences and Humanities
This course is an introduction to information sources in the social sciences and humanities with emphasis on the variety of specialized literature available. The special characteristics of information and communication in social science and humanities disciplines are also covered. The pertinent CD-ROM sources will be demonstrated and some hands-on experience is provided.
B05-L014 Field Placement 2
Students work full-time in a library under the supervision of qualified librarians or library technicians for a two-week session. Students apply the knowledge and skills acquired in courses to practical workplace settings.

B05-L015 Cataloguing 4: Library of Congress and LCSH
This course is a general introduction to all aspects of the Library of Congress classification scheme with emphasis on the most used sections of the schedule including auxiliary tables. Library of Congress subject headings and cross-references are also covered. Other specialized indexing is briefly covered. Cross-references are also covered.

B05-L016 Reference 3: On-Line Searching
This course is an introduction to on-line searching focusing on DIALOG and CAN/OLE. Search strategy, Boolean logic, choice of appropriate databases and systems and full text retrieval are covered. Special attention is given to downloading and post-search processing using WordPerfect. Current awareness services and their uses in various types of libraries are discussed. In addition, students are exposed to other on-line systems.

B05-L017 Marketing the Library and Information Services
This course introduces students to promoting library use and marketing the library through print and non-print media. Special emphasis is placed on enhancing students' skills in the use of WordPerfect as a basic desktop publishing package. Specialized marketing procedures in a variety of different libraries are emphasized.

B05-L018 Academic Course: Issues in Canadian Society
A survey of major issues that are affecting Canadians today, with special emphasis of sources of information about Canada.

B05-L019 Field Placement 3
Students work full-time in a library under the supervision of qualified librarians or library technicians for a two-week session. Students apply the knowledge and skills acquired in courses to practical workplace settings.

B05-L020 Cataloguing 5: Advanced Descriptive Cataloguing
This course provides a further look at bibliographic description concentrating on analytics, non-book materials and serials. Appropriate form of geographic names and corporate body headings is also discussed.

B05-L021 Management Skills for Library Technicians
This course is an introduction to management techniques including front-line supervision. Basic budgeting, planning, statistics and application of appropriate legislation within the library are covered. Where appropriate, the position of libraries within the overall organizational structure of their parent institution is also discussed.

B05-L022 Reference 5: Science and Technology
This course is an introduction to the specialized literature of science and technology. Emphasis is on the types of information sources which are available and the major titles in each category. Also covered are some of the special features of scientific communication and their effect on library service. The pertinent on-line databases will be demonstrated and some hands-on experience is provided.

B05-L023 Selected Library Topics
Students choose an area of library or information technology work of interest to them to study. All topics are approved by the instructor. A major paper and oral presentation on the topic are required. Special emphasis is given to unique features of services in a variety of types of libraries.
B09-A101 Dining Room Service
Students learn dining room sanitation and safety procedures, use of a POS system to post customers' orders, preparation for service and to provide food and beverage services to customers. The theory is complemented with three weeks of practical experience serving lunch in the College dining room.

B09-A102 Front Line Operations 1
Students will learn front office procedures including using room rate structures, processing and controlling reservations, guest registration and establishing guest credit. Special attention is paid to the importance of providing efficient, courteous and professional guest service. Students will use the skills in computer applications.

B09-A104 Front Office Operations 2
Students will learn the principles of guest accounting, cash control, night audit, planning and evaluation as a management function and yield management. Students will use principles in computer applications.

B09-A105 Housekeeping Operations
Students learn basic functions and operations of hotel housekeeping departments including the linen room and the basic cleaning and maintenance procedures of linens, bedding, floors, walls, and windows.

B09-A106 Inventory Management 1
Students learn purchasing functions and procedures for food and non-food and beverage items, receiving, storing and issuing procedures. The course covers calculating daily food costs, yield tests and pre-costing menus, dining room controls, and inventory of alcoholic beverages.

B09-A107 Wines, Spirits and Beers
This course covers classification of alcoholic beverages, factors in consumption, the viticulture and vinification processes and selection criteria. It examines history, classification and control of French, German, Spanish, Portuguese, other European and non-European wines and covers spirits and beers. Merchandising strategies are examined.

B09-A108 Inventory Management 2
This is a continuation of Inventory Management 1.

B09-A113 Human Resource Management
Personnel management concepts are covered including job analysis, description and specifications and employee recruitment and selection. Employee training and development, performance appraisals and factors affecting labor costs in the hospitality industry are examined.

B09-A114 Co-operative Education
This course covers hospitality industry practical job skills and analysis and evaluates personal and professional goals and development.

B09-A116 Tourism
This course examines the development and growth of tourism. Students examine the government's role in tourism, various transportation systems, accommodations and food service sectors, effect of attractions on destination choices, economic, environmental and cultural impacts of tourism and explain tourism marketing management.

B09-A118 Co-operative Education
This course covers hospitality industry practical job skills and analysis and evaluates personal and professional goals and development.
B09-F103 Food Safety
This two-hour seminar provided by the City of Winnipeg Health Department consists of a review of the relationship between microbiology and food-borne illness, safe food handling, personal hygiene habits, effective cleaning and sanitizing of equipment and utensils and measures to ensure a clean, safe food service operation. Other topics include housekeeping and general maintenance and insect and rodent control. Upon successful completion of the written examination, a nationally recognized certificate is issued.

B09-H212 Design, Layout and Maintenance
This course is designed to expose the student to various aspects of hotel, restaurant and food facility design. Emphasis will be placed on good design and how it affects satisfactory cost percentages for food, labor and other operating expenses.

B09-H404 Design Project
Develop and design a viable licensed hospitality business utilizing knowledge and experience obtained in the program with potential application, in part or in whole, in industry.

B09-H662 Bartending

B09-H666 Evening Dining Room Service
This course provides practical experience in flambé preparation, table service, presenting and serving wines, bartending and advanced food preparation. The students complete two weeks practical experience serving dinner in the College dining room.

B09-T100 Canadian Tourist Destinations
This course examines the tourist destinations of Canada including a study of the geography, history, culture, climate, recreation, shopping and special events of each region.

B09-T101 Administration and Office Procedures
This course encourages the student to use initiative and time-management principles in planning, organizing and carrying out office duties. As well, there is practice in organizing meetings, taking minutes of meetings, making travel arrangements and preparing expense reports.

B09-T102 Visitor Services
In the tourism industry, the product is service. This course will provide students with the knowledge and skills necessary to exceed the customer's expectations.

B09-T200 Tourism Perspectives
An overview of the role of tourism in the Canadian economy focusing on the industry's structure, organization and development potential.

B09-T201 Selling Tourism
This course will prepare students to sell goods and services in the tourism industry. Students will learn how to find prospects, qualify them, make a proposal based on benefits and satisfaction of customer needs and handle objections. Emphasis will be on closing the sale and follow-up to ensure customer satisfaction in order to achieve repeat business and to obtain referrals.

B09-T202 Tourism Research Techniques
Students will learn to identify sources of tourism statistics and information, interpret statistics, design and administer surveys, analyze survey results, develop a visitor profile and evaluate the effectiveness of tourism initiatives.

B09-T301 Marketing Tourism
This course will cover advertising, promotion and public relations in the tourism industry. Marketing strategy will be examined including the marketing mix and the use of various media.
B09-T302 Tourism Public Policy and Initiatives
This course will examine the role of various levels of government policies and programs as well as future plans and initiatives.

B09-T303 Tourism Industry Forum
A look at the industry from the perspective of the employer. Guest speakers from the tourism industry will be invited to discuss their organizations and their opinions and ideas about the industry in Manitoba.

B10-C109 Introduction to Advertising
This course is designed to develop a full awareness of the advertising business. Special emphasis is on the purposes and kinds of advertising, the part played by social sciences, and the organization of ad agencies and departments. Two hours per week.

B10-C110 Public Relations: Introduction
This introductory course provides the student with a basic understanding of the history of public relations as it related to the contemporary practice. The common roles, functions and activities associated with public relations as well as the dynamics of public opinion formation will be examined. Information will be presented through lectures and class discussions, with frequent representative guests from the field. Students will gain practical experience in preparing media releases, the most basic communication tool of the field. The course is designed to meet the needs of those planning further study in public relations as well as those pursuing careers in related fields.

B10-C111 Creative Writing: Fiction
This course provides instruction and practice in the application of basic elements of fiction as related to the contemporary short story. Study focuses on the writing process with numerous writing activities designed to stimulate thought and enhance existing writing abilities.

B10-C112 Journalism: Introduction
This course introduces students to journalism by examining news values and news content. Interviewing styles and techniques, as well as researching tools are taught and practiced. CP style and news writing are emphasized.

B10-C113 Composition and English Grammar
This course is designed to develop the student's ability to write effectively through an analysis of different modes and rhetorical techniques. This course includes a review of grammatical principles, especially the structure of the sentence, but emphasize the larger rhetorical variables of purpose, voice and audience.

B10-C114 Advertising: Introduction
In this introductory course the student studies the evolution of advertising and current marketing and advertising theory, emphasizing the role of advertising in modern business communications and relationships with media.

B10-C115 Literary Structures and Styles
This course introduces the student to some of the structural and stylistic choices that a successful writer makes through examination of a variety of (mostly modern) works. The student examines such aspects as genre, style and tone in both poetry and prose in order to reach an understanding not only of the what of a work of literature (its theme or content) but also of the how and why which motivated its production — the conscious and unconscious choices made by the writer. This subject provides a conceptual vocabulary for Canadian Literature B10-C325.

B10-C209 Intro to Advertising — Ad Art
Continues the general survey of advertising principles and procedures. Relationship of copy to art, with major attention given to copywriting, its functions and the various kinds.
B10-C216 Current Events
This course is designed to introduce students to a variety of significant current events both domestic and international. This course examines the deeper issues underlying major events in order to provide students with a perspective framework for understanding events in relation to the larger historical and ideological forces which are shaping our century.

B10-C217 Oral Communication
This course is designed to introduce the student to the techniques and skills of public speaking. The student learns techniques for overcoming stage fright, scripting a speech and "shaping" a delivery through voice and gesture. Extensive use is made of video playback in order to analyze and evaluate speaking styles.

B10-C218 Radio and Television 1
This course is designed to teach both radio and television skills. Firstly, it introduces the student to the medium of radio. The student becomes familiar with the organization of a radio station and learns the differences of this electronic medium in the information age. The student learns about all the opportunities involved in radio. Emphasis is placed on discovering the student's own radio potential through studio work. Secondly, this course introduces the student to the various components of television production. Emphasis is placed on the student learning through hands-on experience with portable, studio and videotape editing equipment.

B10-C220 Public Relations: Process
Term 2 of Public Relations provides the student with a comprehensive introduction to the four-step problem-solving process fundamental to the contemporary practice of public relations. Assignments are designed as practical applications of the principles to be examined in the areas of research, planning and programming, action and communications and evaluation. The emphasis in this term is on research and planning with attention to management by objectives techniques.

B10-C221 Creative Writing: Drama and Poetry
This course is designed to explore the elements of poetic language and to look at two different ways of creating a dramatic scene. The poetry section will concentrate on the tools of language used in the writing of contemporary poetry. In the drama section, scenes will be studied and students will write their own scenes.

B10-C222 Journalism: Style and Practice
Students put book learning and class lectures from the previous term to practice by covering civic politics, press conferences and writing feature profiles on prominent local personalities. Emphasize is on freelancing and selling news stories and students are given direction on selling their work.

B10-C224 Advertising: Electronic Media
This course focuses on the study of advertising planning and approaches for the creation of commercials for radio and television. Emphasis is placed on practical exercises plus extensive study of the role of electronic media theory and practice.

B10-C309 Intro to Advertising – Ad Art
Concludes the general survey of advertising principles and procedures. This term covers the relative merits of all advertising media, as well as sales promotion techniques.

B10-C319 Radio and Television 2
This course is designed to enhance the student skills learned in Radio and Television 1.
B10-C325 Canadian Literature
This course is designed to introduce the student to the works of some of the major writers in twentieth-century Canada and to the individual and cultural backgrounds which have shaped their writing. It also develops a critical awareness of the presuppositions which shape our notions of what literature is and is not and which also mandate what we regard as "Canadian" literature. The material covered helps the student to respond effectively to professional situations requiring a knowledge of Canadian literature.

B10-C330 Public Relations Management
Term 3 of Public Relations addresses the identification of an organization's internal and external publics and examines the most effective means of communicating with each. Study focuses on the managerial role of PR in such key areas as media, consumer and corporate relations. This course also addresses the emergence of issues management as a major PR function in the '80s as well as the ongoing concern for ethics in terms of standards or principles of conduct. Topics are presented in both lecture and workshop format with an emphasis on case studies.

B10-C331 Creative Writing: Style
The course examines the various writing styles in reviews, editorials, and features. Some fiction is discussed. The students write throughout the term and are expected to work in a group on a major project. The project involves a practical demonstration of student writing.

B10-C332 Journalism: Media and the Law
This course addresses intricate Canadian laws that affect the media, from defamation to contempt of court. Students cover a police press conference and attend court for news assignments. The course addresses the use of statistics by examining Canadian crime statistics. Special emphasis is on community newspapers. Students visit rural weekly papers to research the paper and write a feature story. Lectures and class discussion deal with media ethics, morals and taste.

B10-C334 Advertising: Print Media
This course is designed to encourage the student to learn the role and current status of print media advertising while creating ads for newspaper, magazine, out-of-home and other print media vehicles.

B10-C410 Business Communications
This course introduces the student to the conventions and formats of business correspondence including letters, memos and reports. A major part of the work involves preparing the student for entering the work force after graduation by assisting him/her to develop a professional resume and work portfolio.

B10-C420 Independent Professional Project 1
This course is designed to encourage students to develop a major, independent project related to their professional interests and ambitions. The type of projects offered vary from year to year depending on the participating instructors. The purpose of the course is to allow the students time not normally afforded in the classroom to develop an idea from concept to product, from the initial proposal to the finished presentation.

B10-C429 Television: Production
This course is designed to further develop the student's skills in television production. Productions involving portable and studio equipment are designed with subject majors (journalism/public relations/advertising) as the dominant factor. Special attention is given to the audio portion of video recording and lighting techniques.

B10-C430 Radio: Production
The student is introduced to a radio studio, and by example, will develop and understand basic announcing techniques. Emphasis is placed on broadcast writing skills. This course also involves a study of the CRTC and BBM, and other regulatory agencies that effect radio.
B10-C440 Public Relations: Practicum 1
Term Four focuses on the study of numerous communication tools used in the contemporary practice of public relations. The student becomes acquainted with writing and producing techniques related to the creation of such tools as brochures, AV scripts and internal newsletters through lectures, workshops and working for clients from industry. Students are also introduced to the implications of desktop publishing.

B10-C442 Journalism: Practicum 1 TV and Radio News
This course addresses broadcast writing with emphasis on meeting hourly and daily deadlines. Students attend prearranged press conferences or events in the community and are required to write radio and television stories. Instruction emphasizes the changes in writing style as students move from print to broadcast, from the written word to the use of visual in telling a story. Assignments in this journalism subject dovetail with assignments in the radio and television subjects.

B10-C444 Advertising: Practicum 1
The student focuses on advertising writing for various media with emphasis on print media and study of the advertising function. The student will write and format copy for a variety of advertising and promotions.

B10-C509 Media Buying 1
This course is designed for the student to study the advertising planning and buying processes for major media where industry guest speakers will play a key role in providing up-to-date data and information required to implement and execute the media buy.

B10-C510 Field Work 1
This course is designed to give second-year students the opportunity to gain workplace experience through a three-week media placement. Term 5 students are assigned placements in accordance with their designated major (journalism, advertising or public relations) with the instructor coordinating all placements.

B10-C512 Freelance Writing 1
Freelance Writing 1 is an introduction to the research, development, and preparation of marketable freelance material. Query letters, journalism styles, copyright and market analysis are among the topics presented. The course is of interest to students who are actively writing and concerned with selling material.

B10-C513 Cultural Arts 1
The first term of this optional course develops the students' knowledge of and capacity to respond to the visual arts. It is initially concerned with the different interpretive techniques used in responding to painting, sculpture and architecture. This course is not simply "art history", however, but an examination of the ways in which the visual arts interact with other areas of our cultural reality. The students are responsible for the exact direction of the second half of the term through the group projects they choose to work on. Issues covered typically include the concept of "taste", the nature of artistic truth, the use of cultural icons in advertising, and the distinction between the erotic and the pornographic.

B10-C514 Theatre Arts 1
This course is designed to give the students both practical and theoretical experience in theatre arts. This experience is accomplished by workshops, study of scenes, plays, field trips and presentations. The student is able to recognize the dramatic structure of a play, study a character and portray that character in a class presentation and as a group project, organize and present a scene from a designated play.
B10-C515 Advanced Desktop Publishing
To meet current needs in the industry, this course would make use of the advanced level of hardware and software approved for the program and prepare students for jobs that include layout and design requirements. This course would focus on further developing your skills on Aldus FreeHand, Aldus PageMaker and QuarkXpress. Practical assignments would be undertaken as a means of looking into designer controls of prepress concepts. The scanning of black and white and color would also be covered in this course.

B10-C520 Independent Professional Project 2
This course is designed to encourage students to develop a major, independent project related to their professional interests and ambitions. The type of projects offered vary from year to year depending on the participating instructors. The purpose of the course is to allow the students time not normally afforded in the classroom to develop an idea from concept to product, from the initial proposal to the finished presentation.

B10-C537 Television: Workshop
This course is designed to develop advanced television production skills in the areas of EFP and studio production. Additional emphasis is placed on scripting for television, on-air presentations, control room and editing techniques.

B10-C544 Radio: Fine Tuning for the Ear
This course is designed to fine-tune earlier radio basics and deals with the production of radio specials, commercial writing for the ear, documentaries, sports and news features. Microphone technique and air sound are developed.

B10-C550 Public Relations: Practicum 2
This course is designed to meet the needs of students intending to seek an entry-level position in PR and go on to build a career in the field. Terms 5 and 6 will include practical assignments involving selected clients and additional study of specialized applications of the theory addressed in previous terms. The projects to be undertaken and the areas of specialization to be further addressed are determined at the first class meeting.

B10-C552 Journalism: Practicum 2, The Newsroom
In this course the classroom becomes a newsroom, as students are assigned news stories on a daily basis and are expected to research and write the stories for the end of the class. Students are assigned news stories from the community that mainstream media would be covering and are given direction on sources and angles. Their copies are edited by guest editors from local newspapers. Students are directed on how and where to sell their work.

B10-C554 Advertising: Practicum 2
This course refines the student's advertising skills with increased emphasis on conceptualization, intermedia executions and advanced copywriting techniques. Project activities are designed to enhance the student's planning and organizational abilities.

B10-C609 Independent Professional Project 3
This course is designed to encourage students to develop a major, independent project related to their professional interests and ambitions. The type of projects offered vary from year to year depending on the participating instructors. The purpose of the course is to allow the students time not normally afforded in the classroom to develop an idea from concept to product, from the initial proposal to the finished presentation.
B10-C610 Field Work 2
This course is designed to give second-year students the opportunity to gain workplace experience through a three-week media placement. The instructor coordinates all placements.

B10-C614 Theatre Arts 2
This course is designed to build upon the practical experience the student was exposed to in Theatre Arts 1 B10-C514. Emphasis is placed on the further development of acting skills as well as the expansion of the student's knowledge on how to put a show together.

B10-C615 Promotion Management
This course is designed to give second-year students practical information and projects in the execution of promotional programs including coordination of promotional elements, setting objectives, establishing budgets, designing programs and planning for evaluation. Commercial and non-commercial situations are to be explored as appropriate to the student's field of major study.

B10-C616 Freelance Business Management
Large companies are not necessarily creating all the new jobs. Many Creative Communication students will find themselves marketing their services from a boutique-style business. This course introduces students to critical systems and procedures needed to successfully manage a home-based freelance business.

B10-C623 Cultural Arts 2
The second term of this option focuses on the performing arts: film, theatre, opera, music and dance. This course assumes little prior knowledge on the part of the student and attempts to develop a working vocabulary of those arts which tell stories and develop themes through non-literary means. The student is expected to attend whatever artistic performances are available at the time and the class draws on the pool of talented local professionals for guest lectures and advice. Not all of the performing arts are necessarily covered in the term; the exact choice of subjects depends on the wishes of the instructor and students. This term's work is especially valuable to students interested in reviewing and freelancing in arts-related areas.

B10-C635 Manitoba Literature
This optional course introduces the student to a sampling of works by Manitoba authors and develops skills in researching and writing about these authors. The course is concerned both with the authors' individual techniques and styles and also with their generic responses (comic, satiric, tragic) to the experience of living on the prairies. A natural outcome of this process is trying to discover how far the concept of an autonomous Manitoba literature is justified. Through assignments such as interviews, the student is encouraged to develop a personal appreciation of local writers and of the pressures they face.

B10-C644 Radio: You're On the Air
This course is designed to fine-tune all aspects of radio production. The student learns how to handle portable tape equipment, edit electronically, feed audio by phone, cart audio and develop added skills on a production/broadcast board. Students are given the opportunity to be "ON AIR."

B10-C649 Television: Broadcasting
This course emphasizes major production work for a client-based assignment. Students will incorporate electronic field production and studio production skills to accomplish the productions. Journalism and public relations majors will produce documentaries, while advertising majors will produce commercials for client campaigns.
B10-C659  Public Relations Practicum 3
This course is designed to meet the needs of students intending to seek an entry-level position in PR and go on to build a career in the field. Terms 5 and 6 include practical assignments involving selected clients and additional study of specialized applications of the theory addressed in previous terms. The projects to be undertaken and the areas of specialization to be further addressed are determined at the first class meeting.

B10-C663  Journalism: Practicum 3, Developing Print
This course allows students to apply all their previous experience to a documentary. Students work in teams to produce a package of stories around a theme. The stories are edited and then laid out on a desktop publishing system.

B10-C664  Advertising: Practicum 3
In this course the student works for an assigned actual local client. Creative Communications students are teamed with students from Advertising Art to develop the complete ad campaign. In a competition judged by local advertising professionals, the student teams will make a formal presentation of the campaign for adjudication and evaluation.

B11-A002  Accounting Systems 1
This course covers business transactions, basic accounting entries, the accounting cycle, ledgers, accounts and journals, internal controls, petty cashier duties, bank reconciliation, bad debts and credit card charges, inventory systems, plant and equipment, employee payroll, partnerships and corporate structures.

B11-A004  Accounting Systems 2
This is a continuation of Accounting Systems 1 B11-A002.

B11-A005  Accounting Systems 3
This is a continuation of Accounting Systems 2 B11-A004.

B11-A006  Hospitality Management Accounting 1
This accounting course is specific to the hospitality industry and covers financial statements, ratios, internal controls, "bottom-up" approach to pricing and cost controls.

B11-A007  Hospitality Management Accounting 2
This course covers cost, volume, profit, decision making, budgeting, working capital, capital assets, feasibility studies, and financial goals specific to the hospitality industry.

B11-A009  Accounting
Students will learn about all the elements in the accounting cycle, double entry bookkeeping principles and financial statement formulation. A practice set of books will be completed. Pro forma financial statements will be developed for individual business plans based on student marketing research. A statement of capital costs and a statement of changes in financial position will also be developed by each student for their own business.

B11-A010  Finance
Students will learn about the role of the financial manager, internal and external sources of funds for a business, need for funds, evaluation of debt versus equity funding, risk management and financial statement analysis. Students will develop financial plans and cash flow statements for their businesses.

B11-A103  Business Mathematics B U A C
Review of basic fundamentals, application of percentage, profit and loss, trade discounts, retail selling, mark up, simple interest, discounting notes, compound interest applied to present and future valuing of single amounts, to annuities and complex annuities.
B11-A105 Business Mathematics – Term 1
This course begins with a review of basic calculations with business applications such as averages, inventory valuation and depreciation. Other topics include algebra, ratio and proportion.

B11-A106 Business Mathematics – Term 2
This course looks at commercial discount, markup and markdown, simple interest, compound interest applied to present and future valuing of single amounts, to annuities and complex annuities.

B11-A161 Financial Accounting A
A thorough working knowledge of double entry bookkeeping, adjustments and work sheets for preparation of financial statements pertaining to sole proprietorships and partnerships, special journals, subsidiary ledgers and controlling accounts.

B11-A162 Introductory Accounting – Term 1, Integrated
The work of an accountant, accounting principles and concepts, balance sheet equation, effects of transactions on the accounting equation, accounting statements (Income Statement and Balance Sheet), the effect of revenue and expenses, Asset, Liability and Owner's Equity accounts, revenue and expense accounts, recording transactions in the general journal, posting to the ledger, debit and credit, mechanics of double entry accounting, the trial balance, adjusting the accounts, adjusted trial balance, preparing statements and classified balance sheet, preparing a work sheet and its use thereof, closing entries, the post-closing trial balance, the accounting cycle.

B11-A163 Introductory Accounting – Term 2, Integrated
Sales, purchases, cost of goods sold, gross profit, worksheet for a merchandising concern, closing entries for a merchandising concern, debit and credit memos, sales journal, cash receipts and cash disbursements journals, purchases journal, control accounts, subsidiary ledgers, sales and purchase returns, internal control principles and procedures, controlling purchases, voucher system and control, voucher register, petty cash fund, control over cash, bank reconciliation, accounting for notes receivable and accounts receivable – discounting notes receivable, dishonored notes receivable, bad debts and allowance for doubtful accounts.

B11-A191 Introductory Accounting A
Double entry bookkeeping routine, adjustments, and work sheet for preparation of financial statements, financial statements pertaining to sole proprietorship, special journals, subsidiary ledgers and controlling accounts.

B11-A193 Introductory Accounting A BAI
Double entry bookkeeping routine, adjustments and work sheet for preparation of financial statements, financial statements pertaining to sole proprietorship, special journals, subsidiary ledgers and controlling accounts, control procedures for cash and receivables payroll.

B11-A204 Cost Accounting A
An introduction to the procedures and techniques utilized in accounting for a manufacturing concern, preparation of a cost of goods manufactured and sold statement, work flow and cost flow through a job order cost system, preparing and following the paper work for the recording and controlling of new materials, direct labor, manufacturing overhead, department overhead cost and setting overhead rates.

B11-A205 Cost Accounting Principles and Applications – Term 2
This is a compulsory course taught in Term 2 of Business Accountancy Integrated program. The course material is the job order method of cost accounting.

B11-A206 Cost Accounting Principles and Applications – Term 3
A continuation of the job order cost system. Students prepare and follow the paper work for the recording and controlling of new materials, direct labor, manufacturing overhead, department overhead cost and setting overhead rates.
B11-A218 Accounting Chef
This course is designed for the student to get a broad understanding of the accumulation and use of accounting data. It covers a wide range of topics including the basic accounting equation, balance sheet, income statement, debits and credits, recording of transactions, adjusting transactions and the worksheet.

B11-A261 Financial Accounting B
Application of accounting principles, procedures and techniques as they apply to cash and accounts receivable, inventories, plant and equipment, intangible assets, amortization of assets, payroll accounting, accounting principles and concepts.

B11-A262 Introductory Accounting – Term 3, Integrated

B11-A291 Introductory Accounting B
Accounting for inventories and their valuation, procedures and techniques in the treatment of plant and equipment transactions and control procedures for cash and receivables payrolls.

B11-A293 Introductory Accounting B BAI
Accounting for inventories, plant and equipment, basic accounting principles and departmental control.

B11-A304 Cost Accounting B
Accounting for the recovery and sale of high and low value scrap, recording the cost flow through accounts in a process cost system, preparation of a complete cost of production report, costing for by-products and joint products, preparation of financial budgets and standard costing for materials and labor.

B11-A361 Financial Accounting C
Accounting for partnerships, formation of corporations, corporation share capital and retained earnings, long-term liabilities and investments. Preparation of personal income tax returns.

B11-A391 Introductory Accounting C
Accounting procedures, methods and techniques as they apply to limited companies, share capital, retained earnings, consolidations, long-term liabilities and investments.

B11-A392 Introductory Accounting C CAP
Accounting procedures, methods, accounting for partnerships and techniques as they apply to limited companies, share capital, retained earnings and long-term liabilities.

B11-A393 Introductory Accounting C BAI
Accounting procedures, methods and techniques as they apply to partnerships, formation of limited companies, share capital and retained earnings, long-term liabilities and investments.

B11-A491 Intermediate Accounting A
Involved accounting information that is useful to management in the decision-making process. It begins with a complete review of accounting information processing cycles, the reporting process and financial statements. The course continues with an in-depth study of principles and techniques as applied to cash, temporary investments, receivables and inventories.
B11-A495 Microcomputer Accounting GL
This course will focus on hands-on learning of ACCPAC accounting system, the most popular general accounting program for microcomputers. Through the use of comprehensive practice sets, students will learn how to set up and operate the General Ledger and Financial Reporter module of ACCPAC.

B11-A507 Cost and Management Accounting A
This course is an introduction to the problems involved in accounting for a manufacturing concern. Topics covered are financial statements, the manufacturing accounting cycle, job order cost system, budgeting, direct costing and departmentalization.

B11-A591 Intermediate Accounting B
This course involves an in-depth study of tangible fixed assets acquisition, retirement, depreciation, intangible fixed assets, corporations contributed capital, retained earnings, quasi-reorganizations, long-term investments and long-term liabilities.

B11-A595 Microcomputer Accounting AR and AP
This course will focus on hands-on learning of the ACCPAC accounting system. Through the use of comprehensive practice sets, students will learn how to set up and enter different transaction batches to produce reports for Accounts Receivable and Accounts Payable.

B11-A607 Cost and Management Accounting B
This is a continuation of Cost and Management Accounting A B11-A507 beginning with more advanced applications of process costing, standard costing procedures, joint product costing and by products.

B11-A681 Managerial Accounting CAP
This course is an introduction to management uses of the end product of accounting analysis for effective management decision making. The course stresses acquisition of a broad knowledge pertaining to management functions of planning and control and increasing the students' intellectual skill in problem-solving by means of cost information.

B11-A691 Intermediate Accounting C
This involves changes in accounting methods, estimating errors, incomplete records, statements of change in financial position, comparative statements and ratio analysis.

B11-T010 Accounting Procedures 1
Students will learn basic bookkeeping and accounting skills using a manual system, including rules of debit and credit and the accounting cycle.

B11-T020 Accounting Procedures 2
Students will build skills learned in Accounting 1 B11-T010, adding procedures for banking, payroll and merchandise inventory.

B11-T030 Tourism Management Accounting
Students will use a case study approach to develop an accounting system and control procedures for several small simulated tourism-related ventures.

B12-B111 Economics 1 BAI
This course is designed to introduce the student to the principles of microeconomics. The topics covered are fundamental to any basic course of this type. Some of the topics discussed include production possibilities, supply and demand, elasticity, time horizons, costs, the theory of the firm and profit maximization in a competitive market structure.
B12-E171 Economic Principles BA 1
An introduction to the central economic problems facing all societies, followed by a brief study of modern political economic systems designed to provide solutions to the economic problems. The workings of the mixed, free enterprise economy will be studied in depth, with particular emphasis on the role of the price system and its misfunctions under less than perfect competition.

B12-E212 Economics 2 BAI
A study of macroeconomic principles, beginning with a survey of national economic goals, followed by a study of the determinants of national income, business cycles, creation of our money supply, and monetary stabilization policies.

B12-E272 Economic Principles BA2
A study of macroeconomic principles, beginning with a survey of national economic goals, followed by a study of the determinants of national income, business cycles, creation of our money supply, and monetary stabilization policies.

B12-E276 Economic Principles 1
This course is an introduction to the principles of microeconomics including production possibility analysis, theory of the market and price determination, supply and demand analysis and theory of the firm.

B12-E292 Economics
This introductory course examines micro and macro economic issues as they influence the sales industry. Emphasis is placed on the role of the price system in allocating resources, with comparisons drawn between our system and alternate systems, the roles of consumers and producers, factors affecting economic investment in the economy, the use and purpose of money, the role of government through expenditures and taxation, the operation of the banking system and international trade.

B12-E313 Economics 3 BAI
This course is a continuation of macroeconomics. The initial topics deal with fiscal policy matters such as the budget balance, built-in stabilizers, the national debt, the nature and importance of money, the quantity theory, the banking system and the supply of money. The latter part of the course deals with the macroeconomics role of money and the theory of monetary policy and the nature of unemployment and inflation.

B12-E373 Economic Principles BA3
A continuation of the study of macroeconomics with further emphasis on stabilization policies. The role of government fiscal policy will be examined, followed by a study of the problems and dilemmas of simultaneous inflation and unemployment, economic growth and current issues.

B12-E377 Economic Principles 2
This is a course in macroeconomic principles. Studies will include national income and its determination, the monetary system, inflation and unemployment, with special emphasis on monetary and fiscal policy.

B12-E415 Applied Economics
This course guides students in using economic concepts and reasoning in every day decision making, in reading and listening to accounts of economic issues in the communications media and in recognizing the economic components of the nation. Emphasis is placed on the role of the price system in allocating resources, factors affecting economic investment in the economy, use and purpose of money, role of government through expenditures and taxation and the operations of the banking system.
B12-E471 Economic Issues in Canada
This course allows the student to use acquired economic tools to study and analyze important current events with economic and political implications such as: the urban crisis, inflation and unemployment, income distribution, the energy crisis and pollution and others.

B12-E472 International Economics and Business
Canada's exports equal about 25 percent of its total production of goods and services; the study of international trade and business is therefore important and essential for the student of business. The subject matter includes exports and imports, foreign exchange, international monetary arrangements, the business of multinational corporations and Canada's relation to economic trading blocks with special influence in the European Economic Community.

B12-E580 Industrial Relations
A study of the Canadian labor market which examines composition of the labor force, unemployment, changing demand for labor, immigration and emigration, cyclical unemployment and the relationships of wages, prices and unemployment. The course examines the history and development of Canadian unions with particular emphasis on current problems in industrial relations. Important issues are augmented by the case method.

B12-E670 Public Finance
A study of governmental activities: the theory and structure of taxation, taxes on income, goods sold, property and their economic consequences, government borrowing and fiscal policy. The expenditure of Canadian governments. Canadian public finance and the Carter Report. Particular emphasis is placed on local (i.e., Manitoba) taxation changes and problems.

B12-E675 Manitoba Economic Perspectives
This course is a must for business people living in Manitoba. It offers an economic treatment of major issues in this province. While the course examines general concerns in the areas of labor, business and government, students will have the opportunity to apply economic principles to these areas, with respect to Manitoba. For example, students will learn how to conduct a labor balance study using specific data on the labor force in this province. Students will also be involved in preparing benefit-cost analyses, again with reference to specific issues in Manitoba. The resource base of Manitoba will be examined and its potential for growth explored. Present employment opportunities and assistance to Manitoba businesses will be discussed.

B12-E676 Manitoba Economic Perspectives
This course is designed to have students examine and analyze important economic issues and perspectives of the economy of Manitoba.

B12-H110 Economics
Students learn concepts of economic principles resulting in profit maximization including absolute scarcity, market pricing in a mixed economy and the three basic forms of business organizations. The course also covers demand elasticity and gross revenue flow, how to prepare cost structures, rate schedules and pricing policies for hotel operations under competitive and non-competitive conditions.

B12-H111 Hospitality Law
Hospitality law covers the innkeeper's responsibilities and rights of compensations and lien, contracts, guest safety, guest property and guest misconduct, food services regulations and liquor sales particular to the hotel industry.
B12-L491 Risk and Insurance
The course provides an introduction to and an analysis of the concept of risk (the chance of losses) and its effects both on the business and personal levels. Risk management alternatives are dealt with next, insurance being but one of several valid methods of handling risk. Finally, the various types of insurance are discussed: property (fire), consequential losses, theft, bonds, casualty or liability coverages, automobile (both private and public), aviation and the various types, functions and uses of life insurance.

B12-L001 Academic Course: Introduction to Economics
This introductory course examines micro and macro economic issues, involving an investigation of our market structures, how prices are determined under varying conditions in the market, the pervasiveness of supply and demand, personal and business finance, money and credit, economic growth and prosperity, the interpretation of economic statistics and projections and international effects from trade with other nations.

B12-L002 Academic Course: Levels of Canadian Government
This course is a selective study of Canadian politics with emphasis on multiple viewpoints pertaining to federal as well as provincial and municipal politics. The implications on policy formation and political behavior of such factors as culture, regional diversity, the economy, labor, business and Canada's close ties with the USA are examined.

B12-L199 Business Law 1 BAI
The course is 11 weeks in duration and consists of five 50-minute periods per week involving lecture, problem solving and discussion. It is meant to be an introduction to the laws of business.

B12-L360 Business Law
This course provides an introduction to our legal system and the administration of justice, to the law of tort, to the laws of contract and sale of goods.

B12-L367 Legal Aspects of Health Records
The objective of this course is to develop an understanding and appreciation of the rights and responsibilities attached to the various positions of an employee in the medical and health care environment and to familiarize students with the legal aspects of these fields of endeavor. The course is seven weeks and consists of four one-hour periods/week. It provides an introduction to the Canadian legal system and the administration of justice, to the law of torts, general contracts and the confidential relationship existing between and among professional practitioners, patients and employees. A study also is made of private and public health insurance programs and of legislation particularly applicable to health records.

B12-L466 Business Law 2
This course will constitute a study and application of business law in the areas of insurance, guarantee, bailments, principal and agent, contract of employment, negotiable instruments and the enforcement of rights thereunder, partnerships, management and operation of corporations and credit transactions and creditor's rights.

B12-O333 Principles of Organization and Management
Functions of the Canadian economy, forms of Canadian business organization, the role of government in Canadian business, the finance activity, labor relations, production cycle, purchasing, inventory control, marketing, administrative organization.

B12-P555 Entrepreneurship
This course is intended to aid students interested in starting and/or managing a small business; to inform those students planning to pursue careers dealing with small business. During the term, students in small groups will begin researching ideas for a profit-seeking enterprise to be completed in Term 6.
B12-P666  Entrepreneurship Practicum
Completion of project begun in B12-P555. Students, in groups, are required to complete a comprehensive business plan for a profit-seeking company. Both the written and the oral presentation of the business plan are evaluated by a panel of judges from the business community, plus one instructor. Students should be aware that this course requires the integration of all material learned in the BA program and should be viewed as a comprehensive "final examination" in Business Administration.

B13-C100  Co-op Work Placement
B13-C200  Co-op Work Placement
B13-I800  Business Mathematics BAI
The general objective of the course is to ensure that students develop the mathematical skills necessary to handle basic quantitative material in financial mathematics, statistics, economics, accounting, real estate and finance courses.

B13-I801  Introduction to Business BAI
Students examine business careers, make tentative occupational choices and survey the following topics: the economic system, the business firm, forms of ownership, franchising and small business, labor-management relations, marketing, production, computers, accounting and finance.

B13-I804  Human Behavior in Organizations BAI
This course is concerned with the study of individual and group behavior in organized or purposeful group settings.

B13-I805  Statistics 1 BAI
This course covers the "descriptive" portion of statistics. Topics include: charts and graphs, frequency distributions, mean, median, mode, range, interquartile range, standard deviation, index numbers, probability theory, conditional profit, loss and expected values, payoff tables and normal approximation to the binomial.

B13-L001  Academic Course: Human Behavior in Organizations
This course is concerned with the study of individual and group behavior in organized and purposeful group settings. The focus of the course will be to develop an understanding of the needs and behavior of people in groups and to develop skills in dealing with people in these group settings. Understanding our own behavior and the behavior of others will lead to better choices of behavior in our own lives.

B13-L002  Academic Course: Multiculturalism in Canada
The student examines the evolving realities of race and ethnic relations in Canada from a multicultural perspective. The course explains the sociological concept of culture and identifies significant aspects of culture, such as language, values and norms, socialization, institutions and cultural diffusion. The course presents a demographic profile of Canadian society, a description of ethnicity and ethnic identity in Canadian society, a celebration of diversity, an examination of the policy of multiculturalism at the federal, provincial and municipal levels of government, a look at the mosaic versus the melting pot approaches to managing linguistic diversity and an analysis of mass media and minorities.

B13-M602  Management
The objective of this course is to give the student practice in integrating and applying the knowledge gained in previous courses towards the recognition and solution of business problems. The medium used is major case studies both written and discussed in class. The theory sections deal with the role of the manager in strategy, tactics and decision making. The case studies used assume a previous knowledge of financial statement analysis, break-even analysis and report writing, as well as some statistics and management applications of computer systems.
B13-M608 Introduction to Business CAP
A broad analysis of business concepts, functional internal characteristics of business and the interrelationships between business, government and the consumer. The course content includes trends affecting Canadian business, world economic systems, economic issues affecting Canadian business, forms of business ownership, entrepreneurship, small business management and leadership, motivating employees, employee management issues, ethics-based management, total quality management, automation technology and public fears.

B13-M610 Organization and Management
The objective of this course is to familiarize the student with the basic concepts of management and their interrelationships with specific reference to the health care field. This course is geared specifically to the Health Record Technician program but draws heavily on management practices in business, government and non-profit organizations and covers the subjects of planning, organizing, staffing, actuating, controlling and labor relations.

B13-M612 Introduction to Business BA
See B13-M611.

B13-M613 Human Resource Management
The objective of the course is to give the student exposure to current management practices in the human resource field. Topics covered include recruitment, selection, orientation and training, compensation and human resource planning, as well as legal aspects of human resources.

B13-M614 Canadian Real Estate
This course explores all aspects of real estate as an investment with particular emphasis on Manitoba. As well as private home purchasing, interest is focused on commercial properties and land speculation. This course integrates the students' knowledge gained in law, economics, business finance and accounting.

B13-M618 Credit Management
A course designed to familiarize the student with credit authorization and collections. Credit management will be analyzed in terms of profitability, efficiency, effectiveness and operations. Credit relationships between retailer and consumer, bank and consumer and company will be studied.

B13-M623 Co-operative Enterprise
This course makes students appreciate the co-op sector of the economy in Manitoba and Western Canada. It helps students understand the problems and principles that are unique to the management of co-ops and credit unions. Research will be done on the potential for new co-operative development based on the unmet needs in a given neighborhood or community.

B13-M624 Politics and Government in Canada
An introduction to politics, including an analysis of the four core areas of political systems: creation of a common identity, power, legitimacy and production and distribution of goods and services. Using this as a framework of reference, the course then covers the major political systems and ideologies. To provide an understanding of how it works, Canadian politics is analyzed from a historical and a current perspective, involving structures, processes and personalities.

B13-M625 Politics and Government in Canada
A comprehensive study of Canadian federal politics which goes beyond the mere description of governmental institutions and processes. The approach is a practical one, where emphasis is placed on understanding the implications of such factors as culture, political behavior and public policy. Consideration is made of the fact that the environment is shared with business and labor. Also, provincial and municipal governments are looked into, as well as the international scene.
B13-R701 Production Management and Quality Control
This course shows how the quality objective is applied to production of goods and services. It embraces W. Edward Deming as a guru and shows how the Japanese successfully adopted his philosophy. Topics include work study, quality control, critical path analysis and equipment analysis.

B13-R703 Financial Mathematics
The application of mathematics to practical business problems dealing with compound interest, installment payments, annuities, sinking funds, present values, evaluation of bonds.

B13-R704 Statistics for Health Record Technicians
This course is offered in Term 3 and includes basic regression and correlation, interpreting inpatient statistical reports and hands-on use of statistical software on microcomputers.

B13-R705 Quantitative Methods
This course builds on statistics and provides an in-depth examination of various statistical tools of management decision making. Topics include: decision making under uncertainty, linear programming, transportation method and sales forecasting. This course will be of particular interest and use to those who intend to pursue a professional accounting designation.

B13-R706 Statistics 1
This course is an introduction to economic and business statistics. Topics include: charts and graphs, frequency distributions, measures of central tendency, measures of dispersion, index numbers and probability theory.

B13-R707 Statistics 2
This course continues the study of statistics into the "inference" area. Topics include: probability distributions, the normal curve, estimation hypothesis testing, quality control, statistical simulation and least squares analysis.

B13-R708 Business Finance
A course to develop skill in planning and controlling the investment in each of the asset accounts and the methods of financing the firm. Particular emphasis will be placed on the analysis and interpretation of financial data.

B13-R709 Securities Investment
The objective of this course is to introduce the student to the various types of securities available for investment. Special emphasis is placed on evaluation of securities as investment alternatives.

B13-R713 Business Mathematics
This course begins with a review of basic arithmetic and algebraic operations. This is followed by a study of the application of ratio, proportion and percent to business problems, including trade and cash discounts, commissions and fees, taxes, markups and income statement analysis. Finally, the student is introduced to financial mathematics topics: simple interest and discount, bank discount, equivalent payment and negotiable instruments.

B13-R714 Statistics 2
This course continues the study of statistics into the "inference" area. Topics include: probability of distributions, the normal curve, estimation hypothesis testing, quality control, statistical simulation and least squares analysis.

B13-R715 Financial Mathematics
The application of mathematics to practical business problems dealing with compound interest, installment payments, annuities, sinking funds, present values and evaluation of bonds.

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B13-S106 Interpersonal Relations
This course focuses upon human behavior in general and upon human behavior as experienced in the helping professions in particular. Emphasis is placed upon individual personal growth and self-knowledge and upon behavior of the individual in groups. Methods of learning include lectures, discussions, planned experiences and role-playing, with the major focus on experiential learning. The student is expected to take a major responsibility for his or her own learning, with the instructor acting as a facilitator.

B13-S201 Introduction to Sociology DNUR
This course is concerned with the presentation of an historical, theoretical and cross-cultural perspective of society in a time of rapid social change. Special emphasis is placed upon the study of the Canadian scene, whenever possible. The student is encouraged to maintain this emphasis in the assigned term paper or project.

B13-S302 Social and Health Problems DNUR
This course is designed to broaden the student’s knowledge and awareness of current trends and problems in society. Emphasis is placed upon social and health problems in Canada and the world, and upon current events and trends which are not labeled as problems, but which have some significance for society.

B13-S501 Psychology
This is an introductory course designed to give the student an overview of the major topics and concepts in the field of psychology. It examines the approaches to gathering and evaluating evidence about the causes and correlates of behavior and also the means by which psychological knowledge is (or can be) applied to facilitate human growth and development.

B13-S504 Psychology
This course focuses on the major theories of human personal growth, adjustment and creativity. Emphasis is placed on the growth psychology approach to personality and on the understanding of some of the motivational factors affecting one’s own and others’ behavior. The course is designed to be of practical value to students in their social as well as their working lives.

B13-S508 Human Behavior for Salespeople
An introductory psychology course intended to provide students with a basis for understanding human behavior.

B13-S509 Psychology of Selling C and I
This course is designed to provide students with knowledge about the factors that influence buyer behavior. Included among the psychological factors to be discussed are buyers’ motives, perceptions, learning, attitudes, beliefs and personalities. In addition to providing basic knowledge, this course will aid students in developing skills essential to sales success such as establishing positive buyer perceptions, active listening, needs analysis and persuasive communication.

B13-S513 Human Behavior in Organizations BA/SS/BUS. ED.
This course is concerned with the study of individual and group behavior in organized or purposeful group settings. Its major goals are: to communicate some knowledge of general psychological principles and to develop skill in applying that knowledge to social and organizational situations.

B13-S514 Human Behavior in Organizations HRA
This course is concerned with the study of individual and group behavior in organized or purposeful group settings. Its major goals are to communicate some knowledge of general psychological principles and to develop skills in applying that knowledge to social and organization situations.
B13-S515 Contemporary Social Issues in Canada
A course designated to broaden the student's awareness and knowledge of current trends and problems in today's society. Emphasis is placed upon social problems in Canada and the world and upon current events and trends which are not labeled as problems but which have some significance for society.

B13-S527 Psychology
This course is a study of major personality theorists with the focus on the value and usefulness of each theory in explaining human nature and behavior. As many as possible of the following are considered: Freud, Jung, Adler, Horney, Erikson, Reich, Perls, William James, Skinner, Rodgers, and Maslow.

B13-S543 Human Behavior in Organizations
Whatever your position within the organization and society in general, human relationships play a significant role. This course is concerned with the study of human relationships in organized and purposeful settings. Its major goals are to increase the understanding of principles, to demonstrate the application of principles to concrete situations and to provide a means of developing skills for use in group situations; skills of observing, skills of self-insight, skills of understanding the behaviors and motives of others and skills of arranging resources to accomplish a task and meet the needs of the group and individual.

B13-S544 Sociology
This is an introduction to the perspective of sociology and how it helps us to understand our social existence. It calls attention to the continuous interplay between the individuals and the social context in which they live out their lives. It also looks at the interrelationship between society's various institutions. Emphasis is placed on the presentation of an historical, theoretical and cross-cultural perspective of Canadian society in a time of rapid change.

B13-S617 Sociology
A basic knowledge of society and how it is organized is essential for an understanding of sociology. Our behavior is learned and society is the basic teacher. The course is conducted on a lecture/discussion format and the student's participation is actively encouraged.

B14-A002 Marketing
The student will learn about marketing research, consumer behavior, retailing and market strategy planning. Case studies will be used to apply concepts and provide experience in analyzing and solving marketing problems. A market plan, environmental and industry analysis and a sales forecast will be developed during this segment of the course.

B14-A201 Marketing 1
Marketing strategy, opportunities and research are examined in the hospitality industry by analyzing target markets, product, place, promotion and price strategies.

B14-A202 Marketing 2
This is a continuation of Marketing 1 B14-A201.

B14-A501 Advertising
A practical course in advertising with emphasis on advertising in Canada. Advertising is viewed as an important part of the total marketing mix of a company or other institution. The role of advertising in society is reviewed. A study is made of creative strategy and execution as well as media strategy and execution. In addition the various elements of print and broadcast advertising are analyzed as are the functions of the advertising agency.
B14-C114 Basic Marketing
A study of industrial and consumer marketing with emphasis on marketing institutions and principles. The vital role of marketing in society is presented from the perspective of the modern marketing concept. The student develops and learns to apply an understanding of marketing strategy involving selection of target markets and development of marketing mixes.

B14-C401 Consumer Behavior
This course provides an introduction to the complexity of human behavior, particularly as it applies to buying behavior on the part of final consumer. Material for the course is drawn from the social sciences: sociology, psychology, social psychology and economics. This insight provided leads to a better understanding of consumer behavior in the market place.

B14-D300 Marketing Decision Simulation
Marketing Decision Simulation provides students with an opportunity to apply their learned marketing skills in a dynamic and competitive simulated marketing situation. As a company marketing executive in a simulated business environment, students work in teams making marketing decisions. Evaluation is based on both financial performance and team assignments.

B14-I117 Introduction to Business
A practical course which provides an overview of the world of business and its role in the free enterprise system. The course provides the basis for specialization in specific areas of business which other subjects are concerned with. Part one deals with business and its environment, part two deals with establishing a business, the legal and financial aspects, part three deals with operating a business, part four deals with managing a business, part five deals with opportunities in business.

B14-L314 Canadian Business Law
This course is designed to provide an appropriate foundation in business law specific to the needs of students involved in Commerce and Industry Sales and Marketing. The major portion of the course will be allocated to the formation and factors affecting contractual relationships. The introductory portion of Business Law deals with the origin, sources of law and the court system, followed by a section on tort law.

B14-M101 Basic Marketing 1
A study of industrial and consumer marketing with emphasis on marketing institutions and principles. The vital role of marketing in society is presented form the perspective of the modern marketing concept. The student develops and learns to apply an understanding of marketing strategy involving selection of target markets and development of marketing mixes.

B14-M111 Marketing 1 BAI
An introduction to the marketing concept and the role of marketing in society. The student will know the basic problems and practice in marketing management and understand the marketing manager's job relative to the firm and the macromarketing system. The student will recognize the importance of the consumer and the necessity of marshaling the firm's efforts to serve the consumer.

B14-M122 Marketing 2 BAI
An introduction to the concepts of marketing segmentation and forecasting market potential. The student will understand the need for proper product planning and development of channel systems. Included are the concepts of retailing, wholesaling and physical distribution.

B14-M161 Business and Financial Mathematics
This course reviews basic arithmetic and algebraic operations. This is followed by a study of the application of ratio, proportion and percent to business problems, including trade and cash discounts, mark up, mark on and mark down. The student is then introduced to financial mathematic topics such as simple interest and discount, negotiable instruments, compound interest, annuities, bonds, depreciation, credit collection and financial statements.
B14-M202 Basic Marketing 2
Basic Marketing builds on the principles developed in Term 1. This course provides a more in-depth analysis of the four elements in the marketing mix: product, place, promotion and price. In addition the student examines in more detail the various marketing institutions, is introduced to marketing research and finally learns to develop integrated marketing strategy.

B14-M213 Advanced Marketing
An introductory course which covers the broad field of marketing in a Canadian context. The study includes industrial and consumer marketing and emphasizes basic principles are they apply in the various marketing institutions. The student is introduced to marketing strategy and the uncontrollable factors considered in developing the marketing mix. The course ties in closely with the simulation exercise in Advanced “In Business” Training B14-T218 where the business game focuses on marketing strategies in a competitive environment.

B14-M601 Merchandising
A study of merchandising methods and retail organization, retailing today, management of retailing, the retail store, the retail organization, merchandise management as it pertains to buying, handling, controlling and pricing, sales promotion and customer services, merchandising, accounting controls, coordination and retailing management.

B14-M603 International Marketing
A course designed to survey global marketing in all its facets starting with an examination of its economic base and going on to examine its practices and problems. The course will deal with the planning and development of products and services for international markets as well as their pricing, packaging, promotion and distribution. Specifically, among other topics the course will deal with multinationals, joint ventures, franchises, cultural differences, political climates, legal and economic systems, etc., as they pertain to international marketing.

B14-P319 Advertising and Promotion
The objective is to learn the fundamentals of advertising and promotion within the full marketing arena and to appreciate the skills required in planning and executing advertising and promotion programs. To implement the uses and applications of advertising as a marketing tool and as a means of communication within the marketplace. The course uses films, videos, workshops and lectures and requires the student to consistently demonstrate skills and knowledge acquired throughout the course which takes a strong marketing-management approach to advertising.

B14-R312 Merchandising
This course provides the student with a managerial, practical introduction to retailing (all activities involved in the sales of goods and services to the ultimate consumer), focusing directly on the issues faced by the owner, the manager or the employee of a retail institution. While department and chain stores receive considerable attention, this course presents a broad view of retail strategies including the opportunities of self-employment.

B14-R602 Marketing Research
This course focuses on the use of information in the planning of marketing strategies and the execution and control of marketing functions. Particular attention is given to the identification and solution of marketing problems through the systematic collection, analysis and interpretation of data. The course consists of two parts: a) deals with theory through the lecture and case study method and b) an actual research project is undertaken by students working in groups.
B14-S211 Basic Sales
The purpose of this course is to prepare the student for the field of selling at a basic level, such as order taking or support sales work. The course presents a broad picture of the field of selling. Basic skills are studied and discussed and role-play situations are developed for skill practice. The theory involved includes review of a variety of elements that are important to selling, prospecting, sales planning, sales interviews and post-purchase follow-up. The emphasis is on sales planning and the interview process.

B14-S311 Advanced Sales
This course builds on the foundation of Basic Sales B14-S211. It represents a thorough review of the sales process, all the way from the planning stage to closing the sale and follow-up. The study and practice of skills includes: features, advantages, benefits analysis, prospecting, opening the sale, presentation and demonstration, handling objections, proofs and supporting statements, probing, recognizing customer attitudes, closing the sale. Students undertake a number of role-play sessions to develop skills in practice situations.

B14-S401 Personal Selling
A practical course in personal selling, designed for students who endeavor a career in sales. The course takes a practical approach in that the emphasis is on the development of specific sales skills such as prospecting demonstration, handling objections, proving, opening and closing sales, etc. While sales theory provides a framework, skills are developed through application using the techniques of role play, case studies and features-benefit analysis.

B14-S501 Psychology
This is an introductory course designed to give the student an overview of the major topics and concepts in the field of psychology. It examines the approaches to gathering and evaluating evidence about the causes and correlates of behavior and also the means by which psychological knowledge is (or can be) applied to facilitate human growth and development.

B14-S544 Sociology
This is an introduction to the perspective of sociology and how it helps us to understand our social existence. It calls attention to the continuous interplay between the individuals and the social context in which they live out their lives. It also looks at the interrelationship between society’s various institutions. Emphasis is placed on the presentation of an historical, theoretical and cross-cultural perspective of Canadian society in a time of rapid change.

B14-T118 "In Business" Training
The course is designed to give students a fundamental understanding of the business world and how it operates in our society to achieve its objectives and make its contribution to the standard of living.

B14-T218 Advanced “In Business” Training
This course provides more exposure to the business world and its problems. In addition to speakers, the student works one week in the field with a sponsoring company. During the “in business” week, the student prepares a report which overviews the marketing strategy of the sponsoring firm.

B14-T318 “In Business” Sales Training
This course is designed to further familiarize the student with a business environment. There is a more direct focus on sales careers and an attempt is made to narrow down the field of choice by exposure to various alternatives. One week is spent in a sales-oriented capacity with a sponsoring firm. As in Term 2, a major “in business” training report is completed and focuses on the sales strategy.
B15-C101 Data Processing 1: Introduction and ASSEMBLER
This course is a basic introduction to data processing. The initial part of the course deals primarily with basic concepts and terminology. Following this, programming concepts are introduced. For this, the Red River Community College and University of Manitoba’s computer systems are used. The student is required to design, code and test a number of programs using ASSIST (IBM BASIC ASSEMBLER).

B15-C201 Data Processing 2: COBOL
Data Processing 2 is a continuation of the work begun in Term 1. The initial part of the term is devoted to more ASSEMBLER language programming concepts with an emphasis on table-handling techniques. Following this, the COBOL portion of the term is begun and continues through to the end of the term.

B15-C301 Data Processing 3
The emphasis in this term is towards designing and coding programs for on-line applications. The first two to three weeks of the term are used to complete the COBOL portion of the course which was started in Data Processing 2 B15-C201. Topics covered are: 1) accessing and updating indexed files and 2) forms management concepts. For this second topic Hewlett-Packard’s VIEW PLUS software is used in conjunction with COBOL. The remainder of the term will be given over to “C.” Concepts associated with this language such as functions, blocks, statements, file processing, I/O intrinsics, random number generation, etc., will be covered using Hewlett-Packard’s “C” compiler.

B15-C304 Operating Systems
As an introduction to operating systems, this course covers the general theory of operating systems. Three types of operating systems are covered: 1) a mainframe computer operating system, 2) a microcomputer operating system and 3) a multi-platform operating system. Students learn JCL and receive hands-on instruction using: 1) IBM’s OS-JCL (mainframe), 2) MS-DOS (microcomputer) and UNIX (multi-platform).

B15-C308 Systems Analysis
This is the first in a series of two courses in systems analysis and design offered in Terms 3 and 4 of the Computer Analyst Programmer program. This, the first course, focuses on the analysis phase of systems development while the second covers the design phase. The objective of this course is to provide the student with an understanding of the duties of the systems analyst together with an understanding of specific methods and techniques used in the analysis phase of the systems life cycle. Three basic approaches are covered: traditional (classical), structured and prototyping. The application of CASE tools is illustrated with demonstrations of the use of Excelerator from Index Technology.

B15-C405 RPG Programming
This course is designed to develop programming skill with the RPG II and RPG III/400 programming languages. The features of both RPG II and RPG III/400 language specifications, programming techniques, file handling and on-line processing will be covered by lectures and reinforced by programming projects in labs. The programming projects will be executed on microcomputers using software available on the microcomputer network.

B15-C406 File Structures
File Structures provides an introduction to database processing from the standpoint of the physical representation of the database. The topics provide background material needed to understand how database systems operate. Major topics include input/output processing and file organization, data structures commonly used in the database environment, representation of trees and networks, techniques for representing secondary keys and IBM’s VSAM files. A student should write three COBOL programs to simulate database processing: a) to create a simple linked-list structure, b) to maintain a tree structure using the child and twin pointer technique, c) to create and manipulate a values and occurrence table to maintain non-unique secondary keys.
B15-C408 Systems Design
This is the second in a series of two courses in systems analysis and design offered in Terms 3 and 4 of the Computer Analyst/Programmer program. This, the second subject, focuses on the design phase of systems development while the first covered the analysis phase. The objective of this course is to provide the student with an understanding of the duties of the systems designer together with an understanding of specific methods and techniques used in the design phase of the systems life cycle. Specifically, the topics covered are: output design, input design, file/database design, processing and controls, implementation and hardware/software selection. The application of CASE tools is illustrated with demonstrations for the use of Excelerator from Index Technology.

B15-C507 Business Applications
The objective of this course is to provide the student with an understanding of the functions, characteristics and components of the most common business applications. The following applications are covered: Receivables – invoicing, cash receipts, accounts receivables; Payables – accounts payable, fixed assets, employee payroll; Materials Control – customer order entry, inventory control, purchasing and receiving; Financial and Marketing – general ledger, sales analysis and market planning. Also included, “Real World” software applications.

B15-C508 Microcomputers
The objective of Microcomputers is to provide the student with a basic understanding of commonly used software packages. The students work through a program of practical exercises on personal workstations in the microcomputer lab. WordPerfect 5.1 word processing software, the spreadsheet package Lotus 1-2-3 and Windows 3.1.

B15-C509 dBASE IV
The objective of this course is to familiarize students with microcomputer database processing. The course material is designed to provide extensive hands-on database experience using a database management system called dBASE IV. dBASE is currently one of the most widely used database packages for microcomputers in the business environment. The course will provide students with the ability to create and maintain databases, performing database tasks such as adding, changing, deleting, sorting and querying. Processing from the Control Center as well as programming from the DOT prompt will be covered. The course is tutorial in nature. Instruction and demonstration of database principles and techniques are supplemented by lab assignments.

B15-C601 Edit Project
This is a lab course in which the student is required to complete the on-line/edit program. Assigned in Term 5 in Business Applications B15-C507, the project is designed to give the student experience in designing, writing and testing a large on-line program in a main-frame environment. The students is required to use COBOL along with VIEW PLUS (Hewlett-Packard’s forms management software).

B15-C603 Database
The objective of this course is to introduce Computer Analyst/Programmer students to commercially available database management systems. Specifically, the database products covered are hierarchical: IMS (IBM), relational: SQL (Hewlett - Packard) (All Base).

B15-C608 Fourth Generation Software
This course instructs students in the latest fourth generation methodologies. The PowerHouse system developed by COGNOS is used for this purpose. Instruction and hands-on experience are given to each student using the four main products that make up the system: FDLL data dictionary processor, QUIZ: report generator, QTP: volume processor, Quick: screen design and on-line data entry processor.
B15-C609 Computer Topics
This course is structured as a series of modules that change with changes in industry. Emphasis is on an introduction to data communications, current trends and current hardware developments (networking is included). The Internet and client server are also discussed/covered.

B15-C610 Work Experience
Students will work for six weeks full-time in a computer installation in Winnipeg.

B15-L001 Microcomputers and Word Processing for Library Technology
This course is an introduction to basic computer concepts and terminology. Students are provided with hands-on experience with MS-DOS. Students also learn word processing skills using WordPerfect. Computer knowledge and skills are related to the library workplace.

B15-L002 Spreadsheeting
Students learn to use Lotus 1-2-3. Library applications are emphasized.

B15-M102 Maths of Finance
Review of algebra, numbering, systems, discount, simple interest, negotiable instruments, ordinary annuities, installment buying, annuities due, deferred annuities, debt extinction by amortization and sinking fund, bonds, depreciation, perpetuities, capitalization and comparison of buying costs.

B15-M301 Statistics
The course deals with statistics as applied to business management and research, covering summarizing data, frequency distributions, statistical descriptions, probability, decision making, probability distributions, sampling distributions, estimation and hypothesis testing.

B15-S109 Computer Applications
Students learn basic DOS commands and functions. Document creation, editing, formatting, printing and various enhancements are covered in WordPerfect. Spreadsheet applications for the hospitality industry are applied using Lotus 1-2-3.

B15-S110 Introduction to Data Processing
General computer literacy and the WordPerfect word processing software.

B15-S209 Computer Literacy 1
Computer Literacy 1 has been designed to meet the needs of students wishing to become comfortable with using the IBM PC. To achieve this goal, the students will use a hands-on approach using WordPerfect and DOS software programs.

B15-S213 Microcomputer Productivity Software 1
This course will cover: a) computer literacy including software, hardware, CPU input/output, secondary storage files and databases, communications and information systems, b) introduction to DOS microcomputer operating systems, c) word processing: WordPerfect 5.1 to include editing, formatting, spelling, headers, text, columns, mail merge and other features.

B15-S214 Microcomputer Productivity Software 1 Int
This course will cover: a) computer literacy including software, hardware, CPU input/output, secondary storage files and databases, communications and information systems, b) introduction to DOS microcomputer operating systems, c) word processing: WordPerfect 5.1 to include editing, formatting, spelling, headers, text, columns, mail merge, and other features.

15-S309 Computer Literacy 2
Computer Literacy 2 has been designed to meet the needs of students wishing to become familiar with spreadsheets on the IBM-PC.
B15-S310 Microcomputer Database
The objective of the course is to familiarize students with microcomputer database processing. The course material is designed to provide extensive hands-on data base experience using a database management system called dBASE IV. dBASE is currently the most widely used database package for microcomputers in the business environment. The course will provide students with the ability to create and maintain databases, perform database tasks such as adding, changing, deleting, sorting, printing and to look up information. The course is tutorial in nature. Instruction and demonstration of database principles and techniques are supplemented by laboratory assignments.

B15-S313 Microcomputer Productivity Software 2
This course is a continuation of Microcomputer Productivity Software 1 B15-S213 and will cover spreadsheet Lotus 1-2-3 to include formulas, copying, inserting, conditional statement, tables, sorting and graphics.

B15-S314 Microcomputer Productivity Software 2
This course is a continuation of Microcomputer Productivity Software 1 B15-S213 and will cover:

a) DOS to include working with root and subdirectories,
b) spreadsheet Lotus 1-2-3 to include formulas, copying, inserting, conditional statement, tables, sorting and graphics.

BB15-S601 Microcomputer Database
This course will give students the opportunity to further their exposure to microcomputers. A micro database management system, dBASE IV, will be taught. A database is a useful tool for organizing, manipulating and retrieving data. It is used throughout the computer industry, on micros and in mainframes. The course will introduce dBASE IV Data Base Management System through accessing and manipulating data in an existing database. It will then show the student how to build a database system.

B16-A004 Business Communications 1
This course deals with the importance of two-way communication, verbal and non-verbal communication, effective listening, business letter writing, resume writing and developing skills in written and oral presentations.

B16-A006 Business Communications 2
Students will learn about the communication process, barriers to communication, various methods of communication, effective oral presentations, interviewing, conducting effective meetings, techniques for handling difficult customers and negotiating skills. Students will be expected to use written and oral communication skills in the development and presentation of their business plans.

B16-C695 Hospitality Advertising, Sales and Public Relations
Students learn the essential elements of promotion planning and the requirements of effective advertising, public relations, sales management and personal selling in promotion strategy.

B16-E123 Sales Communications
Through effective listening and speaking techniques, you will strengthen your interpersonal skills necessary in the sales field. You will participate actively in classes and workshops in order to develop presentation skills for delivering both informal and formal speeches. In addition, you will enhance your writing skills through the preparation of your resume and cover letter.

B16-E129 Business Communication 1
Students will review the fundamentals of grammar, punctuation, tone and organization while applying these skills to routine types of business communication: letters, memos and resumes. They will also learn study skills applicable to all their courses.
**B16-E202 Advanced Sales Communications**
During this term, through the practical application of new written and verbal skills, you will learn to meet the needs of sales and marketing personnel. First, you will become familiar with specific types of business correspondence and reports in order to prepare memos, letters and informal reports. Then you will participate in role playing to demonstrate effective group dynamics.

**B16-E289 Business Communication 2**
Students will prepare a detailed report relating to computers. They will learn research skills, organization and analytical thinking. In addition to their written report, they will present their projects to the class in a formal oral presentation. They will also participate in a simulated employment interview.

**B16-E811 Basic Business Communication**
Students will review the fundamentals of grammar, punctuation, tone and organization while applying these skills to routine types of business communication: letters, memos and short speeches. They will also learn study skills applicable to their courses.

**B16-E822 Intermediate Business Communication**
Students will further develop their communication skills by preparing business letters. They will also write a short informational report.

**B16-E833 Advanced Business Communication**
Students will conduct research to prepare an analytical report. They will prepare a resume and application letter as well as participate in a simulated employment interview. They will also learn tactful methods of opposition.

**B16-E841 Basic Business Communication**
The objective of this course is to enable the student to become a clear, concise, forceful communicator in both the oral and written modes. The term begins with an introduction to the process and principles of effective communication. These principles will then be applied to various methods of communication used in business: memos, letters and short speeches.

**B16-E842 Basic Business Communication**
Students will review the fundamentals of grammar, punctuation, tone and organization while applying these skills to routine types of business communication: letters, memos and short speeches. They will also learn study skills applicable to all their courses.

**B16-E843 Advanced Business Communication**
In this course, students will learn how to write an effective resume as well as an application letter and other documents related to employment. Students will research a company and present their findings in both the written and oral modes. They will also participate in two mock job interviews.

**B16-E844 Advanced Business Communication**
Students will conduct research to prepare for a formal presentation. They will prepare a short research report and write a summary of a larger article or report. They will also learn tactful methods of delivering bad news and dealing with opposition.

**B16-E852 Intermediate Business Communication**
Students will further develop their communication skills by preparing a short research report and writing summaries of larger articles. They will also learn tactful methods of delivering bad news and dealing with opposition.

**B16-E853 Intermediate Business Communication**
Students will further develop their communication skills by preparing longer, more persuasive types of communication. They will prepare a resume and application letters as well as participate in a simulated employment interview. They will write a short report and give a persuasive speech.
B16-L001  Academic Course: Business Communications
Students review the fundamentals of grammar, punctuation, tone and organization while applying these skills to routine types of business communication: letters, memos and short speeches. They also learn study skills applicable to all their courses.

B16-L002  Academic Course: Career Writing
Students continue to master written and oral skills required in a library setting. Students learn to write abstracts, business reports, book reviews and to conduct effective meetings and take minutes. Students also prepare resumes, letters of applications and learn proper job interview skills.

B16-L003  Academic Course: Children’s Literature
This course is designed to cover the many aspects of children’s literature to aid the student in the choice and recommendation of books for children. The practicum includes storytelling and reading aloud.

B16-L004  Academic Course: Young Adult Literature
Special emphasis is on contemporary, intermediate and young adult literature and Canadian writers. Students learn to write book reviews. The practicum includes book-talking.

B16-L005  Academic Course: Canadian Literature
This course is designed to introduce students to works by Canadian writers and to develop basic skills in writing about literature and doing research in literary areas. Students will look at a variety of works and examine such terms and concepts as imagery, irony, point of view and genre.

B16-L006  Academic Course: Literary Genres
This course is an introduction to types of popular fiction including westerns, historical fiction, romantic fiction, mystery and detective fiction, fantasy and science fiction, spy/espionage novels and thrillers. Readers’ advisory services is also covered.

B17-A001  Introduction to Business 1
This course presents an overview of the functional areas of a business, i.e., marketing, accounting, finance, human resource management, production management. Also included is an introduction to management functions and the concept of business as a system.

B17-A003  Personal Management
This course will cover interpersonal communications, public speaking, values clarification, decision-making and problem-solving skills, time management, stress management, networking, and assertiveness training.

B17-A004  Management
Students will learn about principles related to the various functions of a manager. Particular emphasis will be placed on decision making, planning, organizing and control. Experiential exercises and case studies will be used to give the student practice in applying management principles. (This knowledge will be integrated into the development of their business plans).

B17-A005  Production Management
Students will learn about factors to consider regarding location, facilities planning, layout considerations, production planning, inventory control techniques, scheduling, choosing suppliers, quality control and maintenance and materials handling. The student will be expected to apply principles in this course to his/her individual business plans.
**B17-A006 Introduction to Business 2**

Students will study, in depth, small business, profit and its role, the role of the entrepreneur, forms of business ownership, methods of entering into business, reasons for business success and failure, environments of a business, the price system, the business plan and the concept of business as a system. Students will be expected to relate principles and concepts studied to the development of their business plans.

**B17-A007 Pre-Launch Counselling**

This portion of the Entrepreneurship Training program will be optional. Students wishing to participate in this portion of the program will be required to pay one month's tuition fee as set by the College. Hours will vary with number of clients. Clients will be given assistance in the areas of marketing, production/operations management, licensing, policy formulation, staffing, lease negotiations and any other areas with which they are concerned. The students will meet with the instructor at least once per week during this period to assess progress.

**B17-E651 Introduction to Communication**

This course provides a comprehensive review of grammar, mechanics and punctuation as well as techniques for writing effective sentences. The course also contains a learning strategies component which covers study, test writing and note-taking skills.

**B18-A029 Mentorship**

Students will be placed in a mentorship situation within the first six weeks of the program. Each student will be paired up with one or more business people with businesses similar to the one the student wishes to own or operate as an entrepreneur. During this time, students are given advice and guidance based on the mentor’s own experience and knowledge. The mentor will act as an on-going resource for the student during training and it is hoped, after completion of training. A two-week period will be dedicated to an on-site mentorship prior to oral presentations.

**B18-A205 Accounting 1**

This course is designed to introduce basic accounting procedures, concepts and applications. Accounting procedures include journalizing, posting, balancing ledgers, preparing, adjusting and closing entries for a service industry.

**B18-A305 Accounting 2**

In this course, the student will use subsidiary ledgers, special journals, make adjusting, closing and reversing entries and prepare financial statements for a merchandising business. Students will also prepare bank reconciliations and petty cash records as well as calculating and recording a payroll.

**B18-B504 Introduction to Business**

The intent of this course is to provide students with a basic overview of the Canadian business system and its importance in the economy and in society. To enable the administrative assistant to participate in strategic planning, the course will familiarize students with such topics as: business ownership, organization and management, business decision-making processes, entrepreneurship, labor relations and Canada’s role in the global economy.

**B18-C225 Communications 1**

Through the writing process, students will be able to write clear, concise paragraphs incorporating correct grammar, spelling, punctuation, word division and vocabulary usage.

**B18-C325 Communications 2**

Students will apply English mechanics in writing inter-office memos and in writing a variety of letters. Students will practice editing their work; they will also perform a job search, write a resume and covering letter and prepare for the job interview.
B18-C425 Report Writing
This course is designed to enable the student to prepare various types of reports, collect information including library research, correctly structure the content, prepare graphics and visual aids for use with reports and oral presentations and write, evaluate and edit suitable to a business organization.

B18-C505 Oral Communications
This course is designed, through active participation, to enhance students' ability to communicate verbally on a one-to-one basis and in group situations. Students will evaluate and summarize relevant information in preparation for their oral presentations. This course also includes all aspects of preparing for and managing effective meetings.

B18-D405 dBASE IV
This course is designed to provide the student with an opportunity to use databases in relation to the dBASE IV software, become familiar with the relational capabilities of the dBASE IV software, set up and enter data, search for data, understand user commands, design and create reports, customize input screen for user friendliness and validate input into database.

B18-E400 Co-operative Work Experience 1
Co-operative education is paid, on-the-job work experience. Students are exposed to the practical aspects of their training and to the requirements and expectations of employers. The experience is monitored by the co-operative coordinator. The student's performance and the work placement are evaluated and students are required to write a comprehensive report on the experience.

B18-E402 Employment Preparation 1
This course is designed to prepare students for their first co-operative work experience in Term 4. Included will be the philosophy of co-operative education, the reporting system and the student's responsibility within it, individual skills and interests assessment and the job application.

B18-E502 Employment Preparation 2
This course is designed to prepare students for their second co-operative work placement in Term 6. It includes feedback and analysis of the first placement and developing strategies to meet employers' needs for the second placement.

B18-E600 Co-operative Work Experience 2
This is the program's second paid on-the-job work experience. Goals and requirements are the same as those for Co-operative Work Experience 1.

B18-F403 Records Management 1
This course will provide the student with an understanding of what a records management system is, the rules and filing procedures covering alphabetic, subject, numeric and geographic classifications, familiarity with filing equipment.

B18-F503 Records Management 2
The student will learn how to evaluate a records system, control the creation of records, analyze forms, conduct a records inventory, evaluate storage and retrieval procedures, establish records retention schedules, transfer records and evaluate safety and security of records.

B18-G604 Desktop Publishing
This course is designed to introduce the student to electronic desktop publishing. The student will design and produce a variety of documents that maximize the use of text and graphic display.

B18-L305 Lotus 1-2-3
Lotus 1-2-3 is the most popular computer spreadsheet program in business today. Students will prepare an electronic database and manipulate data through spreadsheeting, graphing and data management techniques.
B18-M305 Office Procedures
The role of the administrative assistant requires efficiency and competence. This course encourages the student to use initiative and time-management principles in planning, organizing and carrying out routing office duties. As well, there is practice in organizing meetings, taking minutes of meetings and formatting them, preparing materials for visual presentations, making travel arrangements and preparing expense reports.

B18-O605 Organization/Seminar
Students working in groups will organize and facilitate seminars on such topics as: cultural differences in the workplace, ergonomics, sexual harassment, environmental issues and career development. With guidance from instructors, students will be responsible for all aspects of each seminar. These seminars will be open to other students and faculty in the Business department.

B18-S604 Supervision
This course is designed to enable the student to explore the basic principles underlying human behavior, the fundamentals of motivation and to discuss individual and group behavior as it pertains to the work environment. This course will also include topics such as: effective delegation, leadership, strategies for implementing change, performance evaluation, discrimination and office politics.

B18-T100 Keyboarding for Information Processors
This course is designed to prepare students to use touch-typing techniques on a typewriter keyboard. Concentrates on familiarizing students with letters, symbols and numbers of the typewriter keyboard. (These keys are identical with most microcomputer and word processor keyboards.) Numerous word and sentence drills develop accuracy and speed. A minimum keyboarding speed of 20 words per minute is required (or must be achieved).

B18-T210 Keyboarding 1
This course develops touch-typing techniques and introduces basic formatting.

B18-T310 Keyboarding 2
This course develops touch-typing speed on straight copy and includes formatting of letters, memos, forms, tables and reports.

B18-T405 WordPerfect – Basic
This course requires the student to produce (in mailable form) a variety of letters, memos, tables, business forms, financial statements and reports.

B18-T505 WordPerfect – Advanced
Using the knowledge gained from the WordPerfect – Basic course, students will expand their knowledge of some of the more advanced functions. Some of the functions included are: macros, sort and select, math functions in tabular columns, parallel/newspaper columns, graphics and file management.

B18-V205 Interpersonal Communications
Interpersonal skills are considered to be extremely important in business today. This course will focus on the communications process, verbal and non-verbal communication, working effectively in a group, communicating effectively with co-workers, supervisors and the public, projecting professional attitudes, managing conflict and managing stress.

B18-W120 Word Processing: Introduction
This course introduces students to keyboarding and to creating, editing, printing, indexing and filing documents. Students apply their knowledge to processing documents relevant to their main course areas.
B18-W402 Windows
This is an introductory course designed to develop the skills necessary to work in the Windows graphical environment using IBM or IBM-compatible personal computers using Microsoft Windows software.

B18-W405 Keyboarding 3
This course requires the student to produce in mailable form a variety of letters, memos, tables, business forms, financial statements and reports at an advanced level. Students must also touch type at a minimum of 50 wpm on straight copy.

B18-W505 Keyboarding 4
This course is designed to increase touch-typing skills and to develop decision-making skills through working with items of varying importance.

B18-W535 Word Processing
This course is 60 hours in duration and consists of lectures and hands-on practical experience completing medical applications on an IBM-compatible computer using WordPerfect software. Students should have approximately 35-40 wpm and may or may not be familiar with appropriate set-up for various medical documents. A small portion of time will be spent on improving keyboarding skills using medical terminology and drills.

B18-W555 WordPerfect Applications 1
During this course, students will apply knowledge gained in the Basic and Advanced levels of WordPerfect, along with communication skills, to a series of in-basket situations. The course will include forms design and the preparation of visuals for presentations. Students are required to make decisions and are encouraged to use their creativity.

B18-W656 Microsoft Word/Windows
Through the creation of realistic business documents, students apply the features of Word for Windows. The course begins with basic formatting and progresses through advanced character formatting, tables and columns, styles and macros, merging and graphics.

B18-X205 Introduction to Computers
This course serves as a foundation for all the other computer courses in this program. It includes fundamental computer concepts, DOS and file management, computer systems and hardware specifications.

B18-X505 Microsoft Office
This course will introduce students to the most popular integrated software suite used by business. By taking advantage of the automatic features, templates and linking of information between the word processor, spreadsheet and database and presentation applications found in this product, students will be able to create high-quality documents effectively for various business projects required by the modern office.

B18-X605 Software Applications
In this course, students will select appropriate computer applications to manage and display information. Students will practice software integration through import and export functions. Students will also investigate and compare the latest in software designed to make the job of administrative assistant easier and more efficient.

B19-C762 Medical Coding 1
An introduction to coding principles and the various systems for the classifications of diseases, conditions and procedures in health care facilities and agencies. The major emphasis is placed on ICD-9CM. Prerequisites: Health Records Science 1 B19-R741, Medical Terminology 1 B19-M751 and Anatomy and Physiology 1 H03-L113.
B19-C763 Medical Coding 2
This course provides a continuation of Medical Coding 1 and is designed to develop proficiency in ICD-9CM coding. In addition, abstracting of health information according to the Manitoba Hospital Information System is introduced. Students are given the opportunity to apply skills to actual health records with the on-site coding practice program. Prerequisites: Medical Coding 1 B19-C762, Medical Terminology 2 B19-M752, Health Records Science 2 B19-R752, Anatomy and Physiology 2 H03-L213, Communications 1 B19-E751.

B19-E751 Communications 1
Communications 1 is the first of three terms designed to develop written communication skills. Through the writing process, students will be able to write clear, concise paragraphs incorporating correct grammar and mechanics, spelling, word division and vocabulary usage as it applies to the medical field.

B19-E752 Communications 2
This course is designed to strengthen the student's grammar/mechanics in order to edit written work. Inter-office memorandums and a variety of medical/business letters are included. In addition, students will participate in a job search by writing a resume and covering letter. Prerequisite: Communications 1 B19-E751

B19-E753 Communications 3
This course emphasizes report writing and the student is introduced to standard report formats and ways of taking advantage of these formats to improve the organization and presentation of ideas. The focus will be on the essential features, organization, development, coherence, which aid effective report writing. During this course, the student will also apply knowledge to write, evaluate and edit reports. Prerequisite: Communications 2 B19-E752.

B19-M751 Medical Terminology 1
An introduction to the technical language of medical science through the study of combining forms, roots, stems, prefixes, suffixes and derivatives, synonyms, homonyms, common disease terms and specialty classifications.

B19-M752 Medical Terminology 2
A continuation of the study of the language of medicine through the study of medical abbreviations, laboratory and x-ray tests, drugs and drug classifications and disease, operations and conditions relative to each body system. Prerequisite: Medical Terminology 1 B19-M751.

B19-N751 Medical Transcription
A course designed to introduce principles of transcribing medical and surgical reports and to apply these to format and procedures currently utilized in health care facilities. The objective is to provide students with an opportunity to apply theory learned in Health Records Science, Medical Terminology and Anatomy and Physiology. Prerequisites: Health Records Science 2 B19-R752, Medical Terminology 2 B19-M752 and Anatomy and Physiology 2 H03-L213.

B19-P303 Hospital Practicum
This is a four week in-hospital training program offered in Term 3 and is designed to provide the student with an opportunity to apply the knowledge gained during the course of study and in so doing, prepare for active participation in the health care field. Sites utilized are accredited and the health record services are directed by a certified health records practitioner. This is a mandatory component of the Health Record Technician program and no supplementary privileges are granted. Students are assigned where appropriate and are responsible for all costs incurred. Prerequisites: Health Records Science 2 B19-R752, Medical Terminology 2 B19-M752, Medical Coding 2 B19-C762, Medical Transcription B19-N751, Anatomy and Physiology 2 H03-L303, Health Records Science 1 B19-R741.
B19-R741 Health Records Science 1
This is one of the core courses in the program and introduces the student to the development of the health records profession and to the study of the basic components of health records, numbering and filing systems, quantitative and qualitative analysis, record retention and retrieval and indices. The relationship of health records to the medical staff and hospital organization in general is discussed. A one-week mandatory practicum is included as part of the course of study.

B19-R752 Health Records Science 2
This course is a continuation of Health Records Science 1 and includes the compilation of health statistics, quality assurance, utilization review and the role of the health record practitioner in organization and management of a health care facility. The student will also study pertinent legal health care issues (patient access, health care directives, release of information). A one-week mandatory practicum is included as part of the course of study. Prerequisite: Health Records Science 1 B19-R741.

B21-A010 Computers in Business
Students will be taught DOS, word processing, and spreadsheets. Students will also be exposed to the Bedford Accounting system, a database program and their application. Students will be expected to use these computer tools in developing their business plans.

B22-B110 Shorthand 1
A course introducing elementary principles and practices in Pitman Shorthand with daily instruction in recording, writing and transcription.

B22-B112 Keyboarding and Basic Formatting
Basic concepts in keyboarding are introduced. Topics include letters, tables and manuscripts in the basic styles. Straight copy speed at the end of the course ranges from 30-40 wpm.

B22-B113 Word Processing and Advanced Formatting
This is a computer-based word processing course. Skill building in straight copy is continued as well as further instruction using various styles of letters, tables and manuscripts and business forms are introduced. Straight copy speed at the end of the course should be approximately 50 wpm. Prerequisite: Keyboarding and Basic Formatting B22-B112 or equivalent.

B22-B116 Fundamentals of Accounting
An introduction to accounting concepts and practices. Topics covered include recording transactions, adjusting and closing entries, worksheets, merchandise accounting, controlling cash and accounting for assets, liabilities and corporations.

B22-B120 Data Processing 1
A general overview of the development of business data processing dealing with hardware, software, communications and the use of computers in our world today. A series of assignments using the fundamental functions of DOS and database and spreadsheet business software will be completed on a microcomputer.

B22-B205 Management Accounting Systems
An introduction to managerial cost accounting, corporate financial decision-making and accounting information systems. The course applies accounting fundamentals, mathematical algebraic equation skills and financial decision-making in production and manufacturing accounting, operations budgeting, capital budgeting and investment decision analysis. Prerequisite: Fundamentals of Accounting B22-B116 or equivalent.

B22-B208 Business Organization and the Consumer
A broad analysis of business concepts, functional internal characteristics of business, the interrelationships of business, government and consumers and discussion of consumer decision-making.
B22-B209 Intermediate Accounting
Involves accounting information useful in decision making with a review of all accounting procedures. The course includes an in-depth study of the principles and techniques as applied to cash, temporary investments, receivables and fixed assets. (Equivalent to 9.201 in Faculty of Management, University of Manitoba). Prerequisite: Grade of C in Fundamentals of Accounting B22-B116 or equivalent.

B22-B210 Intermediate Accounting 2
This course provides an in-depth study of computer accounting software for general ledger, accounts receivable, accounts payable, payroll, inventory and corporation accounting through hands-on microcomputer applications. Emphasis is placed on developing business accounting systems and the techniques for teaching microcomputer accounting. Prerequisites: Fundamentals of Accounting B22-B116 and Data Processing 1 B22-B120 or equivalents.

B22-B220 Data Processing 2
A study of business computer applications which provides an overview of business computer systems and business microcomputer software. Topics include the analysis and design of data files and management information systems, the development of accounting information systems, and the utilization of microcomputer accounting software for clerical and accounting applications. Prerequisite: Data Processing 1 B22-B120 or equivalent.

B22-B222 Records Management
Technological changes have impacted greatly on the creation, content and dissemination and retention of information. Records Management deals extensively with each of these areas. Current technology is used to develop systems to integrate all of these elements which make up an effective records management program.

B22-E203 Course Development in Business Education
Development of an orderly procedure for the identification of concepts and instruction units to be used in teaching. The culminating project will be a course outline involving analysis of content, instructional objectives, resource units and sample tests.

B22-E204 Educational Testing and Evaluation
Construction, administration and evaluation of tests. Methods of evaluation of student progress during the school year. Mastery of the statistical analysis necessary for testing and evaluation.

B22-E206 Educational Psychology
The study of growth and development from infancy to maturity, with emphasis on adolescence. The learning process in acquiring skills, ideas and attitudes. Motives and problems in the life of the individual student. Mental health of the teacher.

B22-E209 Methods of Teaching Retailing
An introduction to the principles and practices of directing learning in marketing education. Examination and assessment of various methods and techniques used in marketing education. Examination and evaluation of various marketing education programs.

B22-E210 Classroom Counselling
This course focuses on developing an understanding of student concerns and problems and the fundamental guidance skills, including the definition of counselling, the role of school counsellors and how to deal effectively in the classroom with student learning, social behavior and emotional problems. Case materials, role playing and referral techniques are used to develop the guiding principles for effective intervention by the teacher.
B22-E212  Teaching Typewriting and Office Systems Management
Preparation for instruction in keyboarding, formatting and word processing with emphasis on development of resources and resources in relation to the psychomotor domain. Research will be conducted on office systems and their implication for classroom teaching procedures. Prerequisite: Keyboarding and Basic Formatting B22-B112.

B22-E213  Methods of Teaching Basic Business
A course which enables students to examine and practice effective ways of encouraging and directing student learning in the basic business subjects such as economics, law, futures in business, business principles and skills for independent living. The activities include preparing resource packages, unit plans, lesson plans and microteaching using various teaching techniques.

B22-E220  Methods of Teaching Data Processing and Accounting
Focuses on methods of presenting and curriculum content related to teaching accounting and computer-related courses in the school system. The course examines the procedures for developing and evaluating units, the techniques for preparing and conducting lessons and the current curriculum guides and textbooks. Prerequisites: Fundamentals of Accounting B22-B116 and Data Processing 1 B22-B120.

B22-E222  Comparative Shorthand Systems
This course prepares student teachers to instruct in three shorthand systems authorized in the public schools. Basic methods will be adaptable to all three systems. Students will be given the opportunity to compare the systems and teach theory and use speed-building strategies applicable to any system.

B22-M102  Marketing
An introduction to the fundamentals of marketing including analysis of marketing problems, including determining marketing opportunities, product planning and management, retailing, distribution, promotion, pricing and the various alternatives for achieving economic efficiency in the distribution process.

B22-T111  Seminar and School Experience
A period of student involvement in actual classroom practice. Students will be assigned to an experienced teacher in public school to observe and participate in teaching activities. Informative conferences will be arranged to assist and evaluate the student in the student teaching period.

B22-T211  Student Teaching
A continuation of Seminar and School Experience B22-T111 with less emphasis on observation and more emphasis on actual teaching. The program will also require greater overall teaching responsibilities including planning, classroom management, evaluation and extra-curricular activities.

B23-C102  Construction – Introduction
This course provides a working understanding of the key elements associated with designing, planning and constructing a structure. The major concepts and safety practices are taught through hands-on activities using contemporary tools and materials.

B23-C202  Construction – Advanced
This course develops a working understanding of technology as it applies to construction. Emphasis is placed on the exposure to a variety of activities and experiences which involve the use of traditional tools and machines as well as innovative approaches and the appropriate testing devices. Prerequisite: Construction – Introduction B23-C102 or equivalent.
B23-E103 Audiovisual and Technical Education
This course focuses on the application of audiovisual materials and equipment, microcomputers and application software and other instructional support technology to the development of lesson presentations and demonstrations, useful instructional packages, technology-oriented projects and individualized instruction.

B23-E104 Communication Skills
This course involves reading, writing, listening and speaking. This basic purpose is to create an increased awareness of the communication process. It is designed to interest and inform, provoke and challenge. Students are presented with both theoretical and practical concepts, with emphasis being placed on their application within the education structure.

B23-E105 General Teaching Methods 1

B23-E201 Organizing Industrial Education Facilities
Principles of effective and safe planning of industrial education facilities in relation to the objectives to be fulfilled. Emphasis is on location, size, shape of the laboratory and its physical requirements: specifications, purchasing and placement of required equipment and supplies. In addition, an introduction to the different instructional organizational systems used in industrial education is provided.

B23-E202 Principles of Vocational Education
The course focuses on the development of an understanding of the basic philosophies of education in general and vocational education in particular. The topics include an overview of the history and development of vocational education, the psychological, economic and social foundations of vocational education and the role of vocational education in federal and provincial programs.

B23-E203 Course Development in Industrial Education
This course focuses on the curricula in Industrial Arts/Technology education. A sequential process of formulating, organizing and selecting of course material will be followed. The student will develop a course of study to fit the laboratory facility in which they will be student teaching. The course presents an organized format that potential teachers can apply to courses to be planned and taught and an evaluation of the development process for curricula in Industrial Arts/Technology education.

B23-E205 General Teaching Methods 2
Prerequisite: General Teaching Methods 1 B23-E105. Continuation of General Teaching Methods 1 B23-E105 with emphasis on teaching methods not covered previously. Additional areas of study include: class organization and management, public relations, professionalism and research related to teaching methods in industrial education.

B23-G102 Graphic Communications – Introduction
This course explores the processes and methods used in graphic communications, including communication theory, general layout and design, drafting, screen process printing, basic photography and relief printing as applied to the teaching of graphic communications in industrial arts education. Computer-assisted drafting, paint/draw programs, type modification and desktop publishing with Macintosh computers, CD-ROM clip art, laser printers and scanners are emphasized.
B23-G202 Graphic Communications – Advanced
This course continues the exploration of the processes and methods used in graphic communications, including lithographics, office duplicating, microfilm, binding, finishing and packaging as applied to the teaching of graphic communications in industrial arts education. Computer-assisted drafting, paint/draw programs, type modification and desktop publishing with Macintosh computers, CD-ROM clip art, laser printers and scanners are emphasized. Prerequisite: Graphic Communications – Introduction B23-G102.

B23-M102 Manufacturing – Introduction
Exploration of the wood, metal and plastics fields, including tools, materials and processes, to determine to what extent these materials, tools and processes should be applied at the public school level, in Industrial Arts classes. Also included in the course is a short period of instruction on mass production systems and some hands-on experience for the students in the production of interchangeable parts.

B23-M202 Manufacturing – Advanced
An in-depth study of the tools, materials and processes of the wood, metal and plastics fields with special emphasis on quality control within a manufacturing system. Also to include the business structure as well as the production structure. Each student will be involved in top management, middle management, sales, production and labor levels of a manufacturing system. Prerequisite: Manufacturing – Introduction B23-M102

B23-P102 Power and Energy – Introduction
A theoretical case and practical study of the basic principles of mechanical, fluid and electrical power, covering such topics as internal combustion engines, pneumatics and hydraulics, electron theory, series and parallel circuits, power supplies, motors and generators.

B23-P202 Power and Energy – Advanced
An in-depth theoretical and practical study of mechanical power, electrical power and fluid power, covering such topics as engine tune-up, engine analysis, superheterodyne receiver, amplification, hydraulic and pneumatic experimentation and digital electronics. Prerequisite: Power and Energy – Introduction B23-P102.

B23-T102 Seminar and School Experience
A period of student involvement in actual classroom practice. Students will be assigned to an experienced teacher in the public school to observe and participate in teaching activities. Informative conferences will be arranged to assist and evaluate the student teaching period.

B23-T202 Student Teaching
A continuation of Seminar and School Experience B23-T102 with less emphasis on observation and more emphasis on actual teaching. The program will also require greater overall teaching responsibilities including planning, classroom management evaluation and extra curricular activities.

B23-V101 Vocational Training and Related Work Experience
Credit is received for related work experience.

B23-V202 Introduction to Microcomputers
The course looks at the structure and operation of a microcomputer as well as the fundamentals of programming in the language BASIC.

B23-W102 Co-operative Business/Industrial Education
A special program designed to provide educational experiences relevant to Industrial Arts/Business Teacher Education students in an industrial/business environment. The experience will involve as many aspects of the concerned industry/business as possible. The program will be individualized according to a student's background and a project summarizing the student activities will be a major requirement.
B26-A003 Personnel
Students will learn about human resource planning, recruitment, selection, compensation, orientation, discipline and performance appraisal. Leadership and motivation will also be discussed. Students will be expected to apply knowledge in the above areas to their business plans. Case studies and films will be used to enhance learning.

B26-A010 Entrepreneurship
This course will deal with the concept of entrepreneurship, forms of business ownership, methods of entering into business, the environments of business and the business plan. Developing and evaluating personal entrepreneurial skills and developing and evaluating business ideas are covered.

B26-A019 Mentorship
Students will be placed in a mentorship situation within the first six weeks of the program. Each student will be paired up with one or more business people with businesses similar to the one the student wishes to own or operate as an entrepreneur. During this time, students are given advice and guidance based on the mentor's own experience and knowledge. The mentor will act as an on-going resource for the student during training and it is hoped, after completion of training. A three-week period will be dedicated to an on-site mentorship prior to oral presentations.

B26-A020 Global Entrepreneurship
This component will be integrated into the appropriate areas of the program and will look at ways of entering the international market, with emphasis on importing/exporting, the international business plan, international marketing, international finance, logistics considerations and negotiating abroad.

B30-A305 Nutrition
Basic nutritional requirements and consideration of nutritional factors as they pertain to menu planning and the application of diet foods on commercial menus.

B31-CX01 Practical Yeast Goods
Must be able to prepare a variety of yeast-raised goods.

B31-DX01 Practical Muffins
Must be able to prepare muffin-type products.

B31-FX01 Practical Cakes
Must be able to prepare cakes and icings.

B31-XE01 Practical Pies and Tarts
Must be able to prepare pies and short pastries.

B31-XE02 Practical Choux Pastry
Must be able to prepare choux pastry items.

B31-XG01 Practical Cookies
Must be able to prepare a variety of cookies.

B31-0A00 Demonstrate Basic Baking Prerequisites
Explain basic baking principles and procedures.

B31-0A01 Basic Sanitation Principles and Procedures
Demonstrate and explain basic sanitation principles and procedures.

B31-0A02 Basic Bakeshop Safety Rules
Explain basic bakeshop and kitchen safety rules and procedures.
B31-0A03  Safe and Efficient Use of Bakeshop Equipment
Explain the safe and efficient use of standard commercial baking equipment.

B31-0A04  Standardized Recipes and Conversions
Explain standardized recipes (formulas) and measurement procedures and calculation conversions.

B31-0B00  Basic Baking Ingredient Knowledge
Identify and describe the basic ingredients used to produce baked goods.

B31-0B01  Typical Ingredients Used in Baking
Identify and describe the functions of flour, sugar, water, yeast and salt, etc.

B31-0C00  Prepare Yeast-Raised Goods
Prepare a variety of yeast-raised goods.

B31-0C01  Basic Methods to Prepare Yeast-Raised Goods
Identify and describe the basic methods used to prepare yeast-raised goods.

B31-0D00  Prepare Muffin-type Products
Prepare muffin-type products (quick breads).

B31-0D01  Basic Preparation for Muffin-type Products
Describe the basic preparation methods used for muffin-type products.

B31-0E00  Prepare Pies and Short Pastry
Identify and describe the methods used to produce pies and short pastry.

B31-0E01  Methods Used to Produce Pies and Tarts
Identify and describe the methods used to produce pies and tarts.

B31-0E04  Preparation of Puff Pastry
Explain the preparation of puff pastry and prepare a selection of items.

B31-0F00  Prepare Cakes and Icing
To prepare a basic variety of cakes and simple fillings and icings.

B31-0F01  Identify Mixing Methods for Cakes
Describe the mixing methods used.

B31-0G00  Prepare Cookies
To describe and apply the methods used to prepare a basic variety of cookies.

B31-0G01  Methods for Preparing Cookies
Describe the methods used to produce a basic variety of cookies.

B31-0H00  Basic Management Functions
Explain basic management functions as they relate to bakeshop operations.

B31-0H01  Purchasing Functions
Explain the elements of purchasing function.

B31-0H02  Describe Receiving, Storing and Issuing
Describe the essentials of receiving, issuing and record keeping. Identify storage procedures and describe the basics of inventory control.

B31-0H03  Calculate Cost and Selling Prices
Calculate recipe cost and selling prices and identify the components of basic financial statements.
B31-0H04  Scheduling Staff and Production
Explain scheduling of staff and production.

B31-0H05  Explain the Role of Merchandising
Explain the importance of effective product promotion.

B32-AX10  Practical Basic Food Prep 1
Evaluation of practical performance.

B32-AX11  Practical Restaurant Cooking
Evaluation of practical performance.

B32-AX12  Practical Garde Manger
Evaluation of practical performance.

B32-AX13  Practical Basic Food Prep 2
Evaluation of practical performance.

B32-AX14  Practical Patisserie
Evaluation of practical performance.

B32-A012  Basic Food Preparation
This course involves learning basic sanitation principles and procedures, familiarization with basic kitchen safety and the use of commercial kitchen equipment and knives. Students examine standardized recipes, measurement procedures and calculating conversions. Preparation of stocks, soups and sauces, meat, poultry and fish, rice and pasta and salads and dressing are covered.

B32-B010  Basic Food Preparation 1
Identify and describe WHMIS and demonstrate the safe and efficient use of kitchen knives and standard, common kitchen equipment. Explain basic safety rules and procedures and basic sanitation principles and procedures. Calculate conversions and explain standardized recipes and measurement procedures. Cook meat, poultry, fish, vegetables, rice and pasta. Prepare soups and sauces and explain the preparation of stocks.

B32-B011  Restaurant Cooking
Prepare and serve a series of short order menus in an actual restaurant situation. Prepare coffee, tea and typical breakfast items. Describe the use of dairy products and prepare ice cream desserts.

B32-B012  Garde Manger
Prepare hot and cold sandwiches, appetizers, salads and salad dressings. Prepare and serve buffet items and demonstrate how to debone, cut and portion meat, fish and poultry.

B32-B013  Basic Food Preparation 2
Prepare and serve large quantities of soups, salads, stocks, sauces and meats. Practice time management skills and development and coordination of food production. Practice cooking in an industry cafeteria environment and learn safe and efficient use of kitchen equipment.

B32-B014  Patisserie
Prepare a variety of pastries and desserts, tortes, buffet desserts and yeast-raised products including frozen doughs. Identify common baking ingredients and their uses.

B32-B020  Food Costing
Calculate recipe costs and conversions, portion costs, yields and selling prices.
B32-B021 Menu Planning
Describe essential elements involved in planning a menu. Write a menu and identify types of menus used, as well as determine item popularity.

B32-C206 On-the-Job Training
The student will spend one block of eight weeks duration in the employment of a restaurant or hotel, as arranged by the College, on a co-operative education basis. This will be monitored by our co-op education co-ordinator.

B32-C207 On-the-Job Training
The student will spend a second block of eight weeks duration in the employment of a restaurant or hotel, as arranged by the College, on a co-operative education basis.

B32-N506 Nutrition
Introduction to aspects of nutrition as they pertain to the hospitality industry.

B32-N509 Nutrition
Practice healthy food choices as they pertain to the hospitality industry.

B33-BX01 Practical 1
This constitutes a summation of the student's practical performance.

B33-DX01 Practical Pastry
This constitutes a summation of the student's practical performance.

B33-0A00 Demonstrate Chef Training Prerequisites

B32-0A01 Explain Basic Sanitation Principles and Procedures
Must be able to describe basic sanitation principles and explain appropriate application to food preparation and storage, garbage disposal and equipment maintenance.

B32-0A02 Explain Basic Kitchen Safety Rules and Procedures
Explain basic kitchen safety rules and procedures.

B32-0A03 Explain Safe and Efficient Use of Kitchen Equipment
Must be able to identify basic food processing and cooking equipment and utensils and explain related safe and efficient operating and handling procedures.

B32-0A04 Use Kitchen Knives Safely and Efficiently
Will learn how to use kitchen knives safely and efficiently.

B33-0A05 Explain Standard Recipes, Measures and Calculate Conversions
Will learn how to explain stand recipes, measures and calculate conversions.

B33-0B00 Demonstrate Food Preparation Skills

B33-0B01 Identify Elements Essential to Food Products
Identify the elements essential to the organization of food products.

B33-0B02 Explain Seasonings, Flavorings, Herbs, Spices
Explain seasonings, flavorings and the use of herbs, spices, and condiments.

B33-0B03 Explain the Preparation of Basic Stocks
Must be able to explain the preparation of white, beef, chicken, brown and fish stocks and appropriate procedures for reduction and handling.

B33-0B04 Prepare Soups
Must be able to prepare with recipes a variety of soups and apply appropriate garnishes.
B33-0B05  Prepare Sauces
Must be able to prepare with recipes a variety of sauces for different menus.

B33-0B06  Cook Vegetables, Rice, Pasta and Dumplings
Must be able to, based on the classification of vegetable and the types of rice and pasta, explain, select and apply appropriate cooking methods with attention to sanitation principles and safety procedures.

B33-0B07  Cook Meat, Fish and Poultry
Must be able to cook meat, fish and poultry using dry-heat methods and moist-heat methods appropriate for meat cuts and grades, poultry parts and classifications and for fish types and market forms.

B33-0B08  Debone, Cut and Portion Meat, Fish and Poultry
Must be able to prepare and cut a selection of meat, fish and poultry and perform cutting test(s).

B33-0B09  Describe Preparation of Typical Breakfast Items
Must be able to describe the preparation of typical breakfast items.

B33-0B10  Describe the Use of Dairy Products
Must be able to identify and explain how to select, handle, store and use the different types of dairy produce available.

B33-0B11  Prepare Coffee and Tea
Must be able to describe the handling, the storing and the preparation methods used for coffee and tea. Identify the common types of equipment used.

B33-0D00  Serve Food and Beverage in Dining Room
B33-0D05  Serve Customer
Must be able to describe common types of menus and explain the categories within the menu structure. Serve customers in an efficient, polite manner.

B33-0D06  Dining Room Sanitation and Safety
Basic dining room sanitation and safety principles required of all serving personnel.

B33-0D07  Set Up and Serve Food and Beverages in Dining Room
Preparation for service and serving food and beverages in a dining room in a polite and efficient manner.

B33-0E00  Prepare Patisserie Items
B33-0E01  Identify Baking Ingredients
Must be able to describe the basic bakery ingredients, indicate their characteristics, uses, function and composition.

B33-0E02  Prepare Yeast and Raised Goods
Must be able to prepare a variety of fermented goods and describe the basic methods used.

B33-0E03  Prepare a Variety of Pastries
Must be able to describe how pastries are made and prepare a basic variety.

B33-0E04  Prepare Cakes, Sweets and Desserts
Must be able to describe the various methods used to produce and decorate a variety of sweets and desserts.

B33-0F00  Describe Elements of Cost Control of Kitchen Management
Describe elements of cost control as they apply to kitchen management.
B33-0F01 Control of Mechanisms/Record Food Items Sold
Name the control mechanisms commonly used and explain the recording of food items sold.

B33-0F02 Explain Elements of Purchasing/Inventory Control
Explain the elements of purchasing and inventory control.

B33-0F03 Identify Purchasing Criteria for Food
Must be able to identify purchasing criteria for food and non-alcoholic beverage items purchased by food service operations.

B33-0F04 Describe Receiving, Storing and Issuing Procedures
Must be able to describe the common procedures used to receive, store and issue foods.

B33-0F05 Calculate Recipe Costs, Portion Costs, etc.
Calculate recipe costs, portion costs, yields and selling prices.

B33-0G00 Prepare Garde Manger Items

B33-0G01 Prepare Sandwiches
Must be able to explain the classification of sandwiches and the type of ingredients used. Prepare a variety of sandwiches.

B33-0G02 Prepare Salads and Dressings
Must be able to explain the classification of salads by both their function and ingredients and prepare a variety of salads and permanent-emulsion and temporary-emulsion dressings.

B33-0G03 Prepare Appetizers
Must be able to explain the classification, the function and the preparation of appetizers.

B33-0G04 Buffet Preparation and Services
Must be able to describe, identify and prepare a selection of typical foods used for buffets including their presentation and service.

B33-0H00 Explain Management of Human Resources
Explain the management of human resources in the hospitality industry.

B33-0H01 Describe Basic Concepts of Personnel Management
Must be able to, by examining the elements and current trends of the management process, and the roles of the manager and supervisor, describe the basic concepts of managing and motivating employees.

B33-0H02 Perform Job Analysis/Description/Specification
Perform a job analysis and prepare a job description and job specification.

B33-0H03 Recruit and Select Employees
Must be able to recruit and select employees.

B33-0H04 Explain Hotel/Restaurant Training and Development
Explain hotel and restaurant training and development needs, methods and technology.

B33-0H05 Evaluate Employee Performance
Evaluate employee performance using appropriate performance appraisal procedures.

B33-0H06 Explain Factors Affecting Labor Costs
Explain the various factors that affect total labor costs and describe appropriate cost-control measures.

B33-0I00 Design Menu and Kitchen Layout
B33-0101 Develop Menu
Must be able to describe the essential elements involved in planning a menu. Write a menu. Identify the types of menus used and determine item popularity.

B33-0102 Design Layouts of Kitchen Equipment
Must be able to evaluate and apply the principles of kitchen and cafeteria layout and equipment.

CIV-C192 Engineering Graphics 1
Students will receive a basic understanding in the requirements for technical drawing standards. They will be required to develop basic engineering drafting skills through practice in the use of drawing instruments, the interpretation of simple drawings and sketches, practicing visualization and freehand lineworks and the production and reproduction of simple components and mechanisms. Upon successful completion of this course, students will have obtained a thorough foundation in the fundamentals of engineering graphics, a basis upon which they may further develop their drafting skill and knowledge in their technology specialties.

CIV-C193 Computer-Assisted Drafting 1
Two dimensional drawings are the end products of engineering design and drafting. Computer-assisted drafting (CAD) is revolutionizing the drafting field, CAD is rapidly finding its way into the industry, changing the methods used to produce drawings. This course provides an introduction to AutoCAD on personal computer work stations. The basics of setting up two-dimensional drawings, drawing and editing objects, text styles and fonts and dimensioning is covered.

CIV-C195 Mechanics 1
This course deals with the basic concepts of statics as applied to the analysis of frames, trusses and the determination of centroids and moments of inertia of geometric bodies.

CIV-C196 Surveying 1
This course consists of the theory and use of survey measuring instruments, the steel tape, engineer’s level and transit and basic techniques in the use of these instruments.

CIV-C197 Communications
The overall goal of this course is to help students develop written communication skills, particularly those required by technologists who will be employed in a scientific, engineering or industrial environment. Students will be introduced to computer word processing software programs.

CIV-C199 Mathematics 1
This course is basically a review of high school mathematics with emphasis being placed on trigonometry, solution of algebraic equations, exponents and logarithms.

CIV-C292 Engineering Graphics 2
Students will continue their development in technical drawing standards. They will be required to build advanced engineering drafting skills through visualization techniques and freehand linework, interpretation of technical drawings and sketches and production of intermediate components and mechanisms. Upon successful completion, students will have obtained advanced-level components and mechanisms. This course will be followed by the introduction to more sophisticated AutoCAD software for students’ technology specialty.

CIV-C293 Computer-Assisted Drafting 2
The first half of this term will be a continuation of the previous one and will involve a more complex project. This will be followed by the introduction to more sophisticated AutoCAD program and the production of computer-assisted drawings related to the students’ technology specialty.
CIV-C295  **Strength of Materials 1**
This is a basic course in strength of materials which includes topics of stress and deformation, truss, and frame analysis. Demonstrations of materials testing illustrates the physical behavior of engineering materials.

CIV-C296  **Surveying 2**
This course is a continuation of Surveying 1 CIV-C196 which includes topics of closures, missing courses, systems of surveys and earth work.

CIV-C297  **Report Writing**
This course helps students to polish the communication skills gained in Term 1. Emphasis is on producing the written reports and giving oral briefings common in a scientific, engineering or industrial environment. Instruction also involves interview and job application skills.

CIV-C299  **Calculus 1**
This course provides an introduction to differential calculus of functions of a single variable with emphasis placed on applications related to the fields of Civil Engineering Technology.

CIV-C497  **Principles of Management**
This is a basic course in organizing and delegating work, making sound decisions, improving communication skills, handling conflicts and dealing with organizational ethics and politics.

CIV-C499  **Calculus 2**
This course is an introduction to the process of integration of functions of one variable. It includes techniques of integration as well as applications of integration in elementary problems relating to the field of Civil Engineering Technology.

CIV-C597  **Engineering Economics**
The course covers the basic principles of simple interest, compound interest and the various types of annuities. This should enable the student to better understand the significance of the economic aspects of engineering and to become proficient in the evaluation of engineering proposals in terms of worth and cost.

CIV-C797  **Project Management**
This course consists of the theory of project scheduling using the critical path method. It will include the logistics of the method including terminology, arrow diagrams, expediting, resource allocation, float and calendar dating. A term project will consist of scheduling the construction sequence of building a house and completing it using AutoCAD.

CIV-C897  **Costing and Contract Administration**
This course consists of construction estimating and its related costs with practical exercises in the methods used to estimate residential, commercial and industrial buildings. The student will also develop an understanding of the construction process and competence with the application of management principles to construction projects.

CIV-D491  **Building Science**
This course introduces the student to the field of building science. It comprises application of the diverse physiological and psychological factors which serve to establish a comfortable and healthy energy and moisture balance between the human body and the surrounding enclosed environment. Also, application of thermodynamic characteristics of air/water vapor mixtures in determining the processes required to establish indoor thermal and humidity stability, insulation materials, vapor and air barriers, heating and cooling loads in a building and finally, probability graphic interpretation of thermal and vapor gradients across building envelopes.
CIV-D492 Residential Construction
This course involves the design process and production of construction drawings for a single family residence including construction systems. Architectural drawing conventions are applied to design, preliminary construction and working drawings. Instruction includes the basics of framing and foundation systems relating to construction drawings.

CIV-D493 Computer-Assisted Drafting 3
This course will involve the student in using CAD methods in the production of a variety of engineering drawings with advanced drawing and editing techniques in 2-D and 3-D drawings.

CIV-D591 Building Science 2
This course introduces the student to the terminology used in the field of HVAC, its symbols and abbreviations, and the determination of loads on the HVAC systems. It further provides the student with the skills to graphically study the building envelope for thermal and vapor flow, an understanding of thermal breaks and air sealing practices.

CIV-D592 Commercial Construction
This course consists of familiarizing the student with commercial building by-law requirements, building code requirements, material use and applications.

CIV-D593 Mechanical Systems 1
This course is an introduction to the equipment and systems used in the creation of controlled environments within the wide range of structures already occupied or under development. It covers the relationship of chilled water systems, refrigeration theory and related equipment, heat recovery systems and alternative energy systems.

CIV-D596 Construction Materials and Systems
This course introduces the student to types, principles and functions of major construction systems. Wood, steel, concrete, stone and reinforced concrete are studied with respect to their properties and applications which are generally correlated as Architectural Lab projects.

CIV-D791 Electrical Systems
This course provides an overview of the application of electronics to the many and varied control systems for buildings, as well as an overview of audio, life safety and other specialized electric/electronic systems to the design of building services.

CIV-D792 Architectural Technology 1
This course is concerned with development of architectural working drawings, including related structural framing and foundation drawings. The commercial project designed in Commercial Construction CIV-D592 will be used as the medium through which the conversion of design to construction documentation may be demonstrated. Construction materials applicable for construction of commercial buildings will be incorporated.

CIV-D793 Mechanical Systems 2
This course is an introduction to the design of rural and urban water supply systems, design of cold water distribution systems in buildings, design of domestic hot water systems in buildings, waste handling in rural and urban areas, design of waste and sewer systems in buildings and relevant equipment used in such systems.

CIV-D796 Architectural Environment 1
This course is an introduction to a number of major factors affecting the built environment, noise and sound control, basic electricity leading to electrical illumination studies and color theory.
CIV-D892 Architectural Technology 2
This course is concerned with the planning and designing of a selected building type, limited in size and scope to allow full development of its design and production of architectural working drawings including structural framing layouts.

CIV-D893 Mechanical Systems 3
This course is an introduction to the design of heating/cooling systems for the multi-occupancy buildings based on the utilization of packaged air-handling equipment.

CIV-D896 Architectural Environment 2
This course involves the integration of Architectural Environment 1 CIV-D796 theory with engineering calculations pertaining to sound control, electrical illumination and color theory.

CIV-D898 Soils and Foundation Design
This course consists of the definitions and descriptions of basic soil types and structures, the computation of volume and weight relationships of soil/water mixtures, grain size distribution and design classification systems. It will include some of basic foundation types based on soil characteristics.

CIV-GA01 Graphics Concepts
Emphasis is on the management of graphic information (both vector and raster) including storage algorithms and techniques, color, theory and cartographic presentation.

CIV-GA02 Advanced Application Development
Provides an in-depth investigation into modern application development philosophies and tools, including application generators, forms-based tools, CASE (computer-aided software engineering) tools and integration of textual and graphics software.

CIV-GA03 Statistics

CIV-GA04 Advanced Raster Applications

CIV-GC01 Introduction to GIS Concepts
An overview of GIS, including the fundamentals of GIS implementations (geodetic control, planimetric mapping, cadastral systems, etc.), the role GIS plays in various industries, basic components of GIS (hardware, software (graphics and database), procedures, human resources, etc.). This course is identical to Introduction to GIS Concepts CIV-R894 within the Survey Engineering Technology program. In addition, University of Winnipeg Geography students who have successfully completed Principles of GIS 3302-5 may be awarded credit for this course.

CIV-GC02 C Programming
An introduction to structured programming techniques using the C language. Emphasis is placed on program logic, input/output (file and screen) operations and the use and construction of function libraries.

CIV-GC03 Database Management Systems
An introduction to database management software. Hierarchical, network and relational systems will be examined, with the emphasis on relational DBMS through the Structured Query Language (SQL). Corequisite: Systems Analysis CIV-GC04

CIV-GC04 Systems Analysis
Systems analysis methodologies, software engineering concepts and data modeling techniques will be examined. Corequisite: Database Management Systems CIV-GC03.
CIV-GC05  Raster Applications
Explores the basic operations and functionality of raster display and analysis technology with GIS. Display, database queries, distance and context operators, map algebra, integrated vector and raster applications, satellite image analysis and digital cartographic databases are examined. University of Winnipeg Geography students who have successfully completed Computer Mapping 4307-5 may be awarded credit for this course. Prerequisite: Introduction to GIS Concepts CIV-GC01

CIV-GC06  Vector Applications 1
Examines the basic operations and functionality of vector technology within GIS. Data file structure, map creation and editing, creation and management of topological relationships, linkages with relational database files and attribute queries are covered. University of Winnipeg Geography students who have successfully completed Advanced GIS 4308-5 may be awarded credit for this course. Prerequisite: Introduction to GIS Concepts CIV-GC01.

CIV-GC07  Vector Applications 2
In-depth coverage of the advanced analytical capabilities of vector GIS technology. Polygon, network analysis, digital terrain modeling and viewscape analysis are examined. Prerequisite: Raster Applications CIV-GC05.

CIV-GM01  Management Issues in GIS
Discusses the management issues related to implementing GIS. Topics include the impact of change of individuals and organizations, utilization of existing resources, training and industry standards.

CIV-GT01  Advanced Programming
A continuation of C Programming CIV-GC02, the course examines advanced I/O operations with files and video, basic programming techniques and considerations in the development of standardized code and documentation.

CIV-GT02  Systems Administration
Issues related to the management of computer installations including communication networks, back-ups, security, computer resource management and accounting.

CIV-GT03  Systems Acquisition
Issues related to the acquisition of GIS technology including cost/benefit analysis, the acquisition process, requests for information and proposals and benchmark testing.

CIV-GT04  Systems Implementation
Practical examination of the issues and problems related to the implementation of various aspects of GIS projects. Project planning and documentation, conversion of textual and graphic data and integration of data from multiple sources are addressed within the context of two projects.

CIV-G101  Introduction to GIS Technology
CIV-G102  Introduction to GIS Concepts
CIV-G201  C Programming 1
CIV-G202  Database Management Systems
CIV-G203  Systems Analysis
CIV-G301  Graphics Data Concepts
CIV-G302  Advanced Application Development
CIV-G303  GIS Software Systems
CIV-G401  Resource Applications
CIV-G402 Municipal Applications
CIV-G501 Systems Administration
CIV-G502 Systems Acquisitions
CIV-G503 Systems Implementation
CIV-G601 GIS Management Issues
CIV-G602 GIS Project

IV-LS01 GIS For Surveyors
An overview of Geographic Information Systems (GIS), including the fundamentals of GIS implementations (geodetic control, planimetric mapping, cadastral systems, etc.), the role GIS plays in various industries, basic components of GIS (hardware, software, procedures, human resources, etc.), with an emphasis on cadastral GIS applications.

CIV-LS02 Business: Law, Economics and Administration
An introduction to business, law administration and economics as it applies to surveyors, including: sources of law, court systems in Canada, conditions of contract, real property law, forms of business organizations, capitalization, banking practices, loans and mortgages, security, bankruptcy, insurance, the nature of economics, macroeconomics and taxation.

CIV-R492 Plan Preparation 1
This course is a continuation of Engineering Graphics 2 CIV-C292. The student will obtain further practice in Survey Drafting by plotting hard copies from field notes, preparing hand-drawn sketches for building location and staking certificates, making sketches of proposed subdivision plans, plotting and tracing township diagrams, preparing plans required for LTO registration by statute and regulation such as special surveys, special plots, expropriation of right of way for drains, roads and condominium plans and calculating mass haul diagrams. These projects will utilize hand drawings and CAD technology.

CIV-R493 Computer Applications
This course consists of the use and programming of a hand-held computer, the HP-42S and the introduction of the use of Survey 3.0/4.0 software program, a coordinate geometry program on a personal computer workstation including plotting routines.

CIV-R494 Photogrammetry
This course consists of theory relating to, and the practical work, in the relationship of areas, angles, and distances on aerial photographs to areas, angles, and distances on the ground, calculations for flight planning for aerial photography and an introduction to photogrammetric triangulation through the use of a slotted template laydown.

CIV-R496 Theory and Use of Instruments 1
This course consists of an investigation of the principles and operations of conventional and electronic survey equipment for the determination of linear, angular and vertical measurements including azimuth and position. Standards of procedures and evaluation of data are also considered.

CIV-R498 Surveying 3
This course consists of the field methods of laying out simple and vertical curves and calculations pertaining thereto, special problems in curves, methods of stadia and construction survey procedures.

CIV-R499 Mathematics 2
This course consists of the review of the plane triangle and associated trigonometry, plane geometry, coordinate geometry, basic statistics and the introduction to differential calculus of algebraic functions of a single variable.

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CIV-R592  Route Surveys
This course consists of preliminary surveys, special curve problems, vertical curves, horizontal and vertical alignment using RTAC design criteria, earthwork calculations including mass diagram, runoff calculations and culvert design.

CIV-R594  Cartography 1
This course is a further introduction to the topic of coordinate systems in the use of the National Topographic System in Canada and will investigate the operation and effects of various map projections.

CIV-R598  Theory and Use of Instruments 2
This course consists of further investigation of the principles and operations of conventional and electronic survey equipment for the determination of linear, angular and vertical measurements including azimuth and position. Standards of procedures and equipment as well as calibration procedures and evaluation of data are also considered.

CIV-R599  Advanced Survey Computations 1
This course will examine the advanced techniques in the areas of retracement surveys, curves and right-of-way surveys with practical use of a coordinate geometry software program on a personal computer. Emphasis is on the compiling and use of clear, concise and neat field notes.

CIV-R792  Terrain Interpretation
This course involves the student in a review of elementary geology and geomorphology on the formation of landforms identifiable on aerial photographs and a study of photographs (stereo pairs) containing these landforms. From the theory, the student will be required to identify the various landforms, the method of formation of the landforms and to deduce the types of soil present in the landform, surface moisture conditions and possible subsurface moisture conditions, soil permeability and permafrost conditions.

CIV-R794  Cartography 2
This course consists of practical work in the production of a multi-colored map of a given area, the setting up of a model in the Kelsh Stereo Plotter for a designated topographic area and scale and a consideration of basic cartographic principles governing map projects of the earth.

CIV-R796  Advanced Survey Computations 2
This course will examine calculations on subdivision surveys and advanced work in computations with hand-held calculators and on a personal computer. Emphasis is on use of clear, concise, and neat field notes.

CIV-R798  Legal Survey 1
This course will introduce the student to the Canadian legal system, real property law, boundary concepts, land registration systems, the Multipurpose Cadastre, the Dominion Lands System and the statutes of Manitoba and case law as they relate to surveys with the opportunity for the students to solve practical survey problems.

CIV-R799  Control Surveys 1
This course will introduce the student to basic concepts of geometric geodesy with the relationship to the geoid. Geodetic reference systems with emphasis on Cartesian and geodetic ellipsoidal coordinate systems and their transformation, terrestrial positioning, the direct and inverse geodetic problems in three dimensions, horizontal positioning on the ellipsoid, basic concepts with respect to map projections with particular attention to the Transverse Mercator Projection and the concepts and basics of the Dominion Lands Systems of Survey.
CIV-R892 Town Planning
This course introduces students to the general theories of subdivision design and in particular to their application in Manitoba. This involves the examination of the function and hierarchy of the system of roads (arterial, major and minor collector and residential), street intersections and associated potential traffic hazards, the investigation of various elements of subdivision design including P-loops, cul-de-sacs, pedestrian access and emergency access provisions and their zoning regulations and their application. The requirement and provision of lands for PR and schools and their interrelationship and the relationship of topography to subdivision design.

CIV-R894 Introduction to GIS Concepts
This course provides the student with an overview for understanding of Geographic Information Systems (GIS), including the fundamentals of GIS implementations (geodetic control, planimetric mapping, cadastral systems), the role GIS plays in various industries, spatial data content, basic components of a GIS (hardware, software, procedures, human considerations) and concept of error and data accuracy, with the emphasis on the uses of GIS technology. Classroom lectures are supplemented with hands-on demonstration of GIS applications employing both raster and vector technologies and data.

CIV-R895 Hydrology
This course consists of a study of fluid statics, open channel flow and the theory; the collection and application of data pertinent to the design of irrigation and drainage and flood control structures.

CIV-R896 Astronomy
This course consists of an introduction to spherical trigonometry, the celestial sphere and systems of coordinates, apparent, mean and sidereal times, the use of the Star Almanac for Land Surveyors, methods of observing the sun and Polaris for azimuth and/or time, time stars and corrections to observations.

CIV-R898 Legal Survey 2
This course continues the study initiated in the previous term of the Canadian legal system, real property law, boundary concepts, land registration systems, the Multipurpose Cadastre, the Dominion Lands System and the statutes of Manitoba and case law as they relate to surveys with more opportunities for the students to solve practical survey problems.

CIV-R899 Control Surveys 2
This course will further the concepts of geometric geodesy with the relationship to the geoid. Geodetic reference systems with emphasis on Cartesian and geodetic ellipsoidal coordinate systems and their transformation, terrestrial positioning, the direct and inverse geodetic problems in three dimensions, horizontal positioning on the ellipsoid, vertical positions, basic concepts with respect to map projections with particular attention to the Transverse Mercator Projection with the further study of the Dominion Lands System of Survey.

CIV-T494 Strength of Materials 2
This course deals with basic fluid properties and their use, static pressure calculations, calculation of hydrostatic forces on plane and curved surfaces and stability analysis of retaining walls.

CIV-T495 Structural Analysis 1
This course consists of calculating combined axial and flexural stresses, calculating normal stresses for bending in two directions, calculating stresses due to eccentric loading using Mohr’s circle to determine stresses, defining loads, applying appropriate modifying factors to loads, applying deflection limitations, applying structural loads and procedures.
CIV-T592  Structural Detailing Practices
Students will continue to develop technical drawing and interpretation skills through the preparation of a set of structural design drawings and subsequent related "shop" drawings for single story, office/warehouse building project. Students will be introduced to structural detailing practices, drawing standards and terminology applicable to their technology specialty.

CIV-T594  Timber Design
This course consists of the design of the various components that make up a timber and/or plywood structure. It also deals with the design of wood-framed buildings in accordance with CAN3-086.1-M84.

CIV-T595  Structural Analysis 2
This course consists of applying determinacy test to beams and frames to establish degree of indeterminacy, analyzing indeterminate beams using Three-Moment Equation, analyzing indeterminate beams and frames using Moment Distribution, analyzing beams and frames using Approximate Methods.

CIV-T596  Reinforced Concrete Design 1
This course consists of designing simple reinforced concrete beams for flexure, shear, deflection, designing simple columns for axial load and eccentricity, designing one way slabs and designing reinforced concrete walls.

CIV-T792  Masonry Design
This course consists of reviewing the fundamental structural principles involved in the design of concrete and brick masonry components and briefly examining the related hardware and construction practices and problems.

CIV-T794  Steel Design
The design of individual steel building components such as tension members, columns, beams, base plates, bolted and welded connections based on CAN 3-S16. 1-M84, using CISC Handbook of Steel Construction, latest edition.

CIV-T795  Structural Analysis 3
This course consists of calculating deflections in beams and frames using Conjugate Beam and Virtual Work methods, constructing quantitative and qualitative influence line diagrams for moving loads on beams and frames.

CIV-T796  Reinforced Concrete Design 2
This course consists of designing reinforced concrete tee beams and doubly reinforced beams, detailing reinforcement laps, splices, development lengths, designing columns for slenderness, biaxial bending and load transmissions through floors and to foundations.

CIV-T892  Testing Materials
This course consists of demonstrating procedures used in calibrating and verifying lab testing equipment, testing commercially available and lab-fabricated structural products in accordance with the appropriate standards, introducing the concept of quality control particularly with respect to concrete and masonry and comparing the results of theoretical assessments of structural components to their demonstrated results.

CIV-T894  Thesis Project
This course consists of producing complete design calculation notes and structural drawings for a construction project, calculating the project's structural cost and producing progress reports and design diary.
CIV-T895 Structural Analysis 4
This course consists of using Moment Distribution on beams and frames to calculate the effects of support displacement, temperature differential, inclined and/or non-prismatic members, analyzing and designing simple structures using shear walls and analysis applications.

CIV-T896 Reinforced Concrete Design 3
This course consists of designing two-way floor systems and reinforced concrete foundation walls.

CIV-T898 Foundation Design
This course consists of shallow foundation design (footings), friction and end bearing pile design, retaining wall analysis and design, computation of allowable stresses for various types of soil, determination of vertical stresses beneath loaded structures and the estimation of settlement of loaded structures or soil foundations.

CIV-U493 Terrain Analysis
This course consists of an introduction to the principles of photogrammetry and basic terrain analysis and its application to Civil Engineering projects. Photogrammetry portion consists of theory and practical calculation relating the scale, angles and distances on aerial photographs, to angles and distances on the ground. Terrain analysis consists of instruction in elementary geology and geomorphology on the formation of landforms of the Canadian landscape, with identification on aerial photographs and an assessment of the soil and/or granular material of these landforms.

CIV-U495 Strength of Materials 2
This course deals with basic fluid properties and their use, static pressure calculations, calculation of hydrostatic forces on plane and curved surfaces, Mohr's Circle of Stress for two-dimensional problems.

CIV-U496 Surveying 3
This course consists of the field methods of laying out simple and vertical curves, the calculations pertaining thereto, special problems in curves, methods of stadia and construction survey procedures.

CIV-U498 Soil Mechanics 1
This course consists of basic soil types and structures, the computation of mass and volume relationships of soil/water mixtures, the computation of density-moisture relationships and their application to field control of compaction operations, determination of the Atterberg consistency limit and its application to soil identification, grain size determination by the "wet method". Classification of soils by means of visual identification, triangular charts, AASHTO Method and the Unified Method is also studied.

CIV-U593 Water Supply and Waste Disposal 1
This course introduces water piping networks examining demands on the system and response in terms of flow and pressure patterns. A review of piping materials and control of installation, design and preparation of detailed plans for construction of a water distribution system, a storm and sanitary collection system, including fundamentals of water and sewage treatment.

CIV-U595 Hydraulics
This course examines liquids in motion, including discussions on fundamental laws of incompressible fluid flow, the concepts of continuity and hydraulic energy. Rate meters are discussed, with the methods of calibrating these devices. A systematic approach to solving problems pertaining to liquids in motion, in pressurized, closed conduits and under gravity flow conditions. A fundamental understanding of open channel flow is required before proceeding with further courses in drainage structure design, culverts, storm sewers, flow control and energy dissipation devices. Both SI and USC units are used.

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CIV-U596 Roadway Design 1
This course consists of design of simple, compound, reverse and spiral curves for various speeds and sight distances, vertical curves to provide stopping sight distance and passing sight distance, superelevation for horizontal curves, applying the safety features of roadway design including surveys required for roadway design and capacity analysis.

CIV-U598 Soil Mechanics 2
The students will study grain size analysis by the Hydrometer Method and by wet and dry sieving and combine the results of these tests to determine the co-efficient of hydraulic conductivity of soils and the test method best suited to each soil type. Description of quicksand and prevention of "quickening" conditions, frost action in soils and permafrost, the prevention of frost damage, determination of load-settlement relationships will be included.

CIV-U599 Environmental Analysis
This course consists of a study of basic environmental factors, emerging environmental factors, legislation, engineering practices and how they impact on the design and construction of Civil Engineering projects.

CIV-U792 Pavement Mix Design 1
This course consists of the study of the manufacture of Portland cement and its five basic types. Students will evaluate the use of aggregates in Portland cement concrete by mixing water and additives to understand the purpose of their usage in concrete. Design of mixes, mixing, transporting, placing, compaction, finishing and curing of Portland cement concrete and inspection procedures will be included.

CIV-U793 Water Supply and Waste Disposal 2
This course continues with the topic of water piping systems, in particular with appurtenances such as pumping and storage and covers the design of waste water systems. A major project is started at the beginning of this course, culminating in a formal report upon the conclusion of course Water Supply and Waste Disposal 3 CIV-U893.

CIV-U795 Hydrology
This course is designed to give the student a practical background in the theory, collection and application of hydrological data pertinent to the design and operation of an engineering project for the control and use of water.

CIV-U796 Roadway Design 2
This course consists of preparation of cross-sections, profiles, mass diagram plans, calculations required for earthwork design, runoff estimates and culvert design, construction methods for placing and compaction of fills, culvert installation, construction equipment used, surveys required for construction, quality control and pavement thickness design.

CIV-U798 Soil Mechanics 3
This course consists of soil shear strength analysis and determination, evaluation of soil shear strength characteristics, slope stability analysis and evaluation of horizontal earth pressures.

CIV-U892 Pavement Mix Design 2
This course consists of a study of asphalt cement and the testing required to determine its suitability as a paving asphalt with evaluation of aggregates for use in asphaltic concretes, design of hot-mix asphalt paving mixes using the surface area method and the Marshall method, construction techniques, construction equipment and inspection procedures for asphalt pavements.

CIV-U893 Water Supply and Waste Disposal 3
This course involves design of land drainage systems and low-level pumping stations, assessment and maintenance of piping systems and review of the fundamentals of water and waste water treatment.
CIV-U894 Thesis Project
This course consists of completing and submitting a formal report on a topic related to Civil Engineering. The student will select a topic involving either an original design project or practical lab project.

CIV-U896 Urban Roadway Design
This course will study traffic volume projections, capacity analysis, intersection signalization and the geometrics of urban intersection design.

CIV-U898 Stabilization
This course consists of soil stabilization fundamentals, lime stabilization, soil cement, bituminous stabilization and the use of geo-textiles as a soil stabilization technique.

CIV-W300 Co-op Work Placement
CIV-W600 Co-op Work Placement

CNC-0111 Computer Numerical Control
This course teaches safe methods of operating computer numerical-controlled machines for the production of metal parts in a manufacturing environment. This will involve set up, operation, qualifying the program and part and basic programming.

ELE-C421 Electronic Circuits
Matrix methods in circuit analysis, power transformers, equivalent circuits and regulation, balanced three phase systems, analysis of three phase systems, transformers in three phase systems.

ELE-C423 Digital Design
This course is a continuation of the Introductory Logic Circuits ELE-C303 course. The course addresses a number of areas of digital design including: static awareness, different logic families and their interfacing, operation of specific function circuits and the operation memory devices. Approximately half the instruction time is spent doing laboratory exercises. The laboratory exercises are used to verify integrated circuit operation and test the operation of small digital designs synthesized from previous circuits covered.

ELE-C424 Computer Systems 1
The computer systems course is comprised of three terms spread over the second year of the Computer Engineering Technology program. Computer Systems 1 is the first part in the three-part series. In this part, the student will study the operation of a DOS-based microcomputer system. Emphasis is placed on the student becoming proficient in taking care of a microcomputer system from configuring the hardware to installing the software. The student will also learn what to consider when selecting hardware and software to perform a specified task.

ELE-C425 Microprocessors 1 “C” Programming
This course is composed of two main components: a) Assembly language programming and b) introduction to the hardware design of a microcomputer. The software skills developed in a) are used to have a minimal system microcomputer perform simple serial I/O.

ELE-C427 Electronic Devices
This course consists of topics relating to gain, coupling, frequency considerations of transistor signal and power stages. Also investigated are transistor circuit stages in the IC operational amplifier. Time allotted is five hours per week in laboratory sessions, lectures and problem solving.

ELE-C521 Circuits and Transmission Lines
This course examines transient states in R-L, R-C and R-L-C circuits, undergoing both step and AC excitation. Analysis involves using the “assumed solution” and the more rigorous Laplace approach. The course concludes by examining how wavefronts move along transmission lines.
ELE-C524  Computer Systems 2
This is the second part of a three-term course in computer systems. The first six weeks deal with
computer topics that will aid the student in taking care of a microcomputer station. These topics
involve a detailed look at the hardware components of a computer, corruption of files and how to fix
them, installation of expansion cards and the conflicts that must be overcome, computer viruses and
file and disk compression. The last four weeks deal with two operating systems: Windows and OS/2.

ELE-C525  Microprocessors 2
This course is a continuation of the course Microprocessors 1 ELE-C425. Parallel I/O is introduced
with the programming continuing to be in Assembly language. Control applications, interrupts, elec-
trical characteristics, timing and some common interfacing requirements are covered.

ELE-C527  Electronic Devices
This course is a continuation of Electronic Devices ELE-C427. Five hours per week of lectures and
labs are devoted to the IC operational amplifier in comparator, negative feedback and active filter cir-
cuits. Some other ICs related in function are also studied.

ELE-C528  Computer Peripherals
The course deals with peripheral devices used in computer systems with emphasis on floppy and hard
disk drives, printers, and displays. The operation of an XT system is examined at the BIOS level and
how it interacts with its peripheral devices. Two hours per week are used for lecture time and four
hours for lab work.

ELE-C529  Linear Control Systems
This course introduces the fundamentals of closed-loop control (linear systems). Feedback system ter-
minology, components, and block diagram algebra are discussed in the first half of the course. The
second half of the course analyzes first and second order systems (speed control and position control)
and applies control system principles to robotic systems.

ELE-C621  Data Communications
The course deals with the methods used to transmit digital information between systems using both
analog and digital links. The course covers the use of modems for conversion of digital data using
AM, FSK and PSK for their transmission on analog lines, data communications hardware and data
communication protocols. Also covered is digital transmission using PCM and TDM. Three hours
per week are used for lecture time and two hours for lab work.

ELE-C623  Computer Networks
This course covers both the hardware and software aspects of networks. Novell is the network operat-
ing system that is used since it is currently the market leader. The student will learn how to install
and configure a network card, how to wire up the network for token ring, Ethernet and ARCnet and
how to use a LAN cable meter to troubleshoot a network. The student will learn how to convert a
microcomputer into a workstation and then into a file server. The student will spend several weeks as
the system administrator in charge of the student's own file server.

ELE-C624  Computer Systems 3
This course deals strictly with the UNIX operating system. The student will learn to install UNIX on
a microcomputer. The student will learn the syntax and commands used in the implementation of
UNIX. Other UNIX topics covered are the mail utility, the VI editor, child/parent processes, disk stor-
age, addition of a terminal, rights assignments, security, printing and communications between users.
The student will spend three weeks as a system administrator of the student's computer, learning the
tasks involved in maintaining a UNIX system.

C - 67
ELE-C625 Microprocessors 3
This course is a continuation of the course Microprocessors 2 ELE-C625. The topics of digital-to-
analog conversion, analog-to-digital conversion, DMA and large system design considerations are
studied. During the second half of the course, the students are introduced to a 16/32-bit microproces-
sor, embedded system design and the “C” programming language.

ELE-C626 Manufacturing Techniques
The Manufacturing Techniques course is an introductory course in the design of electronic equip-
ment. The course will provide the student with basic skills in soldering and desoldering of compo-
nents used on double-sided printed circuit boards with plated-thru holes and the soldering and de-
soldering of surface mounted components. This course introduces the student to wire-wrapping
techniques. The course introduces printed circuit artwork design and layout.

ELE-C629 Troubleshooting Microprocessor Systems
A practical, hands-on lab course. Principles of hardware troubleshooting, troubleshooting tools,
methodologies, faults and their symptoms, built-in tests, external testers. Students use a variety of
tools including the Fluke Micro System Troubleshooter, logic analyzer, signature analyzer and the
oscilloscope to troubleshoot faults, both in this course and in their projects. A total of 40 hours of
instructional time with about 80 percent devoted to lab work.

ELE-E100 Introduction to Personal Computers
The course provides students with a brief hands-on introduction to personal computer hardware, the
most often used DOS commands and selected application software. Basic keyboard skills are im-
proved by drills using “Typing Tutor IV.” This is followed by an introduction to the WordPerfect
word processing program.

ELE-E101 Electric Circuits
Basic concepts of electricity and electric circuits. Ohm’s Law, power, energy and efficiency,
Kirchhoff’s voltage and current laws, voltage and current divider rules. Problem-solving methods for
simple DC circuits. Analysis of more complex DC electric circuits using network theorems, network
conversions, branch, mesh and nodal methods.

ELE-E102 Electrical Instruments
Basic Electrical Instruments is an applied Ohm’s Law laboratory course for the Electric Circuits ELE-
E101 course. It includes instruction in human electrical safety and how to calibrate, measure and
communicate instrument readings. Basic instrument design, circuit calculations, as well as instrument
characteristics are also covered. The instruments discussed include the VOM, DMM, VTVM, DC
Bridge and potentiometer.

ELE-E104 Personal Computers 1
This course will provide students with a brief introduction to personal computer hardware and the
most often used DOS commands with the intent of facilitating use of personal computer-based pro-
grams. A Typing Tutor program, to improve basic keyboard skills, will be followed by an introduction
to the WordPerfect word processing program. The final weeks will be spent using the ORCAD drafting
program to produce a simple circuit diagram.

ELE-E106 Drafting
This is a first course in drafting, which assumes the student has little or no knowledge of drafting
techniques. Simple skills such as line weight, use of the T-square and triangles are taught. As the
course progresses, emphasis shifts to drawing organization and layout, with particular attention paid
to electrical/electronic device symbols, schematic diagrams and logic drawings.
ELE-E201 Electric Circuits

ELE-E202 Electrical Instruments
This course is a continuation of Basic Electrical Instruments ELE-E102 and is the lab course for Electric Circuits ELE-E201. It concentrates on the calibration and proper use of instruments for measurement in AC circuits. The instruments discussed are the function generator, VOM, VTVM, DMM and the oscilloscope. The course consists mainly of practical lab work.

ELE-E204 Personal Computers 2
This introductory programming course in the BASIC language emphasizes a structured approach to problem solving and programming. The focus of this approach is to develop an algorithm, translate it into a program, check the program for accuracy and debug the program as necessary. Three hours per week of formal class time are spent in the PC lab or a classroom working on one of the series of tutorial/assignments which are keyed closely to the text and supplemented with material more relevant to applications in the Electronics, Electrical, Computer and Instrumentation Engineering Technology areas.

ELE-E207 Basic Electronics
This course is a first course in solid state electronics. Upon the completion of this course the student will be able to analyze, design and build simple diode rectifier circuits, Zener diode circuits and transistor biasing circuits.

ELE-E301 Electric Circuits

ELE-E303 Introductory Logic Circuits
The purpose of this course is to familiarize the student with popular digital integrated circuit devices and to develop the student to the point where they can describe their operation and apply them in digital circuits. The course consists of approximately 25 percent lecture time in which specific blocks of material are dealt with in preparation for a follow-up laboratory exercise.

ELE-E305 Introductory Microprocessors
This course starts by providing a general hardware description of microprocessor systems at the block diagram level. It then continues with an introduction to microprocessor programming at the Assembly language level, including use of the TASM Cross Assembler. Assembly language programming is implemented on systems which use the Z-80 microprocessor. This course lays the foundation for the more advanced microprocessor training contained in the second year of all Electrical, Electronic, Instrumentation and Computer Engineering Technology programs.

ELE-E307 Basic Electronics
This course is a continuation of Term 2 Basic Electronics introduction to the AC analysis and design of junction transistor, field effect and MOS transistor circuits. It concentrates on analysis techniques to predict the terminal behavior of small signal amplifiers. It is primarily a lecture and lab-related course and consists of six hours per week.
ELE-E401 Electrical Circuits
Matrix methods in circuit analysis, power transformers, equivalent circuits and regulation, balanced three-phase systems, analysis of three-phase systems, transformers in three-phase systems, unbalanced three-phase systems.

ELE-E402 Electrical Measurements
This course consists of four hours of lectures and labs per week. Topics covered include the application of the wattmeter, AC test set, Hall-effect watt transducer, phase angle and power factor meter, phase sequence indicator, watthour meter, demand meter, potential and current transformers and phase-shifting transformers, in the measurement of active power, reactive power, energy and demand and in single and three-phase circuits.

ELE-E405 Programmable Logic Controllers
Reviews the architecture of a basic single board computer along with programming concepts in Assembly language and BASIC for the purpose of counting, time delay, sequencing and the handling of interrupt inputs. Topics: computer hours, CPU registers and control lines, memory types, organization and decoding, parallel part registers, timer registers, stack operation and interrupt operation.

ELE-E406 Electrical Practices and Design
The Electrical Practices and Design course is intended to familiarize the student with the design and practices of electrical power systems within the regulations of the Canadian Standard Association, Canadian Electrical Code, Part 1. Topics covered include: 1) insulating materials, 2) American wire gauge, 3) load calculations, 4) wiring methods, 5) grounding, 6) protection, 7) services.

ELE-E407 Instrumentation Electronics
A linear integrated circuits course which introduces the operational amplifier and describes the rudimentary circuits used for the acquisition and conditioning of analog signals. Topics: op-amp characteristics, single-ended and differential input amplifiers, integrators, differentiators, analog switches and voltage regulators.

ELE-E408 Electrical Machines
This course introduces the student to electrical DC machines. Students are required to circuit and operate DC motors and generators as well as understand basic machine design. Dynamo construction details such as windings, commutator, magnetic circuits and brushes are covered. Operating characteristics of the various machines (i.e., shunt series and compound) are examined in detail.

ELE-E411 Communication Circuits
A study of the various electrical circuits and their applications in communication systems. First and higher order transfer functions, Bode plots, frequency and phase response measurements. Resonant circuits, parallel-series conversions, reactance curves, applications. RF coupling circuits: impedance and inductive coupling. RF matching circuits: tapped tuned circuits, L, n- and T-type circuits.

ELE-E412 Electronic Measurements
Electronic Measurements is a course intended to provide practical application of instruments, interpretation of results, methods of analysis and documentation of data from a wide range of the more advanced instruments. Emphasis is placed on the proper use of instruments for measuring and matching levels in systems from audio to microwave. Included are wave, distortion and spectrum analyzers, delayed sweep and storage oscilloscopes, AC voltmeters and power meters. The course consists of two hours of lecture and three hours of lab per week.
ELE-E415 Microprocessors
This is an application-oriented course based on the Low Power Schottky TTL and CMOS families, the Z-80 CPU system architecture and Z-80 peripheral devices. The course is a continuation of the Introductory Logic Circuits ELE-E303 and Introductory Microprocessors ELE-E305 courses of Term 3 and is intended as a preparatory course for the digital courses in Terms 5 and 6. Approximately 50 percent of the class time is spent in the lab, verifying operation, design and testing of sub-systems.

ELE-E416 Manufacturing Techniques
The Manufacturing Techniques course is an introductory course in the design of electronic equipment. The course will provide the student with basic skills in soldering and desoldering of components used on double-sided printed circuit boards with plated-thru holes and the soldering and desoldering of surface mounted components. This course introduces the student to wire-wrap techniques. The course introduces printed circuit artwork design and layout.

ELE-E417 Electronic Devices
This course is a continuation of Term 3 Basic Electronics for students in the Electronic Engineering Technology discipline. The course consists of six hours of instruction per week, split between labs and lectures. The course discusses the frequency response and design of circuits using basic active devices, such as transistors and FETs. The course also discusses feedback theory in preamplifiers as well as the characteristics and applications of the operational amplifier.

ELE-E501 Electrical Circuits
This course begins by investigating how unbalanced loads affect three phase systems and includes an introduction to the principle of symmetrical components. The course examines transient states in R-L, R-C and R-L-C circuits, undergoing both step and AC excitation. Analysis involves using the "assumed solution" and the more rigorous Laplace approach.

ELE-E502 Electrical Measurements
This course consists of five hours of lectures and labs per week. Topics covered include the construction, operation, application and testing of single phase, three phase and autotransformers. From test data transformer polarity is established, equivalent circuits are obtained, efficiency and voltage regulation calculations are performed and harmonics are analyzed.

ELE-E505 Data Acquisition and Communication
Describes operations, specifications and applications of most commonly used DAC, ADC and serial data communication standards. Topics: DAC operation and specifications, ADC, successive approximation and dual slope, ADC MUX operation, input protection, aliasing filter and sampling rate, serial data communication standards, RS-232, RS-422 and RS-485.

ELE-E506 Electrical Practices and Design
The Electrical Practices and Design course is intended to familiarize the student with the design and practices of electrical power systems within the regulations of the Canadian Standard Association, Canadian Electrical Code, Part 1. Topics include 1) motor circuits, 2) electrical distribution, 3) auxiliary systems, 4) hazardous locations. The lab sessions will be used to familiarize the students with programmable controllers.

ELE-E507 Power Electronics
Introduces thyristor devices for the purpose of describing the operation and application of AC power controllers. Topics: thyristor characteristics, control circuits and protective circuits, AC power controllers, both phase-controlled and zero-crossing controlled, RFI, comparaters and timers.
ELE-E508  Electrical Machines
This course is a continuation of the fourth term course Electrical Machines ELE-E408. The students are taught theory and practical labs with respect to AC generators and motors. Special attention is given to AC dynamo construction and operation, including parallel operation of alternators.

ELE-E511  High Frequency Circuits
High frequency circuits is a course on the theory and practical aspects of electronic communication fundamentals. Three hours per week are allotted for lecture and two hours for lab work.

ELE-E512  Circuits and Fields
Electronic Circuits and Fields provides a strong background to the technologist on the fundamentals of transmission lines and waveguides. Course time each week is divided between three hours of lecture and two hours of lab work.

ELE-E515  Microprocessors
This is an application-oriented course based on the Z-80 peripheral devices. Concepts and methods of controlling input and output devices are introduced. The student will write, test and debug software to interface Z-80 microprocessor systems to the P10, CTC, keyboard, ADC/DAC devices and the real-time clock.

ELE-E517  Electronic Devices
This course is a continuation of Term 4 Electronic Devices ELE-E417. The course consists of five hours of instruction per week, two hours lecture and three hours lab. The course investigates oscillator circuits and regulated power supplies. A wide assortment of integrated devices and applications are studied and applied in the lab.

ELE-E519  Linear Control Systems
This course introduces the fundamentals of closed-loop control (linear systems). Feedback system terminology, components and block diagram algebra are discussed in the first half of the course. The second half of the course analyzes first and second-order systems (speed control and position control) and applies control system principles to robotic systems.

ELE-E602  Electrical Measurements
This course consists of five hours of lectures and labs per week and is designed to familiarize the student with the transmission of electric power over a system. Topics covered include establishing the circuit constants of an overhead transmission line, assembling power system components into a system for analysis, establishing power transmission limits and stability and reading instruments for system monitoring.

ELE-E606  Switchgear and Protection
This course is used to inform the students about the types of equipment used by the electric utilities for power transmission and fault protection. Tours are made of existing installations and some laboratory demonstrations are employed to show the latest practices and possible operating conditions. Power system analysis is used to point out the various elements that are significant in the operation of the various systems. Symmetrical components and protective relaying are two of the topics included in course material.

ELE-E607  Power Electronics
Introduces three phase rectifiers, converters, and variable frequency inverters for the purpose of describing the various types of DC and AC motor drives. Topics: three phase bridge rectifier, both six pulse and twelve pulse, converters, both full control and half control, three phase converter, both PWM output and six-step output, DC drives, one quadrant, two quadrant and four quadrant, AC drives, variable voltage, variable frequency slip power recovery, eddy current and cycloconverter.
ELE-E608 Electrical Machines
This course is a continuation of the Term 5 course Electrical Machines ELE-E508. The students are taught theory and practical labs with respect to AC motors: three phase, single phase and synchronous. Dynamo efficiency is also covered as a unified topic in electromechanical conversion.

ELE-E609 Linear Control Systems
Introduces general concepts of closed loop control for electromechanical systems with motor control for illustration. Systems are approximately described a) either first order or second order and b) performance rated on the basis of accuracy and transient response. Factors affecting accuracy and transient response are highlighted and simple control strategy(s) developed to permit high accuracy and desired transient response.

ELE-E611 Data Communications
This course focuses on advanced electronic communication techniques with an emphasis on modern digital communications systems. Three hours per week are used for lectures and two hours for lab work.

ELE-E615 Digital Control Systems
This is a project-oriented course based on the Z-80 CPU and peripheral devices. Each project group must submit a proposal requesting department approval of labor hours and material costs that may be incurred during the development and construction of a microprocessor-controlled project. The proposed project must be unique with respect to any currently approved projects, must include a peripheral requesting a vectored interrupt and must utilize some form of feedback. The instructor will act as monitor and counsellor for each group (maximum two students per group) and will conduct weekly progress meetings with each group to help keep the projects on schedule. A formal technical report, written in the Report Writing course, must be submitted on completion of the project.

ELE-E616 Manufacturing Techniques
The Manufacturing Techniques course is an introductory course in the design of electronic equipment. The student is introduced to a computerized printed circuit board design and layout program. A project is completed to develop a higher skill level in printed circuit artwork design and layout than was introduced in the fourth term.

ELE-E617 Electronic Devices
This course is a continuation of Term 5 Electronic Devices ELE-E517. The course consists of five hours of instruction per week, two hours lecture and three hours lab. The course investigates power devices, opto-electronic and trigger devices, theory and applications.

ELE-E618 Low Frequency Circuits
The Low Frequency Circuits course is a linear electronics course describing circuits and systems commonly used in industry for control, in computer interfacing, in audio and in other low frequency analog systems. Included in the topics are transducer equalization, instrumentation amplifiers, non-linear circuits and power amplifiers.

ELE-I432 Process Practices and Devices
ELE-I435 Programmable Logic Controllers
Reviews the architecture of a basic single board computer along with programming concepts in Assembly language and BASIC for the purpose of counting, time delay, sequencing and the handling of interrupt inputs. Topics: computer hours, CPU registers and control lines, memory types, organization and decoding, parallel part registers, timer registers, stack operation and interrupt operation.
ELE-1436 Electrical Practices
This course gives a broad overview of modern electrical power technology. It covers the basic principles of transformers and rotating machines, transmission and distribution systems associated with this field. Toward this end, the course matter has been divided into five distinct parts: 1) fundamentals, 2) electrical materials, 3) alternating current circuits, 4) transformers, 5) rotating machinery.

ELE-1437 Instrumentation Electronics
Linear integrated circuits course which introduces the operational amplifier and describes the rudimentary circuits used for the acquisition and conditioning of analog signals. Topics: op-amp characteristics, single ended and differential/input amplifiers, integrators, differentiators, analog switches and voltage regulators.

ELE-1438 Final Control Elements
Throttling devices, valves, regulators, variable speed pumping, valve family characteristics, liquid sizing, valve trim, installed versus inherent trim, trim selection for application, trim problems.

ELE-1439 Basic Process Control
Introduction to closed loop control, basic pneumatic elements, force balance and motion balance mechanisms, on-off, proportional plus bias, integral, derivative control mechanisms, commissioning control loops, basic training operations.

ELE-1532 Process Measurements
Force, motion transducers, applications, circuits, transmitter electronics, two wire, four wire, sensors types, scalers, current driver, loop power, drive limitation, practical measurement fundamentals, tubing fittings, bending, taping into lines, impulse lines, freeze protection, seal fluids, process noise, chemical seals, remote seals, purging, chemical compatibility, vacuum measurement, mechanical gauges, manometers, thermal conductivity, ionization, level measurement, direct, inferential techniques, hydrostatic tank gauging.

ELE-1535 Data Acquisition and Communication
Describes operations, specifications and applications of most commonly used DAC, ADC and serial data communication standards. Topics: DAC operation and specifications, ADC, successive approximation and dual slope, ADC MUX operation, input protection, aliasing filter and sampling rate, serial data communication standards: RS-232, RS-422 and RS-485.

ELE-1536 Electrical Practices
The Electrical Practices course is intended to familiarize the student with the current practices that are used in electrical power systems within the regulations of the Canadian Standards Association. The Instrumentation Engineering Technology students are taught how to circuit and control electrical machines. The theory and operation of AC and DC motors, on a practical level, is covered so that the student can understand why and how these devices are used.

ELE-1537 Power Electronics
Introduces thyristor devices for the purpose of describing the operation and application of AC power controllers. Topics: thyristor characteristics and control circuits and protective circuits, AC power controllers, both phase controlled and zero-crossing controlled, RFI, comparators and timers.

ELE-1538 Fluid Mechanics
Properties of fluids, conversions, fluid statics, hydrostatic head to derive level. Density, interface, Archimedes' principle, applications for level and density, Bernoulli's principle and significance to pressure and velocity, equation of continuity, Reynolds' number, laminar flow, turbulent flow, frictional calculations, head flow measurement, types, characteristics, design, size calculations, flanges, tapping locations, impulse lines, manifolds, correct operation of manifolds, area flow meter wiers, flumes, rotometers, applications, considerations, turbine flow meters, magnetic flowmeters, vortex flow meters, positive displacement meters, metering pumps.

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ELE-I539 Linear Process Control
Tuning control loops via Seat of Pants, Ziegler-Nichols, Cohen & Coon Pessen, Aikman using ultimate cycling and process reaction curve techniques, importance of F(n), ratio control, cascade control, windup protection techniques, design criteria, start-up procedures, selective control loops, high, mid, low types, applications, control only if necessary systems (regulatory), feed forward, design of feed forward level loop, design of heat exchanger loop, scaling, definition, rules of scaling, application, design examples, hardware mechanization.

ELE-I632 Process Measurements
Temperature scales, filled systems, bimetal devices, chemical indicators, RTDs, wire and film types, semi-conductors, thermistor characteristics, thermocouples, thermocouple laws, reading and calibrating temperature instruments, pyrometry, optical and radiation theory, humidity, concept, psychrometric charts calculating RH, sensors, density and specific gravity concepts, velocity sensors, vibration, concept, combustible gas, combustion triangle, methods of sensing combustibles, nuclear radiation, nature, characteristics, ionization, proportional, G-M tube, semi-conductor, scintillation detector.

ELE-I637 Power Electronics
Introduces three phase rectifiers, converters and variable frequency inverters for the purpose of describing the various types of DC and AC motor drives. Topics: three phase bridge rectifier – both six pulse and twelve pulse, converters – both full control and half control, three phase converter – both PWM output and six step output, DC drives – one quadrant, two quadrant and four quadrant, AC drives – variable voltage, variable frequency slip power recovery, eddy current and cycloconverter.

ELE-I638 Industrial Control Application
Part 1: Engineering Design: symbology, ISA S5.1, S5.3, S5.4, SAMA functional logic (RC22-11) NEMA (Electrical) process unit, instrument project control. Part 2: Programmable Controllers: history, description, introduction to relay ladder logic, rules of design, construction of a PC, input device construction, output device construction, image table and I/O address, scan time, programming functions, sensors used with PCs, master control relays, relays for safety. Part 3: Unit Operations: combustion loops, boiler controls, pulp and paper, sewage treatment, portable water treatment, mineral processing, petrochemical plants.

ELE-I639 Computer Process Control
History of computer control log and alarm, supervisory control of set point, direct digital control, distributed computer control, batch vs continuous processes, batch computer control basics, digital control of continuous processes, communication, command and control concepts, input protection, fusing, over voltage, intrinsic safety, hard filters, types, sample rate, aliasing, Shannon sampling theorem, noise pick-up, A/D conversion, control software, automatic drift compensation, analog signal filtering, scaling to engineering units, sensor compensation and linearization, validity test for variables, deviation algorithms. linear, squared, notchgain, positional control algorithms, velocity control algorithms, alarm functions, verification of output, control back-up, selective control redundancy.

ELE-K531 Introductory Chemical Instrumentation
Atoms, molecules, periodic table, ions, ionic bonding, covalent bonding, valency, oxidation numbers, chemical equations, balancing, stoichiometry, solutions, solvent effects, concentrations, interaction between electromagnetic radiation and matter, particle properties of light, photoelectric effects, refractive index, Beer's law.
ELE-K631 Chemical Instrumentation
Ultraviolet and visible spectrophotometry, radiation sources, monochromaters, sample containers, optics, radiation detectors, electronics, nature of absorption, quantitative analysis, qualitative analysis, photometric titration, atomic absorption, radiation source, interference from impurities, accuracy of analysis, infrared analysis, molecular vibration, qualitative analysis, care of cells, fluorescence, nuclear magnetic resonance, theory and application, electrochemistry theory, half cells, pH meters, electrode conductivity theory, application, gas chromatography principles, components, operation, interpretation, sample and column preparation.

ELE-M102 Mathematics
Pre—calculus “review”: linear, quadratic, logarithmic, exponential and simultaneous (linear) equations. Some factoring, graphing, formula manipulation, functional notation, complex numbers. Right triangle, trigonometry, radians and problem solving. Emphasis is on doing and in the process of orderly developments. Fifty-six hours in class, plus testing.

ELE-M202 Calculus
Differential Calculus: Slope, straight line, parabolas, circle, translation of axes, trapezoid rule for areas. Derivatives of: polynomials, powers, products, quotients: implicit expressions, trigonometry and inverse trigonometry, logarithms and exponentials. Tangents, normals, motion, relative rates, maximum/minimum, small changes and “Newton’s Roots.” Fifty-four hours in class, plus testing.

ELE-M302 Calculus
Integral Calculus: Work with trigonometric identities: reciprocal, Pythagorean, angle sum, double and half-angle relations. Trigonometric equations, integrate algebraic, log, exponential, trigonometric quantities. Use substitution and “by part” techniques. Find areas, average and RMS values. Use integrals with current, charge and voltage. Approximately 46 hours plus testing.

ELE-M402 Calculus
Review of calculus techniques. Use calculus to derive Fourier series for pictured and/or listed periodic functions. Use partial fraction and Laplace transforms to solve differential equations. Establish from series RLC circuits differential equations and use Laplace transforms to solve for and examine transients (step-inputs only). Approximately 28 hours plus formal testing.

ELE-M412 Calculus
Review of calculus techniques. Use derivatives to develop, use and manipulate Maclaurin, Taylor series. Use calculus to derive Fourier series for pictured and/or listed periodic functions. Use partial fraction and Laplace transforms to solve differential equations. Establish from series RLC circuits differential equations and use Laplace transforms to solve for and examine transients, step, ramp, exponential and sine inputs. Approximately 48 hours, plus formal testing.

ELE-M422 Calculus
Review of calculus techniques. Use derivatives to develop, use and manipulate Maclaurin, Taylor series. Use calculus to derive Fourier series for pictured and/or listed periodic functions. Use partial fraction and Laplace transforms to solve differential equations. Establish from series RLC circuits differential equations and use Laplace transforms to solve for and examine transients, step, ramp, exponential and sine inputs. Approximately 48 hours, plus formal testing.
ELE-M432 Calculus
Review of calculus techniques. Use calculus to derive Fourier series for pictured and/or listed periodic functions. Employ symmetry to reduce derivational work in Fourier series. Use partial fraction and Laplace transforms to solve differential equations. Establish from series RLC circuits differential equations and use Laplace transforms to solve for and examine transients (step inputs only). Approximately 28 hours plus formal testing.

ELE-M442 Calculus
Review of calculus techniques. Use derivatives to develop, use and manipulate Maclaurin, Taylor series. Use calculus to derive Fourier series for pictured and/or listed periodic functions. Employ symmetry to reduce derivational work in Fourier series. Solve first degree linear differential equations classically. Use partial fraction and Laplace transforms to solve differential equations and use Laplace transforms to solve for and examine transients, step, ramp, exponential and sine inputs. Approximately 48 hours, plus formal testing.

ELE-M502 Calculus
Applied problems in mathematics and electronics through hands-on computer software. MathCAD is used in conjunction with developing and graphing Fourier series. TUTSIM is used to demonstrate the block-model approach to simulating continuous dynamic systems. Approximately 24 hours in computer labs, all in projects.

ELE-M512 Calculus
Applied problems in mathematics and electronics through hands-on computer software. MathCAD is used in conjunction with developing and graphing Fourier series. TUTSIM is used to demonstrate the block-model approach to simulating continuous dynamic systems. Approximately 24 hours in computer labs, all in projects.

ELE-M513 Statistics
In three hours per week for eleven weeks, this course introduces concepts and techniques of dealing with measurement imprecision, of acquiring, analyzing, presenting and of interpreting technical data. Specifically, it introduces and gives some level of practice in histograms, frequency polygons, mean, mode, variance, standard deviation, probability and common probability distributions, statistical inference and hypothesis testing, normal, student-t and other common tests, linear regression.

ELE-M522 Calculus
Applied problems in mathematics and electronics through hands-on computer software. MathCAD is used in conjunction with developing and graphing Fourier series. TUTSIM is used to demonstrate the block-model approach to simulating continuous dynamic systems. Approximately 24 hours in computer labs, all in projects.

ELE-M532 Calculus

ELE-M542 Calculus
Applied problems in mathematics and electronics through hands-on computer software. MathCAD is used in conjunction with developing and graphing Fourier series. TUTSIM is used to demonstrate the block-model approach to simulating continuous dynamic systems. Approximately 24 hours in computer labs, all in projects.

ELE-M543 Statistics and Quality Control
Data presentation, centrality and dispersion, probability, sampling, prediction of random events and confidence intervals, tests of significance, variance, regression and correlation.

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ELE-P109 Physics
An introductory course in engineering mechanics and electricity with emphasis on solving problems and dealing with such topics as the nature of physics, physical quantities, systems of measurements, translational motion in one and two dimensions, Newton's laws of motion, free-body diagrams, work, power and energy, discreteness of electric charge, electrostatic force and field, Coulomb's law and Gauss' law, electrostatic potential and potential energy, capacitance and electron ballistics. A total of 50 hours of instructional time is divided into 30 hours of lectures and 20 hours of problem labs, labs and demonstrations.

ELE-P209 Physics
This course deals with engineering mechanics and electromagnetism with emphasis on solving problems and dealing with such topics as rotational kinematics and dynamics of rigid bodies, conservation of angular momentum, work power and energy in rotation, motion of simple, damped and driven oscillating mechanical systems and their electrical analogues, resonance and Q value, magnetic fields due to different current configurations, force on moving charge and current-carrying wire in a magnetic field, electromagnetic induction, self and mutual inductance and magnetic properties of materials. A total of 40 hours of instructional time split evenly between labs and lectures.

ELE-P309 Physics
The course deals with the transfer of energy by waves, mechanical as well as electromagnetic. The topics covered include definition of elastic and EM waves, longitudinal and transverse waves, speed of waves in different media, reflection, refraction, total internal reflection and fibre optics, diffraction, interference, standing waves and various modes of resonance. Doppler effect and its applications, intensity and loudness of sound, S.I.L, radiant and luminous intensity, response of the eye, illumination and luminous intensity, sources of light and photoelectric effect. A total of 40 hours of instructional time split evenly between labs and lectures.

ELE-R100 Report Writing
Streamlining the students' approach to writing: planning and writing technical business letters and memorandums, planning and writing short reports and medium length investigation reports, writing at a computer terminal.

ELE-R200 Report Writing
Presenting information orally at technical briefings, meetings and conferences, preparing job search documentation, attending employment interviews, planning and writing equipment descriptions and operating instructions.

ELE-R600 Report Writing
Review of report writing, oral presentations and job search techniques, planning, writing and presenting a formal technical report.

ELE-R610 Report Writing
Review of report writing, oral presentations and job search techniques, planning, writing and presenting a formal technical report.

ELE-R620 Report Writing
Review of report writing, oral presentations and job search techniques, planning, writing and presenting a formal technical report.

ELE-R630 Report Writing
Review of report writing, oral presentations and job search techniques, planning, writing and presenting a formal technical report.
ELE-R640  Report Writing
A review of oral presentation techniques, informal reports, small group dynamics and job search techniques. Writing a proposal, technical report and oral presentation of the technical report.

ELE-T441  Communication Circuits
Resonant circuits, coupling circuits, AM transmission, matching circuits, AM reception.

ELE-T443  Digital Communications
Character codes, data rates, RS-232, DTE, DCE, null modem, sync/asynchronous and data terminals. Connection standards: 232, 422, 485 pin functions, electrical characteristics rates, applications, etc. Telephony: specs, DDD, leased lines, conditioning, noise and short haul modem. Error control: detection, correction, parity, checksum, CRC and Hamming. Digital transmission: PCM, CODECS, T1 carriers, TDM, SONET and ISDN.

ELE-T444  Computer Systems

ELE-T445  C Language Programming
C programming language on the PC: arrays, addresses, pointers, strings and structures, file operations, bit manipulation and miscellaneous C capabilities, managing multile projects, ASSEMBLER and C.

ELE-T447  Instrumentation Electronics

ELE-T541  High Frequency Circuits

ELE-T543  Digital Communications
Channel capacity and maximum data rates. Data compression: advantages and techniques. Data link protocols: character oriented, bit oriented, SDLC and HDLC. The PC serial port and UART programming and testing. Low speed modems: FSK, Bell 103 and Hayes command set. Medium speed modems/systems: PSK, QPSK, 212A and FAX. Serial communication software: Procomm, y-modem, Kermit, BBSs and up/downloading. PC parallel port programming, testing, communication and printer sharing techniques.

ELE-T545  Digital Electronics
Static awareness. Logic families and PLD devices. Digital circuits: programmable counters, shift registers, ALU, mux, de-mux and memory device. 80 x 86 architecture and instruction types. 80 x 86 hardware specs: pins, clocks, bus buffering and machine states. Bus interfacing and memory mapping. I/O interfacing: address decoding, parallel and serial I/O devices and interrupts.

ELE-T546  Manufacturing Technology

ELE-T547  Introduction to PLC
Principles, h/w components, number systems, codes and logic fundamentals. PLC programming basics, wiring diagrams and ladder diagrams. Timer and counter programming. Computer s/w installation, analog I/O, data, math and sequence instructions.
ELE-T624 Computer Systems 3
This course deals strictly with the UNIX operating system. The student will learn to install UNIX on a microcomputer. The student will then learn the syntax and commands used in the implementation of UNIX. Other UNIX topics covered are the mail utility, the VI editor, child/parent processes, disk storage, addition of a terminal, rights assignments, security, printing and communications between users. The student will spend three weeks as system administrator of the student's own computer, learning the tasks involved in maintaining a UNIX system.

ELE-T641 Circuits and Fields

ELE-T643 Computer Networks

ELE-T645 Technical Project
Design, develop and report on a communications-related project.

ELE-T647 Industrial Communications Applications
Analog to digital conversion: ideal, ADC types, input ranges, output coding and specs. Analog input module: muxed ADC, data acquisition system, signal wire, protection, filtering, muxes and amps. Sample rate vs amplitude resolution errors versus aliasing error. Serial data communication review. MODBUS: protocol, functions, on Gould Micro 84. IEEE-488: description I/F cards, commands and programming. UNITELWAY network: installation, services and principles. Data acquisition using power measurement equipment: hardware/software, SCADA.

F01-B007 Physical Education

F01-C003 Activity for Life
The course is designed to acquaint the nurse-in-training with fitness and activity as they apply to the nurse and the patient. Students will develop a personal fitness program. They will also participate in one or two chosen activities during the term. Written and practical tests will be used in evaluating the students' understanding and ability.

F01-D001 Activity for Life 1
Activities such as archery, badminton, curling, fitness, golf, swimming and tennis will be taught in various combinations with both practical and theoretical considerations. In addition, students will learn the psychological and physiological reasons for exercise for themselves and young children. Each student will practice body mechanics as well as participate in fitness testing from which a personal fitness goal may be developed.

H03-L101 Anatomical Structure and Function
The course entails the basic knowledge of human anatomy and physiology beginning with the cell, its structure, function and division. The primary tissues are examined as to structure and location leading to an in-depth study of the body systems. In the study of systems, gross and microanatomical structures and the basic physiology and pathology are examined. The following systems are included: skeletal, muscular, cardiovascular, digestive, excretory, endocrine, respiratory and reproductive.
H03-L107 Introductory Chemistry
The first half of this course has a strong emphasis on organic chemistry. Individuals learn the major organic compounds with their chemical reactions. One of the many challenges of this course will be to write and name molecular structures. The second half of the course emphasizes selected topics in basic biochemistry: carbohydrates, proteins, lipids and nucleic acids. Some principles of inorganic and physical chemistry applicable to the disciplines of medical laboratory technology are also introduced.

H03-L109 Microscopy
This course provides knowledge of lecture, function and application of Brightfield microscope. Included is the operation and application of specialized microscopes.

H03-L113 Anatomy and Physiology 1
This course is designed to provide accurate information about the structure and function of the human body. Emphasis is on the material required for entry into a more advanced course, completion of professional certification examination and application of information in a practical work-related environment. Two major themes dominate this course: 1) the compliment of normal structure and function and 2) maintenance of homeostasis. In Term 1, the student will be introduced to basic human anatomical terminology, the concepts of levels of organization and cellular structure and function, followed by a detailed study of tissues, the integumentary system and the musculoskeletal system.

H03-L116 General Knowledge and Safety
In General Knowledge, the student will learn the principles and practice of the safe techniques used to deal with clinical specimens. The student will also learn safe and correct procedures in the operation and maintenance of routine laboratory equipment common to all areas of medical laboratory technology. Laboratory safety practices are stressed.

H03-L117 Spectrophotometry
Spectrophotometry is designed to introduce individuals to the nature of light and some basic electronics. Theory is put into practice as individuals learn to work with spectrophotometers in the performance of clinical laboratory determinations. This is a fundamental course with direct applications to the major disciplines of medical laboratory technology.

H03-L119 Applied Laboratory Mathematics
The application of mathematics to the solving of practical problems in the medical laboratories is stressed. The preparation of reagent solutions, the dilution of fluid specimens, the quantitative analysis and the reporting of laboratory data is included. A brief introduction to statistical methods relative to the reporting and the interpretation of laboratory data is given.

H03-L120 Computers
This course is designed to provide the student with an introduction to computer awareness. Each student shall have her/his own IBM-PC on which to learn basic word processing, database and the use of spreadsheets.

H03-L121 Introductory Chemistry
The first half of this course has a strong emphasis on organic chemistry. Individuals learn the major organic compounds with their chemical reactions. One of the many challenges of this course will be to write and name molecular structures. The second half of the course emphasizes selected topics in basic biochemistry: carbohydrates, proteins, lipids and nucleic acids. Some principles of inorganic and physical chemistry applicable to the disciplines of medical laboratory technology are also introduced.

H03-L122 Occupational Safety
The course covers occupational safety in a medical (clinical) laboratory. It encompasses chemical safety including generic and WHMIS training, handling of biohazards including sterilization and disinfection, physical hazards including protective equipment and clothing and safe personal practices in all aspects of laboratory work.
H03-L123 Instrumentation
The course encompasses basic laboratory equipment emphasizing the principle use, safety factors and maintenance. The following topics are covered: laboratory glassware, Brightfield microscope, balances, thermal equipment, centrifuges and spectrophotometers.

H03-L201 Anatomical Structure and Function
This course is a continuation of Anatomical Structure and Function H03-L101.

H03-L202 Clinical Microbiology
Principles and practice of isolation, identification and antimicrobial susceptibility testing of common human pathogenic and normal flora microorganisms (with the emphasis on bacteria) from various body sites are taught. Basic immunological/serological principles in relation to microbiological diseases are included. Consideration is given to the preparations of stains, media and reagents. Laboratory safety in all aspects of the course is stressed. The student is responsible for the material presented in Term 1 which applied to clinical microbiology.

H03-L203 Clinical Chemistry
Clinical chemistry is the study of physiological and biochemical changes that occur in the body in disease states. The main topics covered are routine urinalysis, renal function, products of protein and carbohydrate metabolism, liver function tests, electrolytes, acid-base physiology, enzymes, lipids, introduction to quality control and automation. The theoretical section outlines metabolism and catabolism, identifies the blood and urine components under test and correlates abnormal values with various disease conditions.

H03-L204 Hematology
Hematology deals with the study of blood and its components. This course covers the origin, development and identification of blood and bone marrow cells. It deals with blood dyscrasias such as in anemias and leukemias. It also covers hemostasis of the blood including current theories of coagulation, components of hemostasis and diagnostic testing for specific abnormalities.

H03-L205 Histotechnology
An introduction to the principles and practices of preparing tissues for histological examination including fixation, decalcification, processing, blocking, microtomy and an in-depth look at the chemistry of tissue demonstration techniques using dyes and metal impregnations.

H03-L213 Anatomy and Physiology 2
The themes of complementarity of normal structure and function and homeostasis are still emphasized. The student continues the study of various body systems that was begun during Term 1. Topics to be examined include the respiratory system, circulatory system, cardiovascular system, digestive system, urinary system, nervous system, endocrine system and male and female reproductive systems. Upon completion of Term 2, the student will have knowledge of normal human anatomy and basic physiology of the body systems. Prerequisite: Anatomy and Physiology 1 H03-L113.

H03-L220 Computers
This course is designed to provide the student with an introduction to computer awareness. Each student shall have her/his own IBM-PC on which to learn basic word processing, database and the use of spreadsheets.

H03-L222 Clinical Microbiology Laboratory 202
This course is the laboratory training for Clinical Microbiology H03-L202.

H03-L223 Clinical Chemistry Laboratory 203
This course is the laboratory training for Clinical Chemistry H03-L203.
H03-L224 Hematology Laboratory 204
This course is the laboratory training for Hematology H03-L204.

H03-L225 Histotechnology Laboratory 205
This course is the laboratory training for Histotechnology H03-L205.

H03-L227 Transfusion Science
The topics in this course include a review of basic immunology, inheritance and synthesis of blood group systems and the activity of associated antibodies, principles, practices and quality assurance measures utilized in the safe preparation of blood and blood products. Applicable national standards and regulations will be cited.

H03-L228 Transfusion Science Laboratory 227
This course is the laboratory training for Transfusion Science H03-L227.

H03-L230 Immunology
A basic course in Immunology which is a prerequisite for Transfusion Science H03-L227 and applies to all discipline areas. Mechanism of the immune response, physiology and function of the T and B lymphocytes and the interaction for an immune response are described. The structure and function of the immunoglobulins and the principles of antigen–antibody detection are covered. Reference is also made to the mechanisms of tissue damage as a result of an immune response, immune deficiencies and hypersensitivity reactions.

H03-L302 Clinical Microbiology
This is a continuation of Clinical Microbiology H03-L202.

H03-L303 Clinical Chemistry
This is a continuation of Clinical Chemistry H03-L303.

H03-L304 Hematology
This is a continuation of Hematology H03-L204.

H03-L305 Histotechnology
This is a continuation of Histotechnology H03-L205.

H03-L306 Transfusion Science
This is a continuation of Transfusion Science H03-L206.

H03-L313 Anatomy and Physiology 3
Human Anatomy and Physiology Term 3 focuses upon the pathology and pathophysiology of the body systems. The students will apply their knowledge of normal structure and function of the human body to the study of the disease process. A variety of diseases from each of the body systems will be discussed. Emphasis will be placed upon the disease process itself, as well as the known causes, symptoms and possible risk factors. The specialists involved in, as well as the methods of diagnosis and treatment of the disease, will also be considered. Prerequisite: Anatomy and Physiology 2 H03-L213.

H03-L322 Clinical Microbiology Laboratory 302
This course is laboratory training for Clinical Microbiology H03-L302.

H03-L323 Clinical Chemistry Laboratory 303
This course is laboratory training for Clinical Chemistry H03-L303.

H03-L324 Hematology Laboratory 304
This course is laboratory training for Hematology H03-L304.
H03-L325 Histotechnology Laboratory 305
This course is laboratory training for Histotechnology H03-L305.

H03-L326 Transfusion Science Laboratory 306
This course is laboratory training for Transfusion Science H03-L306.

H04-A101 Anatomy and Radiographic Positioning
Description of skeletal anatomy of upper and lower extremities, pelvis, vertebral column, thorax and
skull. Description of anatomy of lungs and abdomen. Radiographic positioning of upper and lower
extremities, pelvis, vertebral column, sternum, ribs, skull, sinuses, facial bones, chest and abdomen.

H04-A105 Electrocardiography
Discussion of the electrophysiology of the heart and its relationship to ECG, the use of the ECG in-
strument, ECG artifacts.

H04-A106 Radiologic Science
This course is designed to provide the essential theoretical background required of an x-ray assistant
to function effectively and safely in an x-ray department. Basic principles of physics, description of
x-ray equipment, basics of radiation protection, fundamentals of image recording and introduction to
patient care would be covered. Several laboratory exercises are included to assist in the understanding
of the concepts.

H04-A107 Anatomy and Physiology
This course emphasizes the functional aspects of human anatomy and physiology BMETs must
understand. The course is an introduction to the function of the body in health and the effects of
common diseases or defects. The course also gives attention to body processes that are measured,
controlled or aided in diagnosis or treatment. Concepts in anatomy and physiology are reinforced
by laboratory exercises that provide the basis for later studies of medical equipment.

H04-A201 Patient Care and Procedures
This course provides an introduction to medical and nursing terminology and description and under-
standing of common procedures used in patient diagnosis, treatment and care. The course will pro-
vide the student with an understanding of the purposes and methods used and how she or he should
assist others in caring for the patient. Patient and staff safety and aseptic technique will be stressed as
well as respect for and comfort of the patient.

H04-A202 Medical Biophysics and Biochemistry
This course provides an introduction to modes of interaction of physical and chemical phenomena
with body processes and the effects which are produced. Building on the course on physiology, it re-
views the physical and chemical processes of the body. The interaction of energy: heat, light, electro-
magnetic fields, with the body is examined. The course explains the physical and chemical basis of
medical care and treatment methods.

H04-A203 Hazards and Safety Regulations and Standards
This course describes the types of hazards found in BMET work and the methods used to achieve
safety. Building on the course of physiology, patient care and applied biophysics, it encompasses the
principles of biological hazards and their containment, aseptic procedures, electric shock and its pre-
vention, fire, radiation, lasers, etc. It emphasizes the knowledge that the BMET should have, to be
able to provide informed advice and for her or his own protection.
H04-A204 Sensors, Measurement and Treatments
This course provides an overview of measurement principles and measurements that are used in medical diagnosis, care and treatment. Statistical analysis of data is introduced for understanding measurement accuracy and precision and for use in statistical process control. The principles of physical and chemical measurements and treatments are presented and how these methods are used in medicine. The principles are described with emphasis on actual equipment and the factors important in their application.

H04-A301 Operation and Care of Biomedical Equipment – A
This course, in three parts, provides theoretical and practical understanding of how to operate, check and service common medical equipment, from x-ray to pacemakers, from care of rechargeable batteries to complex chemical instrumentation. It applies the information of the previous course on sensors.

H04-A302 BMET Practice
This course is made up of the following modules pertinent to the practice of biomedical engineering technology: BMET roles and relationships, identifying and solving problems, essential interpersonal skills, structure and function of organization, performance assurance of medical equipment and the BMET department.

H04-A401 Operation and Care of Biomedical Equipment – B
This portion of the course discusses the principles of operation, methods of operation, checking and service procedures of medical equipment. Equipment is discussed in detail. The learning process is a combination of theory and hands-on experience. Typical topics are battery characteristics and care, electromagnetic interference and its prevention, different types of equipment: respirators, pacemakers, monitors, stimulators for pain control, prosthetic and orthotic apparatus, etc. In this section of the course, the operating principles and important characteristics of the different kinds of equipment are emphasized.

H04-A402 Operation and Care of Biomedical Equipment – C
This portion of the course covers specific current equipment in detail. Examples of modern equipment will be examined, used and serviced. The learning process will be primarily hands-on with explanatory lectures. Instruction will be provided by the manufacturer’s representative or other qualified individuals. The objective of this portion of the course is to provide the student with exposure to state-of-the-art equipment and to allow them to become proficient in its use and care.

H04-A501 Practicum
This course will consist of supervised field experience in collaborating hospitals. The student will work in the hospital setting under overall supervision of an instructor, but under the day-to-day direction of the responsible hospital staff. If time permits, the student will be exposed to more than one hospital. The student will perform actual work as a BMET to gain initial experience in an actual clinical setting.

H04-A502 Review and Preparation for BMET Certification Exam
This course will review the total course material to prepare the qualified student for writing the International Certification Commission examination for BMET certification. Since some material will have been studied a long time previous, this course will provide a review of all of the course material. It is expected that the students will also do their own detailed review of topics to supplement the course material.

H04-M100 Anatomy
This course provides an overview of gross, cellular and cross sectional anatomy of the human body, paying attention especially to the abdomen, pelvis, neck, brain and spinal cord. This knowledge provides the basic understanding of the relationships between anatomical structures in various planes for the study of MRI/spectroscopy. The course begins with a biochemistry and physiology review. Pathology of the areas mentioned is included.
H04-M102  Magnetic Resonance Imaging Part 1
This course provides a general overview of magnetic resonance imaging and examines the advantages and limitations of this modality. It includes an introduction to the fundamental physics and instrumentation of MRI. There is an overview of the bioeffects and potential hazards of both static and gradient magnetic fields, as well as radiofrequency radiation. The first part of the course deals with a review of physics and chemistry.

H04-M103  Magnetic Resonance Imaging Part 2
This course provides a detailed examination of magnetic resonance imaging methodologies, including discussion of pulse sequences, image contrast and relaxation mechanisms. Data acquisition techniques, parameters and trade-offs will be examined. In addition, artifacts and their compensations, contrast agents, as well as quality assurance will be discussed. There is an introduction to the concepts of MR spectroscopy and the procedure for spectral analysis.

H04-M104  Advanced Magnetic Resonance Imaging
Topics of this course include rapid scan techniques, MR fluoroscopy, angiography, functional MRI, MR microscopy, diffusion-weighted MRI and spectroscopic imaging. Through a combination of lectures, seminars and a term paper, the learner will be exposed to the latest advancement in the field, gaining the necessary skills to master the ever-changing and constantly improving MR technology.

H04-M105  Workplace Skills
This course consists of skills that are important in the workplace. These skills are communications, computer and applied patient care. The professional communications will cover oral and written skills. The computer skills will cover word processing, spreadsheets and database entry. The patient care will apply to those skills required in the Magnetic Resonance Imaging department.

H04-M201  Magnetic Resonance Technical Applications
The student will spend three months at the Institute of Biodiagnostics National Research Centre applying the theory that was learned at Red River Community College. The student will use magnetic resonance imaging and research equipment. In addition to the application of theory, advanced lectures in magnetic imaging/spectroscopy will be presented.

H04-P101  Resident's Radiation Physics
A complete study of x-ray equipment including circuitry, x-ray beam controls, accessory equipment and advanced equipment is covered. Included is the program in Radiation Physics which reviews production, measurement and interaction of radiation. Construction and phosphors: intensifying screens and fluoroscopic screens, physical characteristics of x-ray film and film processing, photographic characteristics of x-ray film, geometry of the radiographic image, stereoscopy, magnification radiography, subtraction technique and coping radiographs.

H04-T114  Radiation Protection for Therapy
This course will introduce the student to the basic concepts of radiation protection. The student will gain an appreciation of the philosophy underlying protection practices and regulations.

H04-T115  Patient Care and Interpersonal Skills for Therapy
Clinical techniques and communication are an integral part of the daily care provided to the patient. The student will gain the knowledge and skills required to provide safe, competent and empathetic care to the patients and their families. Included in this course are patient assessment and teaching skills.

H04-T116  Radiation Therapy
The student will gain knowledge required to relate anatomy, physiology, pathology and radiobiology to the treatment of patients with malignant diseases. Although various treatment modalities will be discussed, emphasis is placed on the applications of radiation both for cure and palliation.
H04-T117 Treatment Planning
The student will be provided with the information required to correctly plan radiation treatments for patients, calculate treatment parameters and evaluate plans for accuracy and feasibility. Knowledge acquired from anatomy, physics and apparatus and patient care will be applied to combine the technical aspects of the equipment with the specific needs of the individual patient.

H04-T118 Radiation Physics and Apparatus
The student will gain knowledge of the types, functions and structures of radiation therapy units. This knowledge will be correlated with an understanding of the physics of radiation production and interaction, to enable safe, effective and efficient work patterns as a radiation therapist. Related concepts in radiation protection and radiobiology will also be discussed to help the student realize how radiation could affect themselves, their patients and other therapists.

H04-T119 Apparatus and Imaging for Radiotherapy
The student will be introduced to the physical concepts and principles behind medical image formation, become familiar with the structure and function of imaging equipment and be able to apply these imaging concepts to the individual patients. Hands-on experience with the types of equipment required to produce radiographic images will be provided.

H04-T120 Human Anatomy and Physiology

H04-X102 Radiographic Positioning
Radiographic Positioning will involve review of anatomical structures and topographical landmarks. This introduction phase will incorporate interrelationship with staff and patients of all ages, importance of ethical code, patient’s history, handling of septic cases and fractures and organization of material necessary for radiographic procedures. Detailed description of radiographic procedure will be given to upper and lower extremities and thorax. Practicum will be performed as 1) laboratory exercise and 2) mastery testing.

H04-X105 Apparatus and Accessory Equipment
This course will familiarize the student with some of the basic equipment required and used in radiography. The student will learn through theory and practice how to operate such equipment safely and competently.

H04-X107 Patient Care and Interpersonal Skills

H04-X108 Radiation Protection
This course will introduce the student to the basic concepts of radiation protection. The student will gain an appreciation of the philosophy underlying protection practices and regulations.

H04-X109 Principles of Radiographic Exposure and Imaging
H04-X110 Introduction to Health Physics
This course is designed to introduce students and practitioners in the field of health and applied sciences to the concepts of physics. An overview of atomic structure as it relates to the origin of ionizing radiation will be presented. Scientific methods of data collection and presentation will be introduced. Basic principles of electricity and magnetism with their application in everyday living and health fields will be discussed. Production and nature of x-rays will be discussed in detail.

H04-X216 Radiographic Positioning
Review of anatomical structures and topographical landmarks of the skull. Detailed description of radiographic positioning of skull: a) cranial, b) facial. This is the most complicated section of this course and requires intensive detailing. Special procedures will be outlined and described. As in Term 1, practicum will be performed as: 1) laboratory exercise: skeletal radiography, 2) mastery testing by student roleplay and peer analysis.

H04-X217 Apparatus and Accessory Equipment
This course will be a follow-up to Term 1. It will include specialized equipment and accessories used. Topics covered will be fluoroscopy, special x-ray tubes, computed tomography, automatic film changers, injector ultrasound, digital radiography and nuclear magnetic resonance. Also covered will be quality assurance of equipment.

H04-X218 Principles of Radiographic Exposure and Imaging

H04-X220 Human Anatomy and Physiology
This course is designed as a sequel to Human Anatomy and Physiology H11-N120. A working knowledge of introductory anatomy and physiology is assumed. The details of anatomy and physiology are organized around unifying concepts such as interrelationships of body organ systems, homeostasis. Presentation of the material reflects hierarchical levels of complexity that contribute to the students' understanding of the body as a whole. Laboratory exercises are essential in aiding the student to apply theoretical concepts of anatomy and physiology. Clinical application is stressed throughout the course. This course is taken by students enrolled in several health-related disciplines. Pre-requisite: Human Anatomy and Physiology H11-N120.

H04-X221 Radiation Physics
This course is designed to meet the needs of students and practitioners working with x-rays and gamma rays. After a review of atomic structure, the nature and characteristics of electromagnetic radiation will be described. Mechanisms of photon interaction with matter and their significance in radiology and other radiation fields will be discussed. Finally principles of detection and measurement of radiation will be presented.

H04-X222 Patient Care and Pathology
This course is subdivided into two sections. Patient care section deals with the following topics: legal and ethical issues in health care, care of an unconscious patient, introduction to intravenous and oxygen therapy, emergency drugs and contrast agents used in radiology. Pathology section deals with the diseases of the respiratory, digestive, urinary, cardiovascular, nervous and reproductive systems.
H04-X223 Radiobiology and Protection
This course provides the radiobiological principles underlying the rationale for radiation protection programs. The student will develop an understanding of the effects of radiation so that minimum exposure to patients, personnel and the general public can be realized. Starting with radiation interactions and the effects at the physical and chemical level, the course proceeds to the biological level, from cellular responses through tissue and organ responses, to total body responses. Both somatic and genetic effects are described, distinguishing between acute and delayed effects and a special unit covers the effects of in utero irradiation. The course concludes with an assessment of risks to all human populations and coverage of advanced radiation protection practices.

H06-C104 Personal Development
This course assists students to develop skills and attitudes applicable to college life and personal growth. It stresses the importance of physical activity for a healthy lifestyle.

H06-C122 Integration Seminar 1
This seminar provides the student with information on what to expect and how to conduct themselves in the children's centres of Practicum 1. Using various group process strategies, the student integrates the theory which they have learned to date with their own experiences in a children's centre.

H06-C123 Practicum 1
This practicum provides the student with the opportunity to visit a variety of children's centres in Winnipeg, in order to become familiar with the many types of child care available. The student integrates theory and practice by applying the principles of child development and guidance of children to actual procedures according to the philosophy of the centres visited.

H06-C221 Integration Seminar 2
This seminar assists students to integrate the theory which they have learned to date with their own experiences in a preschool centre. Various group process strategies such as roleplays, presentations, simulations and group discussions are used to encourage critical thinking, analysis and interaction.

H06-C224 Practicum 2
During this practicum the student spends one-half day per week at the same preschool children's centre. The student integrates theory and practical by applying the principles of child development, guidance of children and activity planning to actual procedures according to the philosophy of the centre.

H06-C320 Practicum 3
This practicum is a three-week block placement at one preschool children's centre. The student is expected to assume more responsibility for integrating theory and practice by applying the principles of child development, guidance of children and activity planning in the development of competent child care skills.

H06-C322 Integration Seminar 3
This seminar assists students to integrate the theory which they have learned to date with their own experiences in a preschool centre. Various group process strategies such as roleplays, simulations and discussions are used to encourage critical thinking, analysis and class interaction.

H06-C433 Practicum 4
This practicum provides three weeks of daily involvement with the same group of children at an assigned preschool centre. The student integrates theory and practice by applying the principles of child development, planning for activities and facilitating play to actual interactions with children.

H06-C434 Integration Seminar 4
This seminar assists students to integrate theory learned to date with their own practicum experience. The effectiveness of guidance and behavior-management techniques, activity planning, facilitation of play and communication skills are compared and evaluated using various group process strategies.
H06-C531 Integration Seminar 5
This seminar assists students to integrate theory learned to date with their own practicum experience. A major focus of the seminar is the unique needs of infants, school-age and special needs children and how to plan for these needs within a children's centre.

H06-C533 Practicum 5
During this practicum, the student spends one and one-half days per week, for a period of 10 weeks, at two different types of children's centres. The student selects the centres from a choice of infant, school-age or preschool daycare with special-needs children. The student integrates theory and practice by applying the principles of child development, guidance of children, planning for activities and facilitating play to actual procedures according to the type of centre and its philosophy.

H06-C631 Integration Seminar 6
This seminar assists students to synthesize theory learned to date with their final practicum experience. The effectiveness of guidance and behavior-management techniques, activity planning, facilitation of play and communication skills are compared and evaluated using various group process strategies. In addition, professional behaviors, communication techniques for interactions with parents and colleagues and self-evaluation of child care competencies are focused on.

H06-C634 Practicum 6
This final practicum provides four weeks of daily involvement at a children's centre selected according to the student's needs and interests. The student prepares for graduation by integrating theory and practice by applying the principles of child development, guidance of children, activity planning, parent interactions and professionalism to their final practicum experience.

H06-D106 Writing Skills 1
This course begins with a thorough review of basic grammar: subjects and verbs, phrases and clauses, coordination and subordination, sentence types: sentence, fragment and run on, subject-verb agreement, verb tenses, shifts in number, person and tense, pronoun reference. Sentence writing is gradually introduced and is taught in conjunction with the above topics.

H06-D107 Speaking Skills 1
This course is a practical program which aims to develop the speaking skills needed by child care workers. The student will learn how to participate in a discussion, how to listen and how to present materials and ideas orally.

H06-D108 Reading and Study Skills 1
This course is designed to improve reading comprehension along with developing study, test writing, note taking and critical thinking skills.

H06-D109 Reading and Study Skills 1
This course is designed to improve reading rate and comprehension as well as develop study, test-writing, note-taking, listening and critical thinking skills.

H06-D111 Orientation to Practicum
This course prepares the student to participate in structured practicum experiences in the next year of the program. Students spend time working in children's centres.

H06-D206 Writing Skills 2
This course continues the review of basic grammar begun in Term 1: comma, colon, semi-colon, apostrophe, capitalization. Paragraph writing is introduced and is taught in conjunction with the above topics.

H06-D208 Reading and Study Skills 2
This course is a continuation of Reading and Study Skills H06-D108.
H06-D306 Writing Skills 3
This course concludes the review of basic grammar begun in Term 1 (modification, parallel structure) and the paragraph writing begun in Term 2. It also deals with proofreading and the avoidance of certain errors in writing.

H06-0A34 Foster Development of the Preschool Child
This competency focuses on the development of children from ages four to six years. It stresses the new and unique developmental changes as well as the skills they continue to practice.

H06-0A36 Analyze Theories of Development
This competency focuses on the relationship between research, theory and practice in child development. Emphasis is placed on the analysis of contemporary theories and research and how these may be applied to child care service.

H06-0B31 Respect Children’s Culture
This competency focuses on the importance of culture as part of a child’s identity. It stresses the need for child care workers to respect and recognize each child’s culture in all aspects of the children’s centre.

H06-0B32 Report Suspected Cases of Abuse
This competency focuses on the physical and behavioral indicators of physical, sexual and emotional abuse of children as well as child neglect. It stresses the need for objective documentation and the legal responsibility of child care workers to report abuse.

H06-0B33 Support the Abused Child
This competency focuses on the dynamics that contribute to child abuse. It stresses the skills needed to support the child and the family in coping with the physical and psychological trauma of abuse.

H06-0B34 Support Children’s Special Needs
This competency focuses on an introduction to working with children with special needs. Emphasis is placed on the importance of specialized knowledge, skills and attitudes requisite for this area. It stresses the child care worker’s role to encourage an “inclusive” attitude and environment.

H06-0C31 Use Basic Writing Skills
This competency focuses on sharpening the student’s basic writing skills. It stresses the importance of developing and maintaining these skills in all areas of the student’s work.

H06-0C32 Write Observation Reports
This competency focuses on observing and recording children’s behavior and activities. Emphasis is on the student learning to write clear, concise reports, summaries and analysis, differentiating between objective and subjective modes and writing effective dialogue and action descriptions.

H06-0C33 Interpersonal Skills and Self-Understanding
Given a basic model of communication with which to work, students improve their interpersonal communication skills, learn to know themselves and their patterns of behavior more fully and work closely with a supportive group to discover their own personal resources.

H06-0C34 Use Job-Related Writing Skills
This competency focuses on effective on-the-job writing skills. It stresses the importance of written communication with staff members, centre boards, parents, potential employers, the media and with the child care community.

H06-0C35 Analyze Personal Behavior
This advanced competency is an analysis of personal behavior. Working with a supportive group, students learn ways to incorporate increased self-awareness and interpersonal skills into daily life.
H06-0D31 Provide Nurturing Care
This competency looks at the importance of nurturing young children. It focuses on how the child care worker can appropriately nurture children in a children's centre.

H06-0D32 Act as a Role Model
This competency identifies the fact that children model their behavior after the behavior of adults in their environment. It stresses the importance of acting as an appropriate role model for children.

H06-0D33 Communicate with Children
This competency focuses on the importance of positive communication skills for child care workers. It stresses the use of positive direction speaking with young children.

H06-0D34 Provide Guidance and Discipline
This competency focuses on direct and indirect guidance techniques for use in a children's centre. Methods child care workers can use to teach young children acceptable ways of controlling their own feelings and actions are stressed.

H06-0D35 Guide Routines and Transitions
This competency focuses on the skills necessary to guide children in the routines and transitions common to most children's centres.

H06-0D37 Foster Social Interaction and Growth
This competency focuses on the importance of guiding social interaction and growth of children in the children's centre. It stresses the use of problem-solving techniques.

H06-0D38 Guide a Variety of Children's Behavior
This competency identifies strategies a child care worker could use to guide positive and/or negative behavior of young children. The process of developing long-term guidance goals is recognized.

H06-0D39 Apply Behavior Management Approaches
This competency focuses on the importance of establishing long-term team approaches to guiding children's behavior. It stresses individualizing behavior management approaches.

H06-0D41 Evaluate Personal Interaction with Children
This competency focuses on the culmination of requisite skills for appropriate interaction with children. It stresses the importance of the child care worker's analysis of the competence and quality of their interactions with children.

H06-0E32 Respond to Emergencies
This competency focuses on emergency procedures for a children's centre. It stresses the importance of the child care worker's role in the planning and carrying out of emergency procedures.

H06-0F31 Follow Health Regulations
This competency focuses on regulations and procedures that promote children's health. It is based on the standards and requirements as set out by the Manitoba child day care licensing manual.

H06-0F32 Identify Childhood Diseases and Illness
This competency focuses on the identification and treatment procedures of common childhood diseases and illnesses. It stresses the child care worker's role in providing care to mildly ill children.

H06-0F35 Consider Children's Dietary Needs
This competency focuses on the specific dietary needs of children in a children's centre. It stresses the importance of knowledge and skills in promoting prescribed menus for children with specific dietary needs.
H06-0G31 Identify Activity Areas and their Components
This competency introduces the student to activity areas commonly found both inside and outside of a children's centre. It also focuses on the components of the activity areas.

H06-0G34 Design an Outdoor Playspace
This competency focuses on the fundamentals of playground design. Emphasis is placed on safety, equipment selection and arrangements of space as related to the developmental needs of children.

H06-0G35 Provide Activities for Infants
This competency focuses on adapting and planning activities that would be developmentally appropriate when working specifically with infants.

H06-0G36 Provide Activities for School-age Children
This competency focuses on adapting and planning activities that would be developmentally appropriate when working specifically with school-age children aged six to twelve years.

H06-0H34 Adapt a Program Philosophy
This competency focuses on program philosophy as the critical determinant of the development process for children's programs. It stresses the child care worker's assessment of the balance between their person child care philosophy and adaptability to program philosophy.

H06-0H35 Develop a Daily Schedule
This competency focuses on the importance of the structure of a child's day in a children's centre. Emphasis is placed on techniques for daily scheduling which compliment the developmental needs of young children.

H06-0J31 Guide Play Indoors and Outdoors
This competency focuses on the value of both indoor and outdoor play for children. It also provides an overview of the child care worker's role in children's play.

H06-0J32 Facilitate Play
This competency takes a closer look at the role of the child care worker in facilitating children's play and the importance of integrating play into all aspects of the child's day.

H06-0J33 Analyze Play
This competency focuses on the theoretical aspects of play. It stresses the importance of observing children's play and the role of play in the child's development.

H06-0K31 Set Out Steps in Planning a Curriculum
This competency focuses on the importance of planning curriculum for children. It stresses the importance of philosophy, play and the interests and needs of children as the basis for this planning.

H06-0K32 Set Goals and Objectives
This competency focuses on how to write general goals and specific objectives when planning activities for children.

H06-0K33 Plan Activities
This competency focuses on how to plan activities to be implemented with children. It reviews the expectations required on the activity planning form and provides students with actual hands-on experience in writing an activity plan.

H06-0K34 Develop a Weekly Plan
This competency focuses on the process of organizing resources, materials and curriculum activities for children based on weekly main ideas. Emphasis is placed on the thematic approach to weekly planning and on incorporating children's needs and interests.
H06-0K35 Develop a Long-Range Plan
This competency focuses on developing a cumulative long-range plan for a children's centre. Emphasis is placed on building continuity and interrelating main ideas or topics over an extended period of time.

H06-0L35 Provide Drama Activities
This competency looks at how drama and “play pretending” are natural activities for children. It stresses the need for the child care worker to provide a wide variety of props and drama-related activities.

H06-0L36 Provide Science-Related Activities
This competency focuses on the importance of providing a variety of science and nature activities for children. It stresses the need to base these activities on appropriate understandable concepts that children can experience hands-on.

H06-0L39 Provide Movement Activities
This competency focuses on the need and desire of children for movement. It stresses the importance of a child care worker understanding this need and providing movement activities that foster children's development.

H06-0M31 Use Materials and Equipment
This competency focuses on using materials and equipment to accompany curriculum activities. It deals with constructing equipment from materials which are readily available and lend themselves to creative uses.

H06-0M32 Utilize Resources
This competency focuses on the utilizing of resources for curriculum areas in the children's centre. It stresses the compiling, examining, storing and managing of various resources for the children's centre.

H06-0N31 Relate to Individual Family Situations
This competency provides an overview of family theory and focuses on the many facets of family life. Emphasis is placed on the child care worker's role in relating to and supporting individual families in the children's centre.

H06-0N34 Promote Parent Involvement
This competency focuses on the collaborative partnership between parents and the children's centre. Emphasis is placed on exploring a variety of methods for parent involvement.

H06-0N35 Communicate with Parents
This competency focuses on basic skills required to initiate and maintain comfortable parent-centre partnerships. It stresses a variety of effective approaches for parent communications.

H06-0N36 Support the Family Unit
This competency focuses on the child care worker's role in support of the family unit. Emphasis is placed on the formulation of appropriate methods of supporting families in special circumstances.

H06-0P31 Network with Support Agencies
This competency focuses on the interrelatedness between the children's centre and the community. It stresses the importance of utilizing strategies which provide support to children and families.

H06-0Q33 Identify Operational Structure of the Centre
This competency focuses on the operational structure of a children's centre. It examines the roles that government, centre boards and staff members play in the operation of a children's centre.

H06-0Q36 Identify Current Professional Issues
This competency focuses on current professional issues in child care. It examines the ethics, practices and implications of various current issues as they relate to child care workers.
H06-1A31 Explain Continuum of Human Development
This competency provides an overview of the ongoing process of human development from conception to death. Emphasis is placed on the child’s developmental task and needs as part of a complex, life-long process.

H06-1A32 Foster Development of the Infant
This competency involves a study of the basic processes of prenatal and infant development. Emphasis is placed on the important role of prenatal development and the physical, cognitive, social and emotional factors which influence the development of the infant.

H06-1A33 Foster Development of the Toddler
This competency focuses on the development of children from ages one to three years. It emphasizes the developmental process and the rapid growth in physical, social, emotional and intellectual development.

H06-1A35 Foster Development of the Schoolage Child
This competency focuses on the development of children from ages six to twelve. Emphasis is placed on the developmental processes and challenges of middle childhood, as well as the expanding range of factors which influence children during this stage of the developmental continuum.

H06-1B35 Support Children in Stressful Situations
This competency focuses on supporting the needs of individual children in stressful situations. Emphasis is placed on approaches child care workers may use to assist the child in a variety of specific life circumstances which are stressful.

H06-1B36 Advocate for Children
This competency focuses on the importance of meeting the needs of children by maintaining the rights of children. It is stressed that the child care worker’s first commitment is to the child. An introduction to child advocacy strategies are explored.

H06-1D36 Guide Children’s Expression of Emotion
This competency focuses on the importance of guiding children in the development of appropriate emotional expression. It recognizes age differences in the way children define and express emotions.

H06-1E31 Prevent Accidents
This competency focuses on accident prevention in a children’s centre. It stresses the knowledge, attitudes and behavior which can reduce the potential for accidents.

H06-1F33 Administer Medications
This competency focuses on the various procedures for administering prescribed medications to children in a children’s centre. It stresses the importance of safety, accuracy and centre procedures in the administration of medications.

H06-1F34 Implement a Nutritious Food Program
This competency focuses on the nutritional needs of children. It stresses the importance of menu planning and the preparation and serving of snacks and meals to preschool children.

H06-1F36 Respond to Physical and Medical Needs
This competency focuses on the identification and management of the physical and medical needs of children in a children’s centre.

H06-1G32 Select Equipment and Play Materials
This competency identifies necessary indoor and outdoor equipment and play materials and the criteria for the selection of such equipment and play materials. The suitability of hand-made play materials is also analyzed.

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H06-1G33 Design a Floor Plan for a Children's Centre
This competency focuses on arranging indoor play spaces for a children's centre. Emphasis is placed on managing the physical environment to meet the needs of children and adults.

H06-1H31 Explain the Program Development Process
This competency introduces the process of developing a children's program. It stresses the distinct, yet common, components of program design and the significance of a philosophy as the basis of all program models for child care services.

H06-1H32 Assess Program as Related to Children's Needs
This competency focuses on different program models that meet the needs of children. Emphasis is placed on the context of a variety of auspicious, theoretical and philosophical perspectives which directly influence the design of a children's program.

H06-1H33 Assess Factors that Influence Programs
This competency focuses on factors which influence children's programs. These factors may determine program design, implementation and quality.

H06-1H36 Design Program Evaluation Procedures
This competency focuses on an introduction to evaluation as a critical component of the program process. It stresses the importance of general evaluation methods and considerations for the development of informal, on-going evaluation tools.

H06-1J34 Plan for Play
This competency closely examines the role of the child care worker in children's play. It focuses on the child care worker’s ability to provide structured and spontaneous play opportunities for children.

H06-1L31 Provide Art Experiences
This competency focuses on the importance of creativity in children's art experiences. It stresses the need for child care workers to plan appropriate process-oriented art activities in order for children to create according to their developmental stage.

H06-1L32 Provide Literature Activities
This competency focuses on the importance of providing enjoyable appropriate literature activities for children. It stresses the need to plan and implement a variety of experiences from telling stories to reading books.

H06-1L33 Provide Group Time Activities
This competency focuses on the importance of a child care worker planning for more directed learning during group time. It stresses the need for appropriate group time activities that focus on the experiences, interests and developmental level of children.

H06-1L34 Provide Music Activities
This competency focuses on the importance of music as part of the curriculum for children. It stresses the pattern of development for music appreciation and the planning of activities in order to promote this development.

H06-1L37 Provide Outdoor Activities
This competency focuses on the importance of using the outdoor environment effectively when guiding and providing experiences for children while outdoors.

H06-1L38 Provide Social Studies Activities
This competency focuses on the need for children to learn about themselves and their relationship to the people and world around them. It stresses the importance of child care workers focusing on appropriate social studies concepts and providing related activities.
H06-1L41  Provide Nutrition Activities
This competency focuses on the planning of activities involving nutrition and simple cooking skills. It stresses the need for child care workers to provide information and hands-on experiences in the area of food and nutrition.

H06-1N32  Integrate Cultural Factors
This competency focuses on the importance of considering cultural factors when interacting with children and families. It focuses on working with Aboriginal, immigrant and refugee families.

H06-1N33  Respect Parents' Rights and Opinions
This competency reinforces the philosophical context that the primary relationship in the children's world is that of the parent-child. Emphasis is placed on the child care worker's development of attitudes and skills which demonstrate and support the value of parents' rights and opinions.

H06-1P32  Communicate with School Personnel
This competency focuses on the mutual respect and collaboration between the children's centre and the school that is needed to meet the needs of children. It emphasizes the importance of appropriate communication methods with school personnel.

H06-1Q31  Explain the Child Care Profession
This competency identifies career options and educational requirements for child care workers. It focuses on the types of child care available in Manitoba and the evolution of the present child care system.

H06-1Q32  Demonstrate Employable Skills
This competency focuses on employability skills as they relate to child care workers. It stresses the importance of appropriate work habits and behavior for students on practicum in a children's centre.

H06-1Q34  Display Professional Behavior
This competency focuses on the professional behavior of child care workers. It stresses the importance of acting autonomously, rationally and ethically in the application of skills and knowledge.

H06-1Q35  Identify the Need for Professional Growth
This competency focuses on areas which are essential to child care workers as they work toward the enhancement of professionalism. It focuses on the importance of defining and supporting quality child care practices.

H07-C119  Rubber Dam Theory
Students will study the purpose and technique of rubber dam application.

H07-C124  Radiology – Theory
Students will study the purpose and techniques of obtaining intra-oral radiographs.

H07-C138  Interpersonal Relations
Students will study and practice communication skills for various situations which are common in a dental office.

H07-C146  Rubber Dam – Practical
Students will practice the placement and removal of rubber dam on manikins and once competent will practice on classmates under the supervision of a dentist.

H07-C147  Radiology – Practical
Students will practice placing intra-oral films on classmates and once competent will expose radiographs on DXTRR.
H07-C156 Supervised Clinical Experience
Designed to provide the student with practical experience in routine dental activities and an opportunity to express knowledge gained in the in-college portion of the Dental Assisting Program.

H07-C157 Clinical Practice
Students will develop the skills and competencies needed to perform intra-oral procedures. All learned theory and preclinical skills will be applied to clinical situations.

H07-D001 Operative Dentistry – Theory
Various restorative procedures will be discussed as to classifications, armamentarium and materials.

H07-D002 Endodontics – Theory
Students will learn causes and treatment of pulpal injuries.

H07-D003 Microbiology and Infection Control – Theory
This course deals with the description of infectious diseases and the prevention of transmission.

H07-D004 WHMIS Workshop
Students will learn what WHMIS is and its application to dentistry.

H07-D005 Life Sciences
Information in basic sciences required by dental assistants. Includes an introduction to general and dental anatomy, microbiology (sterilization and disinfection), pharmacology, pathology, growth and development. The general concepts consider specific examples in the oral and dental environment.

H07-D006 Dental Anatomy
Students will learn to identify adult and primary dentitions using tooth morphology and landmarks.

H07-D007 Professional Development
Students will learn the ethics of the dental profession, legal aspects of the dental practice and the dental assistant's responsibility to the profession.

H07-D008 Dental Practice Management
Students will learn steps involved in practice management, e.g., appointment control, dental insurance and one-write accounting system.

H07-D009 Preventive Dentistry
This course will consist of two sections: oral health dealing with prevention of oral diseases and nutrition dealing with the role of nutrition in relation to general and dental health.

H07-D010 Polishing and Fluoride – Theory
Students will study the purpose and techniques of rubber-cup polishing and application of topical fluoride.

H07-D011 Diagnosis – Theory
This course details thorough medical/dental history, charting procedures, taking vital signs and the knowledge of aids needed for diagnostic procedures.

H07-D012 Oral Surgery – Theory
Students will learn various surgical procedures performed in dentistry.

H07-D013 Operatory – Theory
Operatory theory deals with the dental assistant’s role for all dental disciplines.

H07-D014 Laboratory – Theory
Laboratory theory deals with the principles and properties of all dental materials. Students will learn indications and contraindications for using dental materials in various procedures.
H07-D015 Operatory – Practical
Students will learn and demonstrate the assistant’s role for all dental disciplines.

H07-D016 Laboratory – Practical
Students will learn and demonstrate mixing and handling techniques used for dental materials.

H07-D017 Prosthodontics – Theory
Students will learn of various prostheses used in dentistry.

H07-D018 Orthodontics – Theory
Students will learn causes and treatment of ortho which involves the straightening of teeth.

H07-D020 Social Sciences 2
This course traces the psychological development of the individual from conception to late childhood.

H07-E212 Sealants – Theory
Student will study the purpose and techniques of applying pit and fissure sealants.

H07-E213 Impressions – Theory
Students will study the purpose and techniques of obtaining impressions for study models.

H09-A102 General Chemistry 1
General Chemistry is an introductory level course focused upon the structure, properties and activities of the more common atoms and their compounds. It includes basic principles of chemistry which are used to explain and understand properties of matter. An integral part of the course is the ability to perform routine laboratory calculations such as concentration, solutions, titrations, pH, moles, conversions, chemical reactions, equilibrium and gas laws.

H09-A103 Lab Safety
Lab Safety is a course designed to acquaint the student with the skills and knowledge to work safely in a student lab, diagnostic lab or veterinary lab. The student will demonstrate the skills and attitude to work safely in a lab and be knowledgeable in WHMIS, first aid and fire prevention.

H09-A106 Parasitology
This course provides an introduction to parasitism and the common parasites of domesticated animals. The diagnosis and control of parasites found in animals of veterinary concern will be included.

H09-A107 Introduction to Animal Management
This course is designed to provide the student with the knowledge and skills to function in the veterinary and agricultural sectors. The student will become acquainted with the breeds, behavior, housing, handling systems and health management of the common domestic species. With this knowledge, the student will be able to handle animals with skill and communicate more effectively with clients. The course material will be delivered by lecture and audiovisual format with guest speakers and field trips to expose the student to all aspects of the agricultural industry and veterinary medicine.

H09-A110 Biology/Zoology
Biology/Zoology will deal with the general biological principles involving cells. An overview of the five kingdoms of living organisms will be included. Emphasis will be placed on the animal kingdom. The course deals with the basic anatomy and physiology of both the invertebrates and vertebrates and is a foundation for more advanced studies in animal science.
H09-A115 Computer Awareness
This course deals with an introduction to microcomputers, using the IBM-PC DOS operating system. The student will gain familiarity with DOS to create and delete directories, copy and delete files, format diskettes and other operating system commands. The majority of the emphasis in this course will be in gaining proficiency in word processing, spreadsheet and database software. The current software in use is WordPerfect, dBASE III* and Lotus 1-2-3.

H09-A116 Technical Mathematics
Technical Mathematics is an applied mathematical course designed to provide the Animal Health Technology student with the mathematical skills necessary for working in the animal hospital and laboratory. Emphasis is placed on calculations for making solutions and dosages as well as basic statistics. This course also includes some physics necessary for the Animal Health Technology student.

H09-A118 Communications
The objective of this course is to assist students to communicate effectively in a variety of situations. The course provides instruction in business letter format and style, short reports and scientific reports. Emphasis is also placed on library research as the student will prepare a paper for written and oral submission.

H09-A202 Medical Nursing Practical Laboratory 1
This course is designed to give students the practical skills necessary for handling and nursing animal patients as well as the theoretical knowledge regarding the methodology and application of these skills. The course consists totally of laboratory situations, with live animal patients and animal models in which students can learn and practice their skills.

H09-A203 Medical Nursing 1
This course will introduce the student to the concept of disease and its effect on body systems in domestic animals. Recognition of the diseased state and nursing the diseased patient will be emphasized.

H09-A204 Organic Chemistry
In this course, the student will learn the theory of chemical bonding pertaining to atoms that form organic molecules. The student will apply the rules of nomenclature to the homologous series of compound alkanes, alkenes, alkynes, arenes, alcohols, ethers, carbonyls and carboxylic acids.

H09-A214 Genetics
An introduction to the science of genetics as it relates to advancements in medicine, agriculture and animal breeding. It includes an introduction to the study of cell division, chromosomes, population genetics, gene mutations, cloning and manipulations relating to these activities.

H09-A218 General Microbiology
An introductory course in microbiology which includes a survey of the microbial world as well as basic techniques used in microbiology. The student will develop an understanding of the basis for some of the applied aspects of microbiology.

H09-A219 Anatomy and Physiology 1
This is an applied course focusing on the anatomy and physiology of areas and structures of domestic animals important to the Animal Health Technologist. Special emphasis will be placed on clinically relevant anatomy and physiology of all the common domestic species. The lectures in this course will concentrate on the physiology of the different body systems. The laboratory sessions, through dissections and demonstrations, will concentrate on the anatomy of the body systems.
H09-A302 Medical Nursing Practical Laboratory 2
This course is a continuation of Medical Nursing Practical Laboratory 1 H09-A202 and is designed
to give students the practical skills necessary for handling and nursing animal patients as well as the
theoretical knowledge regarding the methodology and application of these skills. The course consists
totally of laboratory situations, with live animal patients and animal models, in which students can
learn and practice their skills.

H09-A303 Medical Nursing 2
This course is a continuation of Medical Nursing 1 H09-A203.

H09-A308 Nutrition
Nutrition is designed to acquaint the student with the principles of nutrition. The student will be-
come familiar with the normal role of nutrients in the body and the diseases that are caused by imbal-
cances. Also covered are various feedstuff fed to domestic animals and good feeding practices.

H09-A309 Biochemistry
This course is designed to give the student a general knowledge of biochemistry and the role that bio-
molecules play in cellular metabolism and nutrition.

H09-A311 Anatomy and Physiology 2
This course is a continuation of Anatomy and Physiology 1 H09-A219.

H09-A318 Applied Microbiology
This course deals with the diseases caused by microorganisms commonly encountered in veterinary
medicine. The student will learn the practical aspects of isolation and recognition of these organisms,
characteristics of these organisms, as well as antibiotic sensitivity testing.

H09-A326 Hematology 1
Hematology 1 focuses on the normal hematology of domestic animals. The student will become profi-
cient in the recognition, evaluation and counting of the various blood and urine cells. The laboratory
sessions will allow the student to practice the concepts of complete blood cell counting and urinalysis.

H09-A408 Radiology
This course will deal with the basics of x-ray equipment, radiation physics, image recording, radiation
protection and radiation biology to enable the animal health technologist to aid the veterinarian in
diagnosis and treatment, with safety and economy in mind.

H09-A409 Reproduction
In this course, the student will learn the normal reproductive events in the common domestic species.
The student will study the normal anatomy and physiology of the male and female of each of these
species including normal reproductive behavior. On completing this course, the student will be able to
ascertain the normal reproductive events and behavior in an animal as well as the abnormal or prob-
lematic and what steps may have to be taken by a veterinarian or owner to correct a problem.

H09-A410 Clinical Pathology
In this course, the Animal Health Technology student will become acquainted with the techniques
and tests used in the clinical chemistry laboratory. Lectures reinforce the physiology and chemistry
necessary to understand why tests are performed. The laboratory sessions allow the student to practice
the techniques of the tests. Quality control in the clinical pathology laboratory is stressed at all times.

H09-A411 Surgical Nursing 1
This course will prepare the student of Animal Health Technology to be able to understand the prin-
ciples of aseptic technique, survey suite and pack preparation and surgical assistance in all species. The
student will apply this knowledge in laboratories of actual surgery performed by the veterinary staff.
H09-A412 Anesthesia 1
Students will become knowledgeable with the common anesthetic agents and anesthetic equipment in veterinary practice. They will learn how to monitor animals under anesthesia.

H09-A417 Hematology 2
Hematology 2 is a continuation of Hematology 1 H09-A326 with an emphasis on the abnormal complete blood cell count and the identification of pathological cells. The student will be introduced to cytology in this course.

H09-A511 Surgical Nursing 2
Surgical Nursing 2 is a continuation of Surgical Nursing 1 H09-A411. The student will apply their surgical nursing knowledge in laboratories of actual surgery performed by the veterinary staff.

H09-A512 Anesthesia 2
Anesthesia 2 is a continuation of Anesthesia 1 H09-A412. The student will practice their anesthesia skills on patients in the laboratory surgical rotations.

H09-A513 Pharmacology
In this course, the student of Animal Health Technology will become aware of the properties of the common pharmacological agents used in veterinary medicine. Emphasis is placed on the use of these drugs and their side effects when nursing the veterinary patient.

H09-A516 Avians and Exotic Animal Medicine
This course is designed to familiarize the student with the anatomy, physiology, husbandry, diseases and nursing care of pet avians as well as poultry. The student will also study the anatomy, physiology, husbandry, diseases and nursing care of some of the exotic animal species now being seen at veterinary clinics. The course will be delivered through lectures, self-study modules and tours of facilities.

H09-A517 Zoonosis and Public Health Medicine
In this course, the student will be introduced to the diseases of zoonotic and public health importance in veterinary medicine. The course material will be enhanced with lectures by guest speakers working in this area.

H09-A519 Lab Animal/Small Fur-Bearing Animal Management
This course is designed to familiarize the student with the anatomy, physiology, husbandry, diseases and nursing care of small fur-bearing animals found either in research laboratories or as private pets. The course will be delivered through lectures, self-study modules and tours of facilities.

H09-A520 Office and Accounting
This course presents an introduction to basic office accounting procedures, including the accounting cycle, accounts payable, accounts receivable, etc. The student will learn the course by performing accounting procedures.

H09-A610 Projects
The student will select a topic of interest and produce an original paper on this topic which will be presented both orally and in a written form.

H09-A611 Large Animal Clinical Practicum
The student will spend three weeks of practical training in a large animal practice at the beginning of the term. During this busy time of year for large animal practitioners the student will have an opportunity to practice all the skills learned in the program to date. The student is evaluated by the practicum clinic on a predetermined set of skills.
H09-A612 Practice Management and Client Management
In this course, the student will learn how to manage a veterinary practice including managing inventory, setting up fee schedules, marketing and managing personnel. The student will also study how to handle relations with clients with the emphasis on handling difficult clients.

H09-A614 Small Animal Clinical Practicum
The student will spend three weeks of practical training in a small animal practice at the end of the term. The student will have the opportunity to improve on the skills learned during the program. The practicum clinic will evaluate the student on the skills prerequisite to passing the program.

H09-A615 Applied Nutrition
Applied Nutrition is a continuation of Nutrition H09-A308. With a series of guest speakers as well as staff, this course will train the student in the nutritional care of ill patients. The student will also learn to formulate rations for increased productivity in food and performance animals.

H09-A616 Advanced Animal Health Techniques
This course is designed to introduce the student to the more advanced and newer skills in the animal health and veterinary technology field such as ultrasound diagnostics, advanced radiographic techniques and advanced clinical pathology. The course is presented in a practical laboratory setting.

H09-A626 Communications
This second Communications course is designed to increase the effectiveness of the student’s interpersonal communications skills. This course will also help the student in preparing the oral and written parts of Projects H09-A610.

H10-G031 Job Search
The student will learn to write personal resumes, as well as fill out mock applications.

H11-N108 Introduction to Nursing
This course is designed to introduce concepts of health and nursing as they relate to the fulfillment of human needs and thereby maintain physiologic, psychic and social integrity. The concept of adaptation is used as a basis for determining a client’s health status. The course focuses on adult clients who require basic nursing skills to assist them to adapt and cope with activities of daily living. The knowledge and skills presented provide a basis for nursing interventions based on the nursing process. Prerequisites or corequisites: Human Anatomy and Physiology H11-N120, Social Science H11-S101, Interpersonal Relations B13-S106, Activity for Life F01-C003 and Nursing Practice H11-N109.

H11-N109 Nursing Practice
This course provides the student with the opportunity to apply and become proficient in implementing the knowledge and skills obtained in Introduction to Nursing H11-N108. The student will practice in medical, surgical or long-term care settings. Prerequisites or corequisites: Human Anatomy and Physiology H11-N120, Social Science H11-S101 and Interpersonal Relations B13-S106. Corequisite: Introduction to Nursing H11-N108.

H11-N120 Human Anatomy and Physiology
This course is designed to provide an introductory study of the structure and pertinent aspects of the function of the principal organ systems. The importance of learning and using correct terminology is stressed. A unit on basic nutrition provides information which emphasizes nutritional principles students can apply to their lives. Laboratory exercises are provided to support and enrich the theoretical content. Active learning is required to perform dissections and complete the lab reports. This course is taken by students enrolled in several health-related disciplines.
H11-N208 Nursing
This course focuses on promoting the adaptation of adult and elderly clients who are experiencing commonly occurring health problems. The nursing process is used as a systematic method of organizing and providing care to clients and their significant others. The rights and concerns of clients are emphasized as being central to the care for which the nurse is responsible. Prerequisites: Introduction to Nursing H11-N108 and Nursing Practice H11-N109. Prerequisites or corequisites: Human Anatomy and Physiology H11-N220, Social Science H11-S201 and Social Science H11-S301. Corequisite: Nursing Practice H11-N209.

H11-N209 Nursing Practice
This course provides the student with the opportunity to apply and become proficient in implementing the knowledge and skills obtained in Nursing H11-N208. The student will practice in medical, surgical and gerontological settings. Prerequisites: Introduction to Nursing H11-N108 and Nursing Practice H11-N109. Prerequisites or corequisites: Human Anatomy and Physiology H11-N220, Social Science H11-N201 and Social Science H11-S301. Corequisite: Nursing H11-N208.

H11-N220 Human Anatomy and Physiology
This course is designed as a sequel to Human Anatomy and Physiology H11-N120. A working knowledge of introductory anatomy and physiology is assumed. The details of anatomy and physiology are organized around unifying concepts such as interrelationships of body organ systems, homeostasis. Presentation of the material reflects hierarchical levels of complexity that contribute to the student’s understanding of the body as a whole. Laboratory exercises are essential in aiding the student to apply theoretical concepts of anatomy and physiology. Clinical application is stressed throughout the course. This course is taken by students enrolled in several health-related disciplines. Prerequisite: Human Anatomy and Physiology H11-N120.

H11-N308 Nursing
This course focuses on promoting the adaptation of clients of all ages who are experiencing commonly occurring, but more complex, health problems. Increasing proficiency in the use of the nursing process as a systematic method of organizing and providing care to clients and their significant others is emphasized. Advocacy for clients is promoted as central to the care for which the nurse is responsible. Prerequisites: Nursing H11-N208 and Nursing Practice H11-N209. Prerequisites or corequisites: Introduction to Sociology B13-S201 and Nursing Microbiology H11-N311. Corequisite: Nursing Practice H11-N309.

H11-N309 Nursing Practice
This course provides the student with the opportunity to apply and become proficient in implementing the knowledge and skills obtained in Nursing H11-N308. The student will practice in medical, surgical, psychiatric, obstetric or pediatric settings. Prerequisites: Nursing H11-N208 and Nursing Practice H11-N209. Prerequisites or corequisites: Introduction to Sociology 313-S201 and Microbiology H11-N311. Corequisite: Nursing Practice H11-N309.

H11-N311 Nursing Microbiology
The course deals with the infectious disease process and its relationship to patient care. Basic concepts in immunity, immunology and epidemiology are considered initially. Microorganisms are studied in terms of general classification, taxonomy, isolation, growth requirements and identification. Infectious disease is studied through a systems approach with emphasis placed on normal flora, route of entry, potential pathogens and specimen collection. The control of infectious disease is discussed in regards to disinfection, sterilization, antimicrobial drugs, immunization and hospital control programs. The aim of the course is to enhance performance of patient care, increase communication with medical professionals and provide a significant contribution to the prevention of infectious disease.
H11-N405  Trends in Health Care
This course is designed to facilitate the role transition from student to graduate nurse. It will consider systems of health care delivery in the context of current practices and future trends. It will serve as an introduction to the role and function of the organized nursing professional. The historical development of nursing will be considered in relation to current issues and trends in the delivery of health care. Prerequisites: H11-N308 and H11-N309.

H11-N406  Community Health
This course is designed to assist the student in understanding the organization and delivery of health care in the community. It will emphasize the importance to continuity of care. The student will assess the needs of clients in their homes and communities and may initiate activities to facilitate an optimum level of adaptation.

H11-N408  Nursing
This course focuses on promoting the adaptation of clients of all ages who are experiencing complex long-term health problems or health problems resulting in crisis. Students are encouraged to exercise critical thinking and problem-solving skills in their approach to client care. The moral, ethical and legal responsibilities of the graduate nurse are emphasized. Prerequisites: Nursing H11-N308 and Nursing Practice H11-N309. corequisite: Nursing Practice H11-N409.

H11-N409  Nursing Practice
This course provides the student with the opportunity to apply knowledge and skills obtained in all previous and concurrent courses. The student will be expected to show evidence of increasing ability to use critical thinking as a basis for making nursing judgements. The student will practice in medical, surgical, psychiatric, obstetrical, or pediatric setting. Prerequisites: Nursing H11-N308 and Nursing Practice H11-N309. corequisite: Nursing H11-N408.

H11-S101  Social Science
This course is an introductory study of general developmental psychology. It is designed for students in health care programs and, as such, is aimed at practical application of social science knowledge in the helping relationships. During the first part of the course, emphasis will be placed on fundamental principles of growth and development, development tasks, key concepts of personality, motivation, relevant aspects of emotions and methods of coping or adapting.

H11-S201  Social Science 2
This second part of the course traces the development of the individual from birth to death in an ages-and-stages manner. This section begins with an examination of some key aspects of sociology which are then integrated with the development material which follows. Psycho-sociological considerations of personality development will be emphasized in an attempt to portray an accurate picture of normal human development throughout the life cycle. Each unit of instruction highlights the physical, social and psychological tasks of a particular stage of the life cycle and directs these to the health care relationship. Prerequisite: Social Science H11-S101.

H11-S301  Social Science 3
This is a continuation of the format utilized in part two but the section of the life span to be explored is shifted to adolescence and beyond. Adolescence, early adulthood, middle age and old age are considered in developmental terms from both physical and psychosocial perspectives.

H16-D100  Social and Historical Perspectives
This course is designed to provide the student with an understanding of how society's historical perceptions of individuals with a mental handicap have affected present-day services. Students will examine their own values and attitudes towards labeled individuals in an effort to guard against future prejudice and discrimination.
H16-D101 Health and Safety
This course is designed to give the student a general overview of a healthy physical state. As well, students are made aware of the various causes, prevention strategies and classification methods related to individuals who have a mental handicap.

H16-D102 Professional Development
This course serves as an introduction to the professional competencies necessary for a developmental service worker. Students will learn to recognize and demonstrate appropriate work behaviors as well as gain an understanding of the variety of services available for individuals who have a mental handicap.

H16-D103 Interpersonal Communications
This course is designed to give the student an introduction to interpersonal communications. Course content includes an overview of communications, self-concept, our perceptions, emotions, language, non-verbal communication, listening and an understanding of how interpersonal relationships work.

H16-D104 Practicum 1
The student will be involved in a full-time work experience in one of a variety of possible residential or daytime situations. This initial experience will allow the student to observe and become acquainted with the role of a developmental services worker in the agency. As well, the student will begin to practice the theoretical skills learned in Term 1 course work. Either Practicum 1 or 2 must be a residential placement.

H16-D105 Practicum 2
The student will work in one agency to practice the theoretical skills learned in Year 1. Specific assignments will be given to ensure that the student develops the skills and fulfills the expectations of Year 1 course work. Either Practicum 1 or 2 must be a residential placement.

H16-D106 Residential Services
This course will focus on the range of residential options currently available and how to assist people to develop their own ideas of what they want their home to be. The course will also cover home management, nutrition and menu planning.

H16-D107 Personal Care
This course provides the student with theoretical and practical training in personal care techniques such as bathing, dressing, body mechanics, lifting and transferring. An emphasis will be placed on providing such assistance with respect to privacy, safety and individual needs and abilities.

H16-D108 Writing Skills 1
This course provides an opportunity for the student to improve the working skills that are necessary for the job of a developmental service worker.

H16-D109 Writing Skills 2
This course provides an opportunity for the student to improve the working skills that are necessary for the job of a developmental service worker.

H16-D200 Family Dynamics
This course is an introduction to family dynamics with the emphasis being placed on families which include a member who has a mental handicap. It stresses the importance of respect for families and the need to encourage their involvement in the lives of the person who is disabled.

H16-D201 Advocacy
This course introduces the need for strong advocacy on behalf of and by people who have a mental handicap. The course includes an overview of rights, how to be a good advocate and how to encourage the family and the individual to advocate for themselves.
H16-D202 Communication and Counselling
This course is a continuation of the first-year course Interpersonal Communications H16-D103. The emphasis is on being effective communicators and counsellors and includes the ability to recognize and respond to an individual’s life situation, communicating with family and responding safely to crisis situations.

H16-D203 Principles of Management
This course is an introduction to management. It includes leadership, management and supervision techniques, how to manage time and maintain records, dealing with stress, developing volunteers and promoting good public relations.

H16-D204 Sexuality
This course is designed to help developmental service workers facilitate healthy sexuality attitudes in people who have a mental handicap. It includes being comfortable with our own sexuality, role playing and teaching techniques for use with people who have a mental handicap and the prevention of sexual abuse and disease.

H16-D205 Practicum 3
This practicum can be one of either a residential, employment—occupation or an educational placement. The student will be expected to specifically demonstrate Year 2, Term 1 competencies but will also be responsible for maintaining Year 1 skills. This practicum will involve a greater degree of responsibility and initiative than previously expected.

H16-D206 Practicum 4
The final practicum will allow the student to demonstrate competency in all program courses. A high degree of responsibility, initiative and motivation will be expected as students attain mastery in planning, assistance and overall problem solving.

H16-D207 Medications Training
In this course students will learn to responsibly and sensitively assist people with mental handicaps in understanding the purposes and administration of various medications.

H16-D208 Response to Physical Illness
This course deals with alterations from normal physical health. It will also focus on the kinds of conditions that have typically been associated with mental retardation.

H16-D209 Planning
This course introduces a wholistic method of planning for persons who have a developmental disability. It will consider various planning tools currently in use such as MAPS, Path, I.P.P. and so on. It focuses on the concepts of inclusion, empowerment, individualization and comprehensiveness.

H16-D210 Education 3
This portion of the education module focuses on developing an understanding of behavioral issues and behavior management. Gentle teaching and cognitive counselling theories will form the major content areas.

H16-D211 Education 2
This course focuses on a variety of teaching techniques and strategies. It looks at goal setting, task analysis, planning and evaluation. It considers the “when” and “how” of providing assistance to others.

H16-D212 Education 1
This course serves as an introduction to educational services for individuals who have a mental handicap. It will examine the evolution of special education services, the range of existing educational opportunities, mainstreaming, work experience and transition issues. A significant portion of the course will look at the role of teaching assistant in the educational context.
H16-D213 Augmentative Communication
The course is intended to provide a theoretical overview as well as opportunity to experience a range of strategies for enhancing a person's existing communication system. Areas covered include sign language, symbol systems, computer-assisted technology and facilitated communication.

H16-D214 Introduction to Mental Health
This course will provide students with an overview of the mental health field. The course will cover the issues of dual diagnosis, major mental health problems and the mental health system.

H16-D215 Development Seminar
This course is an expansion of Professional Development H16-D102. Its classroom component includes an overview of the social service system. The course also includes an in-depth study of the roles and responsibilities of a human service professional.

H16-D216 Integration and Community Living
The course is designed to provide the student with the competencies to facilitate and support meaningful integration of individuals with developmental disabilities in the community. The student will examine the concepts of integration and community and learn a variety of strategies to facilitate integration for individuals.

H16-D217 Vocational Options
This course considers the range of vocational options currently available to people with developmental disabilities. Supported employment will be a major focus of the course as it currently presents the most optimistic response to the under-employment and unemployment that is the norm for the majority of people with developmental disabilities.

H16-D218 Aging
This course examines the effects of aging on persons with developmental disabilities. It also looks at the suitability of the present service systems as a means of addressing the needs of aging individuals.

L96-D100 Writing Skills
This course examines sentence and paragraph construction, usage and mechanics. The following topics comprise this course: Sentence Structure A L96-D101, Sentence Structure B L96-D102, Usage L96-D103, Punctuation and Capitalization L96-D104, Sentence Writing L96-D105 and Paragraph Writing L96-D106. Standing is achieved in this course by passing a comprehensive test on all these topics.

L96-D101 Sentence Structure A
The study of the sentence begins with finding verbs and their subject, identifying sentences and fragments and identifying principal and subordinate clauses.

L96-D102 Sentence Structure B
The study of the sentence continues with identifying sentences, fragments and run-ons, using correct coordination and subordination to join ideas and identifying different sentence types (compound, complex and simple).

L96-D103 Usage
Three main areas are covered: having the verb agree with the subject, using the correct form of various irregular verbs and distinguishing between pairs of commonly confused verbs.

L96-D104 Punctuation and Capitalization
Punctuation topics include the correct use of the period, question mark, comma and apostrophe. Capitalization rules include proper nouns, organizations, brand names and titles. Situations in which capitals are to be avoided, such as family relationships and occupations, are also studied.
L96-D105  Sentence Writing  
This section deals with sentence construction. Notes or ideas for sentences are supplied. These ideas must be combined in such a way that the sentences constructed correctly express the relationship among the ideas or notes.

L96-D106  Paragraph Writing  
Paragraphs are constructed using a set of supplied notes or ideas. The ideas must be joined in such a way that they show the correct relationship among the ideas.

L96-D201  Writing – Supplement  
This course covers such topics as outlining, topic sentence and paragraph construction.

L96-D210  Reading  
This course is designed to improve reading comprehension, vocabulary and reading rate. A variety of materials are used, including texts from other courses.

L96-D220  Study Skills  
A variety of study skills topics are covered. These include time management, textbook reading, preparing for tests and taking them, memory improvement techniques, listening and note taking and critical thinking.

L96-D230  Spelling – Core  
The core spelling course consists of basic spelling words. Long and short vowels, other letter combinations and blends are used in teaching the basic word list. Some rules are also introduced.

L96-D231  Spelling – Supplement  
This course is designed for entry into the secretarial and business programs. It is required for entry into the Adult 11 programs. It consists of more advanced words and deals with prefixes and suffixes.

L96-D240  Computer Awareness Training – Core  
This course introduces students to computers. No previous experience is required. The course covers the keyboard, some DOS functions and basic computer operations.

L96-D300  Mathematics – Core  
This course consists of the following: Whole Numbers L96-D301, Fractions L96-D302, Decimals L96-D303, Ratio and Proportion L96-D304, Percent L96-D305 and Measurement L96-D306. To achieve a standing in this course, a comprehensive test covering all these topics must be passed.

L96-D301  Whole Numbers  
This course deals with reading, writing and rounding off whole numbers. Whole numbers are used in addition, subtraction, multiplication and division, order of operations and word problems.

L96-D302  Fractions  
This course begins with the concept of fractions and reading and writing them. Fractions are used in addition, subtraction, multiplication and division, order of operations and word problems.

L96-D303  Decimals  
The concept of decimals is introduced. Reading, writing and rounding off decimals are studied. Decimals are used in addition, subtraction, multiplication and division, order of operations and word problems.

L96-D304  Ratio and Proportion  
This course involves the concepts of ratios and proportions and uses them to solve word problems.
L96-D305  Percent
This course involves identifying percents, changing decimals and fractions to equivalent percents, converting percents to equivalent decimals and fractions and solving word problems using percent, including simple interest problems.

L96-D306  Measurement
This course involves both metric and imperial liquid, weight, time and distance measurements.

L96-D420  Mathematics — Supplement
This course consists of the following options: Hand-Held Calculator L96-D421, Algebra 1 L96-D422, Algebra 2 L96-D423, Graphs L96-D424, Algebra Problems L96-D425, Geometry 1 L96-D426 and Geometry 2 L96-D427. The number of options required for standing depends on the program for which the student is preparing. For entry into all Adult 11 programs, standing is achieved by passing a comprehensive test.

L96-D421  Hand-Held Calculator
This course introduces students to the basic functions of a hand-held calculator. Decimals, fractions, square root and various formulae are taught.

L96-D422  Algebra 1
This course deals with basic algebra concepts such as integers, including calculations with positive and negative numbers, basic terminology, exponents, powers and bases and calculations with polynomials.

L96-D423  Algebra 2
This course deals with solving equations with one unknown.

L96-D424  Graphs
This course involves construction and interpretation of linear, bar, broken-line and circle graphs. Linear equation graphs and tables of values are also involved.

L96-D425  Algebra Problems
The prerequisites for this course are Algebra 1 L96-D422 and Algebra 2 L96-D423. This course involves using algebra to solve word problems dealing with numbers, ages, rectangles, digits, mixtures, ratios and money.

L96-D426  Geometry 1
This course involves geometric terminology, angle and line construction, circle construction and analysis and construction and analysis of triangles and polygons.

L96-D427  Geometry 2
The prerequisite for this course is Geometry 1 L96-D426. This course deals with determining the perimeter, area, volume and surface area of various geometric shapes including triangles, squares, circles, spheres, cones, etc.

L96-D500  Science
This course consists of the following options: Measurement L96-D501, Matter and Energy L96-D502, Heat AB L96-D503, Heat C L96-D504, Electrical Energy L96-D505, Mechanical Energy L96-D506, Life Science A L96-D507, Chemistry C L96-D508 and Life Science L96-D509. The options selected are determined by the program for which the student is preparing. For entry into Adult 11A/C, standing is obtained after passing a comprehensive test.
L96-D501 Measurement
This course introduces the metric system (SI) of measurement and encourages the usage of common units such as those of distance (meters, kilometers, etc.), mass (grams, kilograms, etc.), volume (liters, kiloliters, milliliters, etc.), temperature (Celsius, degrees). It develops concepts of size in the metric system through laboratory experiments and exercises. It also develops a simple and convenient method of conversion within the metric system.

L96-D502 Matter and Energy
This course develops an understanding of the composition and structure of matter, the periodic table, the states, properties and changes of matter, the nature and sources of energy and the types and forms of energy.

L96-D503 Heat AB
The course develops an understanding of the nature of heat energy and its sources, the methods of heat transmission and the conversion of heat energy, including a treatment of the advantages and disadvantages of different types of house insulation, their “R” values and some methods of preventing heat loss.

L96-D504 Heat C
This course introduces concepts and definitions necessary for solving problems, including temperature conversions from Fahrenheit to Celsius degrees and vice versa, quantity of heat gained or lost by a material, conversion of heat energy to mechanical energy and vice versa and linear and volume expansion of solids and liquids.

L96-D505 Electrical Energy
This course introduces concepts of static electricity through a study of the nature of charges and some of their effects. It develops an understanding of electric current, electrical circuits and related terminology. This includes a treatment of Ohm’s Law and its application to simple series and parallel circuits, electrical power and cost of electrical energy. It develops the basic concepts of magnets, magnetic fields and electromagnets. The principles of electromagnetic theory are used to illustrate how the following devices operate: electric bell, telephone, transmitter, broadcasting antenna and receiving antenna, simple AC generator and step-up and step-down transformers.

L96-D506 Mechanical Energy
This course develops concepts of work, energy, power mechanical advantage, efficiency and related terminology. It develops methods of solving problems based on work, power, law of machines, efficiency and mechanical advantage. It applies concepts of work, power, efficiency, mechanical advantage and problem solving techniques to each of the following types of simple machines: lever, incline plane, wheel and axle, pulleys, wedge and screws.

L96-D507 Life Science A
This course develops basic concepts of cell structure and chemical activity with a “typical” cell. It describes the structure, method of infection and ways of reducing or preventing damage caused by each of the following: viruses, bacteria, fungi, bugs and worms.

L96-D508 Chemistry C
This course introduces valence, writing and naming of compounds, shows how to balance equations, discusses acids, bases and buffers and defines pH and introduces the pH scale.
L96-D509  Life Science Adult 11 B and C

B: This course describes the structure and functions of each of the following: nervous, skeletal, muscular, circulatory, digestive, respiratory, endocrine and reproductive systems.

C: This course covers electricity. It explains the difference between conductors and insulators, discusses static and current electricity and explains the operation of the voltaic cell. Light: discusses the electromagnetic spectrum, lenses and the human eye. Heat: discusses the difference between heat and temperature, discusses conditions which alter freezing and boiling points. Pressure: discusses standard, negative and positive pressure and osmosis. Machines: explains simple machines; solutions: explains and shows how to solve problems involving molarity and weight.

L96-D999  Grading Systems: C = 80, B = 85, A = 90, A+ = 95

Grading systems (V9) College Preparation for Aboriginal Students.

MET-1001  Math

The material covered in this course is mostly a review of the Grade 12/Senior 4 mathematics program along with some additional topics required for other courses in the Mechanical Engineering Technology program. Emphasis is placed on applying the various mathematical concepts to problems from related courses.

MET-1003  Communications

The overall goal of this course is to help develop written communication skills, particularly those required of technologists, who will be employed in a scientific, engineering or industrial environment.

MET-1004  Manufacturing Processes 1

This course serves as a general introduction to manufacturing principles, methods and costs. Emphasis is concentrated on the theory of basic machine tool operations and associated calculations.

MET-1005  Industrial Materials

This course introduces the student to the materials used in mechanical design practice, their characteristics, capabilities and applications. The knowledge of metals, organics and composites forms a base for later courses such as Stress Analysis 1 MET-1021, Metallurgy MET-1030 and Advanced Manufacturing 1 MET-1031.

MET-1006  Mechanical Drafting

This course introduces the first-year student to one of the most important methods of transmitting technical information: the drawing. Successful completion of this course will require each student to conform to the conventions of mechanical drawing so the work will be clear to all who must use it.

MET-1007  Math/Applied Statistics

This course provides an introduction to the basic concepts of statistical methods. Some of the topics covered will be: frequency distributions, measures of central tendency and dispersion, probability, normal distribution, sampling, analysis of variance, correlation analysis and regression analysis.

MET-1008  Mechanics – Statics

This course will present basic theory in force and vector analysis of objects in static equilibrium. Emphasis will be placed upon thinking logically toward a solution and presenting it at a professional-level standard of technical documentation. This theory will be used in later courses such as Mechanics – Dynamics MET-1015, Stress Analysis 1 MET-1021 and Fluid Mechanics MET-1019.

MET-1009  Report Writing

This course helps the student polish the communication skills gained in Term 1. Emphasis is on producing the written reports and giving the oral briefings common in a scientific, engineering or industrial environment.
MET-1010  Engineering Economics
This course introduces the student to general management philosophy and principles, Canadian business structure and engineering economics. The principal intent of this course is to prepare the student to make management decisions based on the engineering and economic objectives. It will also provide the student with some insight into the difficulties and problems faced by managers today.

MET-1011  Project Management
Technologists are often called upon to manage a project, a coordinated effort with a definite end. Many of the techniques used to run a one-off project are different from those used to run ongoing efforts in routine company management. This course will prepare Mechanical Engineering Technology graduates to organize and run the types of projects they may encounter early in their careers.

MET-1012  Manufacturing Processes 2
This course serves to reinforce the concepts presented in theory in Manufacturing Processes 1 MET-1004. Practical skills will be developed through applied assignments to be prepared on the available basic machine tools.

MET-1013  Electronics (Passive Circuits)
This course introduces direct current electricity and magnetism by analyzing electrical and magnetic circuits. The student will be introduced to the practical side of electricity and safety requirements by setting up circuits in the lab to verify work covered in the classroom.

MET-1014  Canadian Business Fundamentals
This course will have the students operating as companies, competing with each other using the BSIM (Business Simulation program). The fundamental principles relating to law, industrial property rights and business administration in Canada will be presented as essential background for successful operation of a business in Canada.

MET-1015  Mechanics – Dynamics
This course will build upon the force analysis of statics. The pure kinematics of rectilinear and angular motion will lead to consideration of the forces of dynamic equilibrium with respect to plane motion.

MET-1016  Structured Computer Programming
This course will consist largely of lab time used for writing programs which incorporate knowledge of constants and variables, arrays, expressions and operators, subroutines, functions, files, graphics, event trapping and assembly language interface.

MET-1017  Calculus
This course introduces the student to differential and integral calculus. Applications from Mechanical Engineering Technology, for example: kinematics, areas, volumes of revolution and centroids are stressed throughout the course.

MET-1018  Electronics – Linear and Digital Circuits
Linear electronics (solid state) deals with semiconductor devices and their use in rectification, voltage, regulation, amplification and optoelectronics circuits. Digital electronics introduces the student to number systems, binary codes, gating and logic circuits. An introduction to microprocessors, automation and robotics concludes the course.

MET-1019  Fluid Mechanics
This course provides the basic principles of fluid statics and dynamics as applies to mechanical engineering situations, especially pipe flow. It also lays the foundation for future courses in Fluid Power MET-1024, Automation MET-1035 and Thermodynamics MET-1040.
MET-1020  Numerical Methods
Mathematical problems are formulated and solved with arithmetic operations. Analytical solutions of ordinary and partial differential equations are introduced and then solved using a numerical computation approach. Applications involving numerical integration are included. Emphasis is on solutions of applied problems that relate to the mechanical discipline.

MET-102 Stress Analysis 1
This course covers the basics of normal stress and strain, shear stress, beams, combined stress, pressure vessels, columns and energy methods. Finite element analysis will be used as a concluding portion.

MET-1022 Quality Control
An introductory course to the concepts and techniques used by management to achieve an effective quality assurance/control organization within a manufacturing setting. Through hands-on surface table work, emphasis will be placed upon how and why inspections are done. The different areas of inspection in control of manufacturing are explored, with emphasis on statistical process control.

MET-1023 Computer-Assisted Design
This basic introduction to computer-assisted design provides the fundamental concepts and basic skills necessary to produce a mechanical design on a CAD system. Two-dimensional and three-dimensional models with associated details will be produced.

MET-1024 Fluid Power – Hydraulics
This course provides the student with the fundamental concepts and basic skills necessary to understand and design a variety of fluid power (hydraulic) circuits. The student will apply these concepts through problem solving, schematic development and component specification in order to develop a greater understanding of the practical applications of fluid power.

MET-1025 Commercial Mechanical Components
This course introduces the student to standard mechanical components that are commonly used in industry. This is not a design course but is intended to make the student aware of standard catalog components, how they are selected, local sources for these components and the application information available to them.

MET-1027 Stress Analysis 2
This course will be a continuation of basic stress analysis related to weldments, impact loading, bolted connections, fatigue and fracture mechanics.

MET-1028 Fluid Power – Pneumatics
This course provides the fundamental concepts and basic skills necessary to understand and design a variety of fluid power (pneumatic) circuits. The student will apply these concepts through problem solving, schematic development and component specification in order to develop a greater understanding of the practical applications of fluid power (pneumatics).

MET-1029 Fundamentals of Component Design
This course will introduce some of the basic concepts involved in machine design. Since a machine is a combination of machine elements or parts which, when dismantled, is a collection of simple parts such as bolts, gears, cams, springs and shafts (the building blocks of all machines) one must have an understanding of these basic components. This course will examine these basic building blocks of machine design to give the student the necessary foundation for machine design.

MET-1030 Metallurgy
This course will cover metallurgical equipment overview, sample preparation, constituent identification and theoretical physical metallurgy.
MET-1031 **Advanced Manufacturing 1**
Analysis of mathematical and practical considerations in manufacturing processes. The related tool and die requirements for a variety of processes will also be covered (i.e., gauges, cutting tools, fixtures, press dies, injection molding dies and foundry patterns).

MET-1032 **Industrial Engineering 1**
The course presents the basic principles for the successful application of motion and time study. It is designed to instruct the student in the systematic approach for improving and standardizing the work method and the techniques for measuring or estimating the standard work content or standard time.

MET-1033 **Tooling Technology and Design**
This course will cover theory and practical design considerations encountered in a variety of “special tooling” areas. Theory includes recognition and confinement of “degrees of freedom”, fixture requirements and design, blanking and piercing and multistage tooling. Labs will concentrate on the design elements of tooling.

MET-1034 **Technical Report**
The technical report written for this course is the culmination of the Mechanical Engineering Technology education program. Its purpose is to demonstrate the student’s ability to apply the skills and knowledge acquired. Class time is for research, analysis, report writing and instructor consultation.

MET-1035 **Automation**
This course advances the principals of fluid power into the continually expanding field of low cost automation. The major area examined is the use of hydraulics and pneumatics as the prime motive force in an automated device, with special emphasis on the control aspects of fluid power systems.

MET-1037 **Industrial Engineering 2**
This course builds on Industrial Engineering 1 MET-1032 specifically in the areas of systematic planning and managing of industrial facilities, including systematic material handling analysis.

MET-1038 **Advanced Manufacturing 2**
A continuation of Advanced Manufacturing 1 MET-1031, where concentration will be placed on plastics processes, including mold design and production. The lab environment will be mainly tutorial in nature and small group projects will encourage involvement in a variety of processes. Computer numerical control machine programming and part production will predominate the labs.

MET-1039 **Production Planning and Control**
After an introduction covering the intent and function of production planning and control, topics including types of production, production control procedures, make or buy, scheduling and loading and capacity planning will be covered. Current areas such as MRP, CIM and JIT will be presented in theory and applied labs. Computer programming will be used in the lab environment to reinforce the theory concepts.

MET-1040 **Thermodynamics**
This course covers the theory of properties of thermodynamics, types of energy, steam and gas tables, laws of thermodynamics, the ideal gas, engine cycles and solar radiation.

MET-1041 **Instrumentation 1**
This course introduces the student to the concepts of automatic control and the elements/components used to implement these systems. Emphasis is placed upon the methods and devices used for data/signal gathering and control of the various mechanical parameters.
MET-1042 Air Conditioning
This course will present the basic theory of air psychometry and heat flow which are necessary to assure the various properties and quantities of air for human comfort. It will provide the groundwork for future work in areas such as selection and control of air conditioning systems and energy management.

MET-1043 Electrical Systems
The material presented introduces the concepts involved in the characterization, design, testing and troubleshooting of electrical systems used in heating, ventilating, air conditioning, hydraulic and pneumatic systems. This discussion would include electrical/electronic actuators, controllers in conjunction with appropriate sensors and I/O devices.

MET-1045 Instrumentation 2
Logic circuitry is introduced to explain how process controllers and programmable logic controllers facilitate the control of entire processes. There is an introduction to the theory of measurements including such topics as measurement goals and concepts, range, span, frequency response and standards and calibration methods. The methods by which analog signals are converted to digital form, processed and then converted back to the analog control signal lead to a final discussion of operator interface, data gathering methods and process control digital computers.

MET-1046 Air Conditioning Systems
This course will present the basic thermodynamics of the refrigeration cycle and describe various refrigeration systems and components. It will build upon previous psychometric chart analysis, cover the calculations of air distribution and conclude by studying the attributes of various air conditioning systems.

MET-1047 Energy Management
The need for energy conservation and energy management concepts are introduced. Identification of the methods used to conduct energy management programs are presented along with definitions of energy efficiency and the engineering aspects of energy management such as basic thermodynamics, heat transfer and fluid mechanics. The course concludes with the programming and monitoring of a supervisory system employed to implement an energy management and monitoring system.

MET-1048 Noise, Vibration and Balancing
The basic theory of sound and vibration will be introduced to show the effects of this form of energy on people and the environment. Problems will be solved using general principles of sound and vibration control. The balancing of rotating parts will be covered with emphasis on problem solving.

MET-1049 Engineering Design
This course will help the student develop a reliable process for producing a real design by applying analytical skills and technical knowledge from all previous courses. Class time will be used for selecting a project, performing the design and consulting with instructors. The final product of the course will be the finished design for a product, system, device or object that could actually be built from the documentation provided.

MET-1050 Supervisory Management
Students will learn how to organize and delegate work, make sound decisions, improve communication skills, hire and motivate employees, appraise employee performance, handle conflicts, discipline problems and grievances, counsel employees, provide leadership to the work group and deal with organizational ethics and politics.

MET-1051 Advanced CAD
Students will extend their solids-modeling skills from the earlier CAD course to include constructing complex multi-part assemblings and bills of materials. Solids models will be used for other engineering purposes such as finite element analysis (stress, vibration and thermal analysis) and CNC toolpath generation. Instruction will be on Intergraph and Mazak systems.
MET-1052  Technical Report Planning
Students will determine the purpose, scope and detailed schedule for their individual Term 6 technical report project. Final output will be a written and oral project definition.

R01-B001  Study Skills
This course assists students to develop effective methods of studying, reading a textbook, taking notes, preparing for examinations and managing their time so as to be successful in the College.

R01-B002  Communications 1—ACCESS Program
Identifies and provides remediation for reading and writing problems. Exercises are provided to increase reading speed, comprehension and vocabulary. Time is spent on logical reasoning and in the reading lab.

R01-B003  Professional Development 1
Students learn self-assessment and develop professional behaviors. Topics include goal setting, stress and time management, communications, confidence building, problem solving, values awareness and group development. Participation is essential.

R01-B004  Supplementary Instruction
A process designed to broaden the students' knowledge base and enhance their learning in the College credit courses. Provides review, discussion, clarification, small group work and testing for ACCESS, Southern Nursing program and Northern Nursing program students.

R01-D017  Communications 2
Designed with two components: first is continued remediation in reading and writing, second is learning to research issues and write formal papers with footnotes and a bibliography.

R01-N009  Professional Development 2
This course is designed to take the concepts learned in Professional Development 1 R01-B003 and apply them in a group setting. Topics examined include conflict resolution, assertiveness, feedback, communication, leadership and group development. Participation is essential.

R01-N011  Supplementary Instruction 2
A process designed to broaden the students' knowledge base and enhance their learning in the College credit courses. Provides review, discussion, clarification, small group work and testing for ACCESS, Southern Nursing program and Northern Nursing program students.

R01-N014  Supplementary Instruction 3
A process designed to broaden the students' knowledge base and enhance their learning in the College credit courses. Provides review, discussion, clarification, small group work and testing for ACCESS, Southern Nursing program and Northern Nursing program students.

R01-N016  Supplementary Instruction 4

R01-N017  Supplementary Instruction 5

R01-N018  Supplementary Instruction 6

R01-N019 Professional Development 3
This course is designed to teach the assertiveness skills necessary to function effectively in the workplace with co-workers, management, consumers and clients. Students will be required to demonstrate their ability to apply specific assertiveness skills and techniques in a variety of situations.

S01-B102 Culture and Ethnology 1
This course looks at the origins of culture and the development of some early cultural groups. The progress from early to modern cultures is charted with discussion of such aspects of culture as language, values and norms, traditions and organizations. There is some emphasis on the effects of urbanization in modern North American culture. As well, mosaic and melting pot models within the North American context will be examined. Topics included here are cultural plurality, majority and minority cultures, cultures in conflict and cultures in transition.

S01-B108 Deaf Culture
This course is designed to introduce the student to the cultures of Deaf people in North America. Several prominent models of culture are discussed with application to the Deaf community. Aspects of Deaf culture such as language, values, rules of behavior and cultural identity are investigated through lectures, handouts, recommended reading, videotapes and student research and presentations.

S01-B113 Cross-Cultural Interaction
This course assists students in identifying and articulating issues in cross-cultural interaction. Students explore common problems that occur and potential resolutions.

S01-B114 English 1
This course is designed for students to increase their syntactic, semantic and pragmatic proficiency of the English language through lectures and assignments on prescribed topics. Elements of English writing style will also be covered.

S01-B118 Literature Review 1
This is the first of two literature review courses that allow students to read publications related to the field of interpretation over and above those used as textbooks or discussed in various courses.

S01-B121 Interpretation Settings
This course is an overview of the variety of settings where interpreting may be required, such as medical, legal, employment, conference, mental health, recreational and religious situations. As well, consumer/interpreter dynamics are discussed including pre-assignment preparation, small and large group meetings, interviews, panel discussions and team interpreting.

S01-B123 ASL 5
This is the fifth and final course in the series of American Sign Language (ASL) courses for ASL/English interpretation students. Further practice is given in discourse, along with in-depth individual evaluations of students' ASL usage. The focus in this course is on preparing students for the practicum experience in Term 6.

S01-B124 English 2
This is a practical course in applying English skills in situations similar to those an interpreter would be found in. Students prepare and give a series of oral presentations during which they work on various aspects of their delivery. Specific practice is given in dealing with different points of view, building vocabulary, diverse subject material, abstracting and feedback.

S01-B126 Interpretation Lab 5 — General Practice Lab
This is a general practice lab in which students participate in ASL/English interpretation situations. These may take the form of live role play, videotaped scenarios brought in by the instructor and prepared materials brought in by each student.
S01-B127  Interpretation Lab 6 – Mock Situations
In this lab, students interpret in mock situations by preparing for, interpreting in and conducting appropriate post-interpretation follow-up. Students are graded on this ability to preplan, to team with other student interpreters and to debrief with consumers and their fellow team members.

S01-B130  Special Projects – Independent Study
In this course, students research a topic of their choice as it relates to a discipline of interpretation. Students choose a topic, investigate it as thoroughly as possible, present a summary of their findings to the class and hand in a written paper and list of resources.

S01-B132  Practicum 3
This is the final practicum for the two-year ASL/English interpretation program in which students are placed at two practicum sites for an extended period of time. Students are placed directly under a site supervisor and participate in the daily interpreting activities of the practicum site as determined by the site supervisor and program instructors.

S01-B133  Literature Review 2
This second literature review allows students to read publications related to the field of interpretation over and above those discussed in various program courses.

S01-B134  ASL 1
This is the first of five courses in ASL for ASL/English interpretation students and is the introductory ASL course for students at the interpreter level. Students are introduced to the classroom structure and teaching methodologies and study appropriate ways of communicating in ASL (discourse), along with facets of the Deaf community such as cultural aspects, minority/majority group dynamics and oppression. A variety of topics pertinent to training interpreters is used as a basis for building vocabulary and sentence structure, with direct application to communicating within a group.

S01-B135  ASL 2
This is the second of five courses in ASL for ASL/English interpretation students. This course continues with and expands upon the material introduced in ASL 1 S01-B134.

S01-B137  Building Translation Skills – English
This is the first of three courses that give practice in prerequisite skills for both consecutive and simultaneous interpretation. This first course deals exclusively with English. The second course will focus on ASL and the third course will incorporate both English and ASL. Skills are built through practice in various translation exercises. This course focuses on listening/reading for meaning, phonemic and phrase shadowing, paraphrasing, abstracting, closure and shifting from register to register.

S01-B138  Culture and Ethnology 2
This course focuses on case studies of cultural/ethnic groups. Students complete individual projects consisting of a written paper and an in-class presentation on either a particular cultural group or comparing aspects of two cultural groups.

S01-B139  Building Translation Skills – ASL
This is the second of three courses that give practice in prerequisite skills for both consecutive and simultaneous interpretation. Whereas the first course dealt only with English, this second course is concerned with practice in manipulating ASL. The third course will consist of exercises that incorporate both English and ASL. Skills are built through practice in various translation exercises. This course focuses on comprehension of signed material, phonemic and phrase shadowing, abstracting, paraphrasing, closure and shifting from register to register.
SO1-B140 Ethics 1
This is the first of two courses in ethics for ASL/English interpretation students. This first course introduces students to several theories of moral development and how they apply to the need for ethical standards and practices in the field of interpretation. A historical perspective is also studied, along with comparison of current thought in this area.

SO1-B141 ASL 3
This is the third of five courses in ASL for ASL/English interpretation students. This course continues with and expands upon the material presented in ASL 2 S01-B135 and introduces more complex principles of language usage in ASL.

SO1-B142 Building Translation Skills – English/ASL
This is the third of three courses that give practice in prerequisite skills for both consecutive and simultaneous interpretation. Whereas the first course dealt only with English and the second with ASL, this third course consists of exercises that incorporate the manipulation of both English and ASL. Skills are built through practice in various translation abstracting, closure and shifting from register to register cross-language.

SO1-B143 Interpretation Lab 1 — Consecutive Interpretation
This is the first interpretation lab for ASL/English interpretation students. In this lab, students work on consecutive interpretation exercises in small groups.

SO1-B144 Practicum 1 – Observation Practicum
This is the first of three practicum experiences in the two-year ASL/English interpretation program. Students are able to observe interpreters working in the field once a week. In addition, students meet together once weekly to discuss their experiences.

SO1-B145 ASL 4
This is the fourth course in the series of five courses for ASL/English interpretation students. Along with further expansion of principles previously taught and practiced, students are given course work to give them practice in lengthier discourse both with other members of a group and with individual presentations.

SO1-B146 Ethics 2
This is the second in a series of two courses in ethics for ASL/English interpretation. Students discuss ethical issues and problem solving based on case studies presented in class.

SO1-B147 Interpretation Lab 2 – Consecutive English to ASL
In this interpretation lab students continue their practice of consecutive interpretation by interpreting students' prepared presentations. Students are paired to allow practice of some team interpreting techniques. Students are videotaped and participate in class critiques.

SO1-B148 Interpretation Lab 3 – General Practice
This is a general practice lab in which students participate in English/ASL interpretation situations. These may take the form of role plays, videotaped, audiotaped or written scenarios brought in by the instructor or prepared materials brought in by each student.

SO1-B149 Interpretation Lab 4 – Consecutive Interpretation
This course allows students to continue practicing their developing skills in Consecutive Interpretation in English to ASL, ASL to English and in interactive situations.

SO1-B150 Interpretation Lab 7: Simultaneous English to ASL
This is an interpretation lab that allows students practice in simultaneous interpretation with a live presenter, working from English to ASL. Emphasis is on working as a team member, preplanning for interpretation and simultaneous interpretation.
S01-B151 Practicum 2
This is the second of three practicum experiences in the two-year ASL/English interpretation program. Students attend some interpreting assignments to observe other interpreters' work, team with professional interpreters in the field or team with other ASL/English interpretation students under certain circumstances.

S01-B152 Deaf History
This course introduces students to the history of the Deaf community. Topics are covered through lectures and discussion of various Deaf organizations. Students will be required to do research on Deaf organizations and present their research in class.

S01-B155 Introductory Linguistics for Interpreters
This is an introductory course in linguistics for ASL/English interpretation students. Students are introduced to basic topics in linguistics and look at a variety of languages that exemplify the concepts being discussed.

S01-B156 Introduction to the Interpreting Field
This course is designed to introduce the student to historical and contemporary perspectives of the interpretation field. Topics included are the history of spoken and sign language interpretation, related terminology, models of interpretation and discussion of the communication and interpretation process.

S02-C116 Reading and Study Skills (Part-time)
This course concentrates on the following: 1. Increasing reading comprehension and vocabulary, 2. Developing time management skills, 3. Developing techniques for reading textbooks, 4. Developing note taking skills, 5. Preparing for exams.

S02-CC122 English 300
This course will give students credit for English 300. The content focuses on English and analytical skills. Students will study technical skills and read a variety of literature.

S02-D100 Writing Skills
This course examines sentence and paragraph construction, usage and mechanics. The following topics comprise this course: Sentence Structure A S02-D101, Sentence Structure B S02-D102, Usage S02-D103, Punctuation and Capitalization S02-D104, Sentence Writing S02-D105 and Paragraph Writing S02-D106. Standing is achieved in this course by passing a comprehensive test on all these topics.

S02-D101 Sentence Structure A
The study of the sentence begins with finding verbs and their subjects, identifying sentences and fragments and identifying principal and subordinate clauses.

S02-D102 Sentence Structure B
The study of the sentence continues with identifying sentences, fragments and run-ons, using correct coordination and subordination to join ideas and identifying different sentence types (compound, complex and simple).

S02-D103 Usage
Three main areas are covered: having the verb agree with the subject, using the correct form of various irregular verbs and distinguishing between pairs of commonly confused verbs.

S02-D104 Punctuation and Capitalization
Punctuation topics include the correct use of the period, question mark, comma and apostrophe. Capitalization rules include proper nouns, organizations, brand names and titles. Situations in which capitals are to be avoided, such as family relationships and occupations, are also studied.
S02-D105  Sentence Writing
This section deals with sentence construction. Notes or ideas for sentences are supplied. These ideas
must be combined in such a way that the sentences constructed correctly express the relationship
among the ideas or notes.

S02-D106  Paragraph Writing
Paragraphs are constructed using a set of supplied notes or ideas. The ideas must be joined in such a
way that they show the correct relationship among the ideas.

S02-D201  Writing Supplement
This course covers such topics as outlining, topic sentence and paragraph construction.

S02-D210  Reading
This course is designed to improve reading comprehension, vocabulary and reading rate. A variety of
materials are used.

S02-D220  Study Skills
A variety of study skills topics are covered. These include time management, textbook reading, pre-
paring for tests and taking them, memory improvement techniques, listening and note taking and
critical thinking.

S02-D230  Spelling Core
The core spelling course consists of basic spelling words. Long and short vowels, other letter combi-
nations and blends are used in teaching the basic word list. Some rules are also introduced.

S02-D231  Spelling Supplement
This course is designed for entry into the secretarial and business programs. It is required for entry
into the Adult 11 programs. It consists of more advanced words and deals with prefixes and suffixes.

S02-D240  Computer Awareness Training – Core
This course introduces students to computers. No previous experience is required. The course covers
the keyboard, some DOS functions and basic computer operations.

S02-D241  Computer Awareness Training – Keyboard
This course teaches the keyboard and touch typing. Some WordPerfect 5.1 is also included.

S02-D300  Mathematics Core
This course consists of the following: Whole Numbers S02-D301, Fractions S02-D302, Decimals
S02-D303, Ratio and Proportion S02-D304, Percent S02-D305 and Measurement S02-D306. To
achieve a standing in this course, a comprehensive test covering all these topics must be passed.

S02-D301  Whole Numbers
This course deals with reading, writing and rounding off whole numbers. Whole numbers are used in
addition, subtraction, multiplication and division, order of operations and word problems.

S02-D302  Fractions
This course begins with the concept of fractions and reading and writing them. Fractions are used in
addition, subtraction, multiplication and division, order of operations and word problems.

S02-D303  Decimals
The concept of decimals is introduced. Reading, writing and rounding off decimals are studied. Deci-
mals are used in addition, subtraction, multiplication, division, order of operations and word problems.

S02-D304  Ratio and Proportion
This course involves the concepts of ratios and proportions and uses them to solve word problems.
S02-D305 Percent
This course involves identifying percents, changing decimals and fractions to equivalent percents, converting percents to equivalent decimals and fractions and solving word problems using percent, including simple interest problems.

S02-D306 Measurement
This course involves both metric and English liquid, weight, time and distance measurements.

S02-D420 Mathematics Supplement
This course consists of the following options: Hand-Held Calculator S02-D421, Algebra 1 S02-D422, Algebra 2 S02-D423, Graphs S02-D424, Algebra Problems S02-D425, Geometry 1 S02-D426 and Geometry 2 S02-D427. The number of options required for standing depends on the program for which the student is preparing. For entry into all Adult 11 programs, standing is achieved by passing a comprehensive test.

S02-D421 Hand-Held Calculator
This course introduces students to the basic functions of a hand-held calculator. Decimals, fractions, square root, and various formulae are taught.

S02-D422 Algebra 1
This course deals with basic algebra concepts such as integers, including calculations with positive and negative numbers, basic terminology, exponents, powers and bases, calculations with polynomials and solving equations with one unknown.

S02-D423 Algebra 2
This course deals with solving equations with one unknown.

S02-D424 Graphs
This course involves construction and interpretation of linear, bar, broken-line and circle graphs. Linear equation graphs and tables of values are also involved.

S02-D425 Algebra Problems
The prerequisites for this course are Algebra 1 S02-D422 and Algebra 2 S02-D423. This course involves using algebra to solve word problems dealing with numbers, ages, rectangles, digits, mixtures, ratios and money.

S02-D426 Geometry 1
This course involves geometric terminology, angle and line construction, circle construction and analysis and construction and analysis of triangles and polygons.

S02-D427 Geometry 2
The prerequisite for this course is Geometry 1 S02-D426. This course deals with determining the perimeter, area, volume and surface area of various geometric shapes including triangles, squares, circles, spheres, cones, etc.

S02-D500 Science
This course consists of the following options: Measurement S02-D501, Matter and Energy S02-D502, Heat AB S02-D503, Heat C S02-D504, Electrical Energy S02-D505, Mechanical Energy S02-D506, Life Science A S02-D507, Chemistry C S02-D508 and Life Science B and C S02-D509. The options selected are determined by the program for which the student is preparing. For entry into Adult 11A/C, standing is obtained after passing a comprehensive test.
S02-D501 Measurement
This course introduces the metric system (SI) of measurement and encourages the usage of common units such as those of distance: meters, kilometers, etc., mass: grams, kilograms, etc., volume: liters, kiloliters, milliliters, etc., temperature: Celsius degrees. It develops concepts of size in the metric system through laboratory experiments and exercises. It also develops a simple and convenient method of conversions within the metric system.

S02-D502 Matter and Energy
This course develops an understanding of the composition and structure of matter, the periodic table, the states, properties and changes of matter, the nature and sources of energy, and the types and forms of energy.

S02-D503 Heat A B
The course develops an understanding of the nature of heat energy and its sources, the methods of heat transmission and the conversion of heat energy.

S02-D504 Heat C
This course introduces concepts and definitions necessary for solving problems including temperature conversions from Fahrenheit to Celsius degrees and vice versa, quantity of heat gained or lost by a material, conversion of heat energy to mechanical energy and vice versa and linear and volume expansion of solids and liquids.

S02-D505 Electrical Energy
This course introduces concepts of static electricity through a study of the nature of charges and some of their effects. It develops an understanding of electric current, electrical circuits and related terminology. This includes a treatment of Ohm’s Law and its application to simple series and parallel circuits, electrical power and cost of electrical energy. It develops the basic concepts of magnets, magnetic fields and electromagnets. The principles of electromagnetic theory are used to illustrate how the following devices operate: electric bell, telephone, transmitter, broadcasting antenna and receiving antenna, simple AC generator and step-up and step-down transformers.

S02-D506 Mechanical Energy
This course develops concepts of work, energy, power mechanical advantage, efficiency and related terminology. It develops methods of solving problems based on work, power, law of machines, efficiency and mechanical advantage. It applies concepts of work, power, efficiency, mechanical advantage and problem solving techniques to each of the following types of simple machines: lever, incline plane, wheel and axle, pulleys, wedge and screws.

S02-D507 Life Science A
This course develops basic concepts of cell structure and chemical activity with a “typical” cell. It describes the structure, method of infection and ways of reducing or preventing damage caused by each of the following: viruses, bacteria, fungi, bugs and worms.

S02-D508 Chemistry C
This course introduces valence, writing and naming of compounds, shows how to balance equations, discusses acids, bases and buffers, defines pH and introduces the pH scale.
S02-D509  Life Science B and C
B: This course describes the structure and functions of each of the following: nervous, skeletal, muscular, circulatory, digestive, respiratory, endocrine and reproductive systems.
C: This course covers electricity: explains the difference between conductors and insulators, discusses static and current electricity and explains the operation of the Voltaic cell; light: discusses the electromagnetic spectrum, lenses and the human eye; heat: discusses the difference between heat and temperature, discusses conditions which alter freezing and boiling points; pressure: discusses standard, negative and positive pressure and osmosis; machines: explains simple machines; solutions: explains and shows how to solve problems involving molarity and weight.

S02-D999  Grading System  C=80, B=85, A=90, A+=95.
Grading system (SV) Adult 10.

S03-K001  Communications
These topics are studied: subject-verb agreement, punctuation, sentence faults and sentence and paragraph construction.

S03-L01  Mathematics
The course has these topics: fundamental concepts in algebra, first degree equations, products and factoring, algebraic fractions, exponents and radicals, quadratic and simultaneous equations, mensurational and analytical geometry, ratio and proportion, trigonometry, sine waves and radians and logarithms.

S03-L02  Science (Chemistry)
The topics covered include the physical and chemical characteristics and states of matter, elements, compounds and mixtures, atomic structure and the periodic table, valence, formula writing and molecular calculations.

S03-M01  Science (Physics)
This course examines matter and energy, force measurement, motion, atomic structure, energy and machines, heat, direct current, magnetism and electrostatics.

S03-N001  Business Communications
This course deals with a variety of grammar and punctuation topics including subject-verb agreement, phrases and clauses, sentence faults, pronoun usage, verbs, modifiers and parallel structure. Paragraph writing is studied. Oral presentations are also included.

S03-N003  College Study Skills
This course is designed to teach the SQ3R study system, develop time management, improve the ability to concentrate and to remember facts, take useful notes from lectures, get involved in class discussions and prepare for examinations.

S03-N005  Basic WordPerfect
Designed to introduce students to the WordPerfect word processing program. It concentrates on familiarizing students with the basic WordPerfect functions.

S03-N006  Computer Keyboarding
Designed to prepare students to use touch-typing techniques on a typewriter keyboard. It concentrates on familiarizing students with letters, symbols and numbers of the typewriter keyboard.

S03-O001  Business Mathematics
The topics covered in this course include basic calculations using a financial calculator, graphs, payroll calculations, basic algebra, ratio, proportion and percent business applications such as pricing and simple interest, compound interest including present and future value, annuities and amortization, simple accounting procedures, inventory calculations and depreciation.

C - 125
S03-P001 Business and Consumer Fund
This course covers a wide variety of topics: government revenue including personal income tax preparation, the structure of Canadian government, such law topics as civil, torts, contracts and consumer issues, forms of business organization: sole proprietorship, partnership and corporations, and stocks and bonds.

S03-Q001 Communications
Grammar, usage, sentence structure, mechanics, paragraph and essay writing.

S03-R001 Mathematics 301
These topics are included in the course: fundamental concepts, first degree equations, products and factoring, formulae, functions and factorials, algebraic fractions, exponents and radicals, quadratic equations, simultaneous equations, mensurational and analytical geometry, ratio and proportion, trigonometry, the laws of sines and cosines, trigonometric identities, sine waves and radians and logarithms.

S03-R002 Mathematics 300
These topics are included in the course: fundamental concepts, first degree equations, products and factoring, formulae, functions and factorials, algebraic fractions, exponents and radicals, quadratic equations, simultaneous equations, sequences and series, graphing equations, analytic geometry, ratio and proportion, trigonometry, the laws of sines and cosines, trigonometric identities, sine waves and radians and logarithms.

S03-S001 Science – Physics 300
This course covers these topics: matter and energy, measurement, force, magnetism, motion, energy and machines, direct current, atomic structure, kinetic theory, heat, electrostatics, vectors and electromagnetic induction.

S03-S002 Science – Chemistry 300
These topics are included: matter, elements, compounds and mixtures, atomic structure and the periodic table, valence and molecular calculations, chemical reactions, acids, bases and salts, solutions and organic compounds and hydrocarbons.

S03-S003 Science – Biology 300
This course covers the following topics: gene action, genetics, photosynthesis, cellular respiration, microscope technique, variety in animals, variety in plants, angiosperms and evolution.

S03-S004 Pre-Nursing Science
Teaches the required science concepts and theory in biology and physics for nursing students.

S05-A020 Speaking Skills
Development of the student’s speaking ability in both formal and informal situations. Emphasis is on pronunciation, general conversation, discussion of opinions, comprehension and use of idioms in conversation and development of a theme in weekly oral presentations.

S05-A021 Spelling
The required lessons (1-22) from the Red River Community College basic and supplementary spelling program will be studied (according to the student’s college goal). Emphasis is on correct spelling of commonly used English words, pronunciation of these words, common spelling rules, definitions of words and study of word forms.

S05-A023 Reading
Development of reading methods to improve the student’s reading efficiency. Emphasis is on reading, comprehension, vocabulary development, reading rate, listening comprehension and study skills.
S05-A024 Writing
The student’s writing ability will be developed. Emphasis is on sentence types, sentence combining and sentence writing with the ability to communicate notions by means of grammatically correct sentences employing elements of coordination, subordination and punctuation effectively.

S05-A025 Grammar
Development of knowledge of English grammar and usage with emphasis on correct grammatical usage, identification and functions of parts of speech, concepts and usage of coordination and subordination, an adaptation of formal grammar skills to communication and writing situations.

S05-A028 Listening
The listening skills of the student will be expanded to improve the aural comprehension of students. Emphasis is on comprehending and reproducing information, determining and reproducing information, making conclusions based on information heard and following aural directions.

S05-A107 Speaking
The students will participate in class discussions, make oral presentations to the class, paraphrase short lectures or visual presentations, interview someone in their field or a student studying in their field and report to the class, make impromptu short speeches on relevant topics and study and discuss common English idioms.

S05-A108 Listening
The students will practice discriminating specific sounds and word boundaries, listen to short lectures, guest speakers, video and audio cassettes and answer questions based on the information, discuss the topic and paraphrase and summarize information.

S05-A109 Reading
The students will read scientific-based material and examine the structure, style, terminology, vocabulary and content, answer comprehension questions, discuss the content and do vocabulary development exercises to practice a variety of reading strategies such as finding main ideas, inferring and drawing conclusions. Students will study the derivations of vocabulary commonly used in the field of science and technology.

S05-A110 Grammar
The students will study verb tenses, conditionals, active/passive voice, modals and parts of speech, practice recognizing and using the grammatical forms in grammar exercises, oral presentations, journal writing and listening exercises.

S05-A111 Writing
The students will practice writing grammatically correct sentences and study a variety of sentence types, study how to develop individual sentences into cohesive paragraphs, write short reports and journals and study styles and functions of scientific writing.

S05-A112 Spelling
The students will study commonly used English words, examine common English spelling patterns, take dictations and write spelling tests.

S05-B001 Guided Work Experience
With the assistance of the instructor, each student will negotiate a three-week guided work experience to take place toward the end of the program. The students will observe and participate in a local business under the guidance of an employer or employee in the business. The student, the instructor and the work experience supervisor will jointly evaluate this component.
S05-B002 Business Topics
The student will learn how to access community resources for business. The student will also become familiar with functional areas and various issues related to business.

S05-B003 Speaking
The student will make oral presentations to the class; participate in simulations of business meetings, discussions and negotiations, practice "telephone" English and learn common idioms and gambits for informal conversation. The student will also develop an awareness of cultural patterns in oral communication, such as non-verbal communication and appropriate levels of formality and informality.

S05-B004 Writing
The student will work on various forms of written business communications such as letters, memos and faxes. The student will study and practice appropriate business styles of writing and the structures used for the various forms. The student will also develop an awareness for cultural factors and typical business English discourse patterns.

S05-B005 Listening
The student will develop comprehensive skills by listening to guest speakers and taped presentations on business issues. The student will also do specific listening exercises in the language laboratory to develop more specific skills such as making notes of detailed information received over the telephone.

S05-B006 Reading
The student will read business-oriented materials and note discourse patterns, style, terminology and content. The student will study and practice strategies for reading authentic business articles, such as understanding main ideas and supporting details, determining the meaning of new vocabulary from context and inferring and drawing conclusions.

S05-B007 Spelling/Vocabulary Development
The student will study commonly used English words, examine common English spelling patterns, take dictations and write spelling tests.

S05-B008 Grammar
The student will examine structures commonly used for business communication and typical business English discourse patterns. The student will review parts of speech and verb tenses in the business context as required.

S05-E422 Writing Skills
The student will develop the writing skills necessary to write a simple sentence, to complete a variety of forms and to develop a basic resume.

S05-E423 Reading Skills
The student will develop a basic vocabulary and he/she will be able to perform practical reading tasks which include reading want ads, street signs, simple directions and consumer information.

S05-E424 Grammar Skills
The student will develop an understanding of the basic structures of the English language. He/she will be able to form basic questions and answers using the appropriate verb tense.

S05-E425 Speaking and Listening Skills
The student will be able to participate in a conversation where minimal language skills are required and which falls within the framework of the following topics: 1. personal information, 2. orientation of living in Canada, 3. language learning in the classroom, 4. health, 5. social interaction and leisure activities, 6. services, 7. shopping/buying food, clothing, other items, 8. work, 9. transportation/weather.
S05-E434 Listening and Note Taking
The students will listen to passages and take notes on the passages. The students will answer questions based on the passages and/or paraphrase the passages. These passages will vary in type and length from short radio news reports to lectures.

S05-E435 Reading
The student will determine the meaning of pre-selected unfamiliar words by studying the context in which the words are used, supply an appropriate ending to a written passage, read specific paragraphs and then determine main ideas, draw conclusions and/or answer fact questions, read paragraphs and answer questions, listen to recorded stories and answer questions, read specified words, read a cloze passage and supply appropriate words in blank spaces, read longer stories and answer comprehension questions based on analysis and relationship ideas and interpretation of words and meaning of passages.

S05-E436 Spelling
The students will write down (with a minimum of errors) a short passage that has been dictated. The passages will be taken from articles studied during the course.

S05-E437 Conversation and Oral Presentation
Students will demonstrate their conversational ability by listening to passages or lectures and then explaining in their own words what they have heard. Students will also make oral presentations to their class on topics of their own choice.

S05-E438 Grammar
The students will study a wide variety of aspects of English grammar and demonstrate their ability by filling in blanks, writing grammatically correct sentences and by writing short essays.

S05-E439 Writing
The students' writing skills will be developed. The students will demonstrate their ability by writing grammatically correct sentences, logically ordered expository paragraphs and short essays.

S05-E440 Preparation for TOEFL
The students will prepare to write the Test of English as a Foreign Language. Preparation will include error identification and correction, listening, structure and written expression, vocabulary and reading comprehension development and grammar practice.

S07-W101 Advanced Welding
Basic principles in theory and practical as required in production welding.

T01-A025 Safety
Students will be taught personal, shop and environmental safety, as well as safety procedures in the handling of hazardous materials and the use of tools.

T01-A026 Welding
Students will learn safe working procedures with different welding techniques. Also, students will learn practical application of gas and MIG welding systems and gas and plasma cutting techniques.

T01-A028 Basic Metal Working
In this section, the student exercises theoretical knowledge of metal straightening on various damaged projects which also provide the opportunity to develop practical skills in metal straightening, shrinking, filling and proper use of tools.

T01-A031 Advanced Metal Working and Rust Repair
Students will be repairing more severe and complicated sheet metal damage and develop metal shaping skills in forming and installing rust repair patches.
T01-A032 Frame Repair and Estimating
Students will be instructed in the use of frame measuring equipment to identify different frame damages and how they relate to poor body fits. Also, students will be able to interpret a repair estimate as to time allowed and cost of repair.

T01-A033 Major Body Alignment, Weld-on Panel Replacement
Students will be instructed in identifying different types of body opening and/or body panel misalignments and methods of adjusting to obtain proper alignment. Also instructed will be skills involved in the removal and replacement of welded-on components.

T01-A058 Vehicle Construction, Hardware, Glass and Trim
Students will be able to remove and replace bolt-on functional and nonfunctional parts. Also, the students will become familiar as to the different types of body and frame design and construction. Included in this segment is the removal and replacement auto glass, door components and interior trim.

T01-A059 Hand Tools, Power Tools and Hydraulic Equipment
Students will be able to identify, select, use and maintain hand and portable power tools required for the repair of motor vehicles. Instruction in safe usage of both hand and power tools is stressed in this segment.

T01-A060 Basic Refinishing Preparation
In this segment, the students will be able to prepare panels for refinishing using the proper products, equipment and procedure. This would include spraying undercoats, using glazing putty and levelling.

T01-A061 In-Industry Training 1
Students are placed in body shops where they are exposed to the actual demands of the trade in a true work environment where there are pressures such as speed and in some cases confined space. It is the intent of this segment that by actually working or helping in shops, they will have a more realistic view of what will be expected of them upon entering this field of work.

T01-A062 In-Industry Training 2
Students are placed in body shops where they are exposed to the actual demands of the trade in a true work environment where there are pressures such as speed and in some cases confined space. It is the intent of this segment that by actually working or helping in shops, they will have a more realistic view of what will be expected of them upon entering this field of work.

T01-A063 In-Industry Training 3
Students are placed in body shops where they are exposed to the actual demands of the trade in a true work environment where there are pressures such as speed and in some cases confined space. It is the intent of this segment that by actually working or helping in shops, they will have a more realistic view of what will be expected of them upon entering this field of work.

T01-A064 Fiberglass and Flex Panel Repair
Students, upon completion, will be able to repair flexible components as well as make repairs to fiberglass components of automobile and truck bodies.

T01-A065 Collision Repair Projects
The students will be able to repair minor collision damage taken in from the general public. The intent is to have the students apply all previously learned skills (manual and theoretical), from start to finish, on one small project, or as many as their skills permit.

T01-A066 Refinishing and Topcoating
In this segment, the students will be able to apply topcoats used in the trade today. Personal protection and safe handling of hazardous products is emphasized.
**T01-C026 Automotive Service Fundamentals – Theory**
The student will become knowledgeable in all aspects of personal and shop safety including WHMIS. Also taught are introductions to vehicle systems such as engine, drivetrain, chassis and electrical.

**T01-C027 Automotive Service Fundamentals – Practical**
The student will apply all safety measures as outlined in Automotive Service Fundamentals – Theory T01-C026. Practical training will consist of work on automobile training components. Lab work.

**T01-C029 Engines and Related Systems – Theory**
The student will receive classroom instructions in engine construction and operation, fuel systems operation and diagnosis, fundamentals of electricity and electronics, ignition systems and emission controls.

**T01-C030 Engines and Related Systems – Practical**
Practical application of Engines and Related Systems – Theory T01-C029 on automobile training components. Lab work.

**T01-C032 Drivetrain – Theory**
The student will receive classroom instructions on the construction, operation and diagnosis of standard and automatic transmissions/transaxles as well as clutches, drivelines and differentials.

**T01-C033 Drivetrain – Practical**
Practical application of Drivetrain – Theory T01-C032 on automobile training components. Lab work.

**T01-C034 Chassis: Suspension, Steering, Brakes – Theory**
The student will receive classroom instructions in the construction operation and diagnosis of suspension, steering and brake systems.

**T01-C035 Chassis: Suspension, Steering, Brakes – Practical**
Practical application of Chassis: Suspension, Steering, Brakes – Theory T01-C034 on automobile training components. Lab work.

**T01-C036 Electrical – Theory**
The student will receive classroom instructions in electrical circuitry as applied to the automotive trade including starting and charging systems.

**T01-C037 Electrical – Practical**
Practical application of Electrical – Theory T01-C036 on automobile training components. Lab work.

**T01-C041 Work Experience 1**
Work Experience 1 will consist of vehicle pre-delivery inspections and/or light maintenance work under supervision of experienced industry personnel.

**T01-C042 Work Experience 2**
Work Experience 2 consists of diagnosis and repair of engine and related systems under the supervision of experienced industry personnel.

**T01-C043 Work Experience 3**
Work Experience 3 will consist of diagnosis and repair of drivetrain and chassis components under supervision of experienced industry personnel.

**T01-D019 Automatic Transmission – Theory**
The theory of operation of repair and overhaul of automatic and powershift transmissions.
T01-D020 Automatic Transmission — Practical
The repair and overhaul of automatic and powershift transmissions.

T01-D036 Industrial Training — Practical
Students are placed in an industrial repair shop to receive first hand, practical demands that are required to be successful in this trade.

T01-D037 Introductory Mechanics — Theory
Demonstrate the ability to identify and use correctly the hand tools utilized in the HD mechanics trade.

T01-D038 Introductory Mechanics — Practical
Students will learn, through first-hand involvement, of on-the-job working conditions found in a live repair shop.

T01-D039 Standard Transmissions — Theory
Construction, principle of operation, synchronizers, splitters, air shift, variable speed diesels, four-wheel drive transfer case, farm tractor transmission, reversing transmissions, transmission overhaul.

T01-D040 Standard Transmissions Overhaul — Practical
Inspection, repair and overhaul of: synchronizers, splitters and air shift, variable speed diesels, four-wheel drive transfer case, farm tractor transmission, reversing transmissions.

T01-D041 Rear Axles — Theory
Types and principles of operation, single speed HD Eaton rear axles, traction equalizers, power dividers, electric and air shift systems.

T01-D042 Rear Axles — Practical
Overhaul of single speed HD Eaton rear axles, traction equalizers, power dividers, electric and air shift systems.

T01-D043 Brake Systems — Theory
Theory of operation, repair and adjustment of hydraulic, manual and power brakes, air brake repairs, adjustments and maintenance, lubrication of diesel powered equipment.

T01-D044 Brake Systems — Practical
Operation, repair and adjustments of hydraulic, manual and power brakes, air brake repairs. Adjustments and maintenance, lubrication of diesel powered equipment.

T01-D045 Gas Engine Overhaul — Theory
Theory of gas engine cycles, types, components, lubrication and cooling systems.

T01-D046 Gas Engine Overhaul — Practical
Repair of gas engine cycles, type, components, lubrication and cooling systems.

T01-D047 Diesel Engine Overhaul — Theory
Theory of servicing diesel cylinder block assembly, cylinder head and valve train.

T01-D048 Diesel Engine Overhaul — Practical
Repairs and servicing of diesel cylinder block assembly, cylinder head and valve train.

T01-D049 Hydraulic Components — Theory
Theory of operation and repair of the more common mobile hydraulic systems.

T01-D050 Hydraulic Components — Practical
Operation and repair of the more common mobile hydraulic systems.
TO1-D051 Electrical Systems – Theory
Fundamentals of: storage, testing, charging and care of batteries, DC and AC generators and regulators, ignition systems, transistor units.

TO1-D052 Electrical Systems – Practical
Storage, testing, charging, and care of batteries, DC and AC generators and regulators, ignition systems, transistor units.

TO1-D053 Fuel Systems – Theory
Fundamentals of: carburetion, types and methods of supercharging, principles of compression ignition engine and inspection and complete servicing of pumps and nozzles.

TO1-D054 Fuel Systems – Practical
Carburetion, types and methods of supercharging, principles of compression ignition engine and inspection and complete servicing of pumps and nozzles.

TO1-D055 Steering Systems – Theory
Classroom theory would consist of basic steering geometry, component materials, caster, camber, understanding terminology and troubleshooting front end problems such as pulling, shimming and hopping.

TO1-D056 Steering Systems – Practical
The student will remove and overhaul steering boxes, as well as doing front end alignment, toe-in, etc.

TO1-D057 Suspension and Components – Theory
Understanding of the different types of suspension, the problems that can occur on the suspension. This would include, rear-end alignment, wheel cupping, air-ride components and walking beam bushing on the Hendrick's suspension.

TO1-D058 Suspension and Components – Practical
The student will be able to differentiate between the many styles of suspensions and be able to diagnose and repair. The styles range from Hendricks to Neway air-ride suspensions.

TO1-G011 Service Manuals
Use service manuals to identify and interpret V1 numbers, locate and interpret services information and interpret repair procedures.

TO1-G013 Electronic Information, Storage and Retrieval Systems
Use electronic systems to access technical service bulletins, service information and repair procedures.

TO1-G015 Automotive Electrical and Electronics
Explain the advantages of using electronic control systems. Describe how semiconductors, diodes and transistors work. Explain the function of sensors and actuators, read automotive electrical diagrams, name the various memory systems used in the automotive system and identify the proper procedure to safeguard electronic systems.

TO1-G017 Introduction to Computer Systems
Identify and explain computerized engine control systems and their components. Explain the operation of the various input and output sensors and actuators and understand the self-diagnostic systems.

TO1-G019 Electrical Diagnosis
Isolate computerized engine control problems. Activate self-diagnostic systems and retrieve trouble codes.

TO1-G020 Practical Training in Industry
Practical training in industry where the emphasis should be on areas of learning in the first six weeks of in-school training.
T01-G020 Practical Training in Industry
Practical training in industry where the emphasis should be on areas of learning in the first six weeks of in-school training.

T01-G021 Electronic Fuel Injection Systems – Domestic
Explain the principles of operation of electronic fuel injection. Explain the design and function of TBI and PFI systems. Service fuel injection systems.

T01-G023 Electronic Fuel Injection Systems – Import
Explain the principles of operation of the CIS fuel injection system. Explain the function of CIS system components. Service import fuel injection systems.

T01-G025 Introduction to Diesel Fuel Injection Systems
Explain the principles of operation of diesel fuel injection systems. Identify system components and their function. Perform minor service checks.

T01-G027 Emission Controls
Identify the emissions being controlled in the modern gasoline engine. Describe the function and operation of the emissions control system and its components. Diagnose and service emission control systems.

T01-G029 Automotive Performance Diagnosis
Understand and use meters, ignition test equipment, compression and vacuum testers, fuel system testers, exhaust analyzers and microcomputer scan tools.

T01-G030 Practical Training in Industry – 2
Practical training in industry where the emphasis should be on the areas of learning in the second six weeks of in-school training.

T01-G031 Advanced Steering and Suspension Systems
Explain the principles of operation of electronically controlled suspensions, active suspensions, four-wheel steering, electronically controlled power steering and identify their components. Understand service precautions associated with these systems.

T01-G033 Advanced ABS and Traction Control
Identify the various types of ABS systems. Explain the principles of operation of the various types of ABS systems and identify their components. Diagnose and test ABS systems. Explain the principles of operation of traction control systems. Diagnose and test traction control systems.

T01-G035 AC System Diagnosis and Service
Explain the theory of operation of automotive air conditioning systems. Identify system components and explain their function. Understand environmental precautions when testing or servicing AC systems. Test and service AC systems and maintain servicing equipment.

T01-G037 Supplemental Restraints
Explain the principles of operation of S.I.R. systems and the precautions to be observed when servicing. Identify system components and perform diagnostic and test procedures.

T01-G040 Practical Training in Industry – 3
Practical training in industry where the emphasis should be on the areas of learning in the third six weeks of in-school training.

T01-T011 Shop Safety and Hand Tools – Theory
Theory of use of hand tools, measuring instruments, use of special equipment: hoist, jacks and stands, safety chassis, lubrication and servicing. Uses of special lubrication, light servicing, tire repair.
T01-T012  Shop Safety and Hand Tools – Practical
Use of hand tools, measuring instruments, use of special equipment: hoists, jacks and stands, safety, chassis lubrication and servicing, using special lubricants, light servicing, tire repair.

T01-T015  Electrical Systems – Theory
Wiring diagrams and circuits, generators, regulators, cranking motors, solenoids and switches, gauges, ignition systems, etc.

T01-T016  Electrical Systems – Practical
Disassembly, testing, repairing and reassembly of electrical components, attaching and use of testing meters and electrical diagnostic equipment.

T01-T017  Fuel Systems – Theory
Carburetors, fuel pumps, filters, gas lines, fuel tank ventilation, exhaust emission controls and air cleaners.

T01-T018  Fuel Systems – Practical
Disassembly, cleaning, assembly and calibration of component units. Use of diagnostic test equipment and meters.

T01-T019  Tune Up – Theory
Tune-up machines, compression and vacuum gauges, ignition circuits, carburetor adjustments, gas analysis, engine performance, testing and operation.

T01-T021  Standard Transmissions – Theory
Clutch and pressure plate assemblies, three- and four-speed synchromech transmissions, simple planetary gears and overdrive, construction, operating and service fundamentals.

T01-T022  Standard Transmissions – Practical
Disassembly, inspection of parts and reassembly of components to manufacturer’s specifications.

T01-T023  Rear Axles and Drivelines – Theory
Gears and bearings, tooth patterns, universal joints, propshafts and limited slip differentials, transaxles, axle shafts, etc.

T01-T025  Brakes – Hydraulic – Theory
Hydraulic principles, single and dual master cylinders, brake lines and couplings, wheel cylinders, drum brakes and machining drums, disc brakes and machining rotors, power units, controls and switches, bearings, seals and brake fluid.

T01-T026  Brakes – Hydraulic – Practical
Disassembly, inspection, honing and machining, assembly and bleeding of hydraulic system. Testing and repairing of lower units and adjustment of cable brake systems.

T01-T027  Steering and Suspension – Theory
Springs, shocks, wheel balance, steering geometry, steering gears, steering alignment.

T01-T028  Steering and Suspension – Practical
Removal and installation procedures on suspension components, steering gear, power assist units and pumps. Calibrating by use of special machines so suspension and wheels are in proper relation to frame of vehicle.

T01-T029  Automatic Transmissions – Theory
Fluid couplings and torque converters, compound planetary gears, clutches, bands, servos and hydraulic system, construction, operating and service fundamentals.
T01-T030 Automatic Transmissions — Practical
Disassembly, inspection, reassembly and adjusting assemblies, subassemblies and component units. Pressure testing with air and hydraulic fluid.

T01-T032 Engine Construction and Operation — Theory
Fundamental operating, construction and design features and characteristics of two-stroke and four-stroke cycle internal combustion engines. Fundamental services, maintenance and overhaul methods and procedures, precision measuring, diagnosis and correction of automotive engine problems.

T01-T033 Engine Construction and Operation — Practical
Fundamental services, maintenance, disassembly, precision measuring and reassembly of a gasoline engine according to manufacturer's specifications.

T01-T056 Electrical — Repairs and Service — Live Shop
Diagnosing wiring circuit problems, repairing and calibrating electrical components, such as instruments, starter motors, solenoids, relays, AC generators and regulators, etc.

T01-T058 Fuel Systems — Repairs and Service — Live Shop
Repairs to fuel system components such as tank, filters, pumps and air cleaners. Diagnosis of carburetor circuits, analysis of air fuel ratios, repairs and calibration of carburetors.

T01-T060 Tune Up — Live Shop
Diagnosing and testing of all engine, fuel, ignition and electrical systems. Calibrating to specifications necessary to produce maximum engine efficiency.

T01-T062 Transmission Overhaul — Standard — Live Shop
Proper procedures will be emphasized for the removal, disassembly, cleaning, inspection and repair of clutches and three-speed and four-speed synchromesh transmissions. Problem diagnosis and adjustment of these units will also be included. All work will be performed on units in daily use.

T01-T064 Rear Axles and Drivelines — Live Shop
This unit deals with the construction, operation and service procedures for the various types of rear axle assemblies and their related parts. This includes a discussion on differential units (two- and four-pinion design, conventional and spec one traction, posi-traction, equal-lock, limited slip, non-spin, power lock and sure-grip design) bearings (friction and antifriction loads), axle mountings (dead and live full floating, three-quarter floating and semi-floating), seals (dynamic and static), drive liner (torque tube, hatchkin), universal joints (ball and trunnion, cross and roller, constant velocity).

T01-T066 Brakes — Hydraulic and Disc Power — Live Shop
The concerns are the construction, operation and service features of the braking systems presently in use today (drum and disc). This includes the effects of weight, speed, heat, friction and hydraulic principles. The student also receives instruction and practice in matching, drums and rotors, cam grinding, shoes, servicing the hydraulic units (master cylinder, wheel cylinder, lines and testing metering and proportioning valves), disassembly and assembly and adjustment of the various wheel brake units, parking brake service (drive line and rear wheel) and the wheel bearing service.

T01-T068 Steering Repairs — Live Shop
This course is intended to give the student an insight into the construction, operation, and service features of present suspension systems (mono beam, twin beam, long and short arm types). The student receives instruction on inspection and replacement, height adjustments, alignment machine calibration and use. Practical projects are provided for the student to apply his knowledge of suspension service, alignment of the front wheels and use of a wheel balance.
T01-T070  Automatic Transmission Repairs – Live Shop
This will cover the removal, disassembly, cleaning, inspection and measuring of all transmission parts to determine their serviceability. Also included is the correct procedure for reassembly, adjusting, installation and testing of automatic transmission as well as problem diagnosis and troubleshooting.

T02-C001  Hand Tools – Theory
Measuring tools, layout tools, testing tools, sawing tools, bench and special planes, edge cutting tools, boring tools, fasteners: nails, screws, smoothing tools.

T02-C002  Hand Tools – Practical
Practical use of all tools in project such as woodworking joints, coping moldings, quarter round, brackets, drawers. Sharpening hand saws, chisels and plane blades.

T02-C003  Woodworking Machines – Theory
General safety rules, operations and maintenance of the following: table saw, radial arm saw, bandsaw, jigsaw, jointer, planer, shaper, mortener, tenoner, wood lathe, sanding machines, portable power tools, power actuated tools.

T02-C004  Woodworking Machines – Practical
Sharpening circular saw blades, layout shop drawings, prepare bills of material, layout, machining and assembling check rail window, door frame, cut wedges, make moldings, cabriole legs, practice with operation of stationary and portable machines.

T02-C005  Concrete Form Construction – Theory
Footings, foundation walls for single and multiple dwelling units, concrete slabs, sidewalk steps, piles, columns, beams, ceilings and the stripping off of forms.

T02-C006  Concrete Form Construction – Practical
Construct model basement forms, projects: working with beam, column and slab construction, wall construction using wood and metal forms, curb forms, teleport pedestal forms, rough bucks.

T02-C007  General Framing – Theory
Basic principles of framing procedures: one-story house, balloon framing, procedures for framing openings for doors, windows, stairs, etc., basic principles involving wooden members in masonry buildings, insulation, building papers, vapor barriers.

T02-C008  General Framing – Practical
Models of single- and two-story house, framing of cottage or garage: full-size complete with all partitions, blocking, backing, etc.

T02-C009  Equal Pitch Roofing – Theory
Types of roofs: flat roofs, gable roofs, equal pitch hip roof, equal pitch intersecting hip roofs.

T02-C010  Equal Pitch Roofing – Practical
Model roof framing: actual size project using all necessary rafters in the roof, both gable and hip roofs, complete with dormers, snub gables, soffits and fascia boards.

T02-C011  Stairs – Theory
Basic types of stairs, mathematical terms and calculations, building code requirements, simple straight stairs, mitered and housed stringers, handrails.

T02-C012  Stairs – Practical
Model of straight flight of basement stairs, flight with one housed and one mitered string, complete with handrail, balusters and newel posts, flight of winders, concrete stair forms.
T02-C013  Finishing – Theory
Siding, cornices, door and window trim, inside and outside doors, closets, baseboards, feature walls, tile ceilings, etc.

T02-C014  Finishing – Practical
Installation of interior and exterior doors, window pocket doors, bypass doors, bifold doors, application of siding and exterior trim, application of interior trim.

T02-C015  Cabinet Work – Theory
Shop layouts, billing of material, kitchen cabinets, book shelves, vanity sets, furniture, wood bending, veneering, wood finishing and history of furniture.

T02-C016  Cabinet Work – Practical
Kitchen cabinets and vanities, complete with hardware and laminate tops.

T02-C019  Surveying – Theory
Familiarization with the builder's level and transit to check elevations and to lay out building lines.

T02-C020  Surveying – Practical
Practice with layout of buildings, both commercial and housing, shooting of elevations.

T02-C021  Estimating – Theory
Take-off quantities of material, cost of material and labor, trades, simple business procedures.

T02-C022  Estimating – Practical
Preparation of estimates for a garage and a small one-story house.

T02-C023  In-industry Work Experience
The students will receive first-hand knowledge of their chosen occupation.

T02-M001  Introduction, Materials and Tools Used in Masonry
History of the trade, employment conditions and opportunities, objectives of the course, masonry materials, concrete, tools, scaffolds and modern power equipment.

T02-M004  Practical Work
Slaking lime, gauging materials, mixing mortar, adding additives, mortar boards, handling brick trowel and hand tools; slicing mortar, furrowing with hand and overhead, cross joints and buttering; flushing, making story poles and gauge rods, laying out or chasing bond; squaring corners, leaving out for openings, bonding connecting walls and partitions, picking up and packing masonry units, cutting masonry units, checking levels, plumbing and leveling, ranging corners, toothing, racking, back, blocking, placing corner line blocks, line pins, stretching line, sighting line, setting trigs (twig), tingle brick, setting brick to line, perpends plumb, chases and indents, anchoring techniques, offsets, corbels, setting frames, striking joints, tooling joints, sills, coping, lintels, cleaning masonry, clean work habits taught.

T02-M006  Masonry Bonds – Theory
The student will be able to recognize and lay out corners and walls in American, Flemish, English, and Running Bond and have a knowledge of many lesser-known bonds.

T02-M008  Definitions – Theory
The student will become familiar with the common masonry trade terms and general terms used in the construction industry.

T02-M010  Walls – Theory
To recognize various wall types, understand their performance and limitations and know the various materials of wall make-up.
**T02-M011 Estimating – Theory**
The student will learn to estimate the materials and labor needed and the cost to construct a single-story masonry building.

**T02-P501 Wood Finishing – Theory**
Hardwood open grain, hardwood close grain, soft woods, oil stains, spirit stains, water stains, chemical stains.

**T02-P502 Wood Finishing – Practical**
Stripping, repairing and refinishing furniture.

**T03-A101 Fundamentals of Delineation**
Practice in the use of architectural and engineering, imperial and metric scales, basic lettering forms, linework techniques, material symbols, architectural conventions and techniques, orthographic and pictorial drawing.

**T03-A103 Computer-Aided Drafting 1**
Introduction of AutoCAD release 12 computer-aided drafting system, including geometric entities, input modes, coordinate types, drawing creation, drawing editing and manipulation, DTEXT and dimension creation, layer concept and output to printer and plotter.

**T03-A106 Applied Architectural Drafting 1**
A study of common building practices and materials and the production of working drawings for a small industrial building and residential dwelling.

**T03-A107 Computer Applications 1**
This course will introduce students to computer hardware, DOS 5.0 and WordPerfect 5.1. Students will be given an overview of common computer components, use basic DOS commands and prepare various documents using WordPerfect software.

**T03-A204 Building Code Analysis**

**T03-A205 Work Experience**
Students are placed in the drafting office of a firm that performs architectural drafting or related tasks for a two-week period to gain exposure and experience in drafting office procedures and environments.

**T03-A206 Applied Architectural Drafting 2**
A study of light wood frame construction, stair design and commercial building construction practices and the production of working drawings for the same.

**T03-A207 Computer-Aided Drafting 2**
Instruction in advanced commands of AutoCAD release 12 computer-aided drafting system, including advanced draw and edit commands, blocks, viewports, dimension variables and isometric drawing.

**T03-A208 Specifications**
Interpretation of tendering procedures, the division of trades and their responsibilities, writing a partial specification using a computer editing system for the architectural and structural divisions of a selected building project.

**T03-A301 Surveying and Topographical Drawing**
Practice in the use of the transit and level, the plotting of cuts and contours and the techniques of topographical drawing.
T03-A305  Quantity Take-off
Development of a systematic approach used to establish the quantities and cost of common building materials used in residential, commercial and industrial building construction. Emphasis is placed on standard units of measurement used for pricing purposes.

T03-A306  Applied Architectural Drafting 3
A study of commercial building construction practices and the production of working drawings for the same. Produce presentation drawings and a coordinated model of a constructed project. A study of perspective drawings and preparation of one- and two-point perspectives.

T03-A307  Computer-Aided Drafting 3
Instruction in advanced AutoCAD release 12 computer-aided drafting system, 3D commands and production of complex 3D drawings using wireframe and surface techniques.

T03-D202  Fundamentals of Structural Steel Detailing Drafting
A study of the fundamentals of shop detailed fabrication drawings.

T03-D205  Applied Strength of Materials 1
Basic course in strength of materials including stress and deformation to analyze and design bolted and welded joints.

T03-D206  Computer-Aided Drafting 2
Instruction in advanced commands of AutoCAD release 12 computer-aided drafting system, including advanced draw and edit commands, blocks, viewports, dimension variables and isometric drawing.

T03-D207  Applied Structural Engineering Drafting
A study of commercial reinforced concrete and structural steel buildings. Using standard structural drafting conventions and techniques, the student will produce a complete set of working structural engineering drawings.

T03-D302  Applied Structural Steel Detailing Drafting
A study of design and shop detailed fabrication drawings using standard structural steel detailing conventions and techniques. The student will produce a complete set of detailed shop drawings for a commercial steel building, which will include beams, columns, bracing and trusses.

T03-D304  Applied Strength of Materials 2
Basic course in strength of materials including shear and moments in beams and the application of these concepts in the selection of steel and timber beams.

T03-D305  Work Experience
Students are placed in the drafting office of a firm that performs structural drafting or related tasks for a two-week period in order to gain exposure and experience in the production of working drawings, other related drafting duties and drafting office procedures.

T03-D306  Computer-Aided Drafting 3
Instruction in advanced AutoCAD release 12 computer-aided drafting system, 3D commands and production of complex 3D drawings.

T03-D307  Surveying and Topographical Drawing
Practice in the use of the transit and level, the plotting of cuts and contours and the techniques of topographical drawing.

T03-K051  Blueprint Reading and Sketching
Blueprint reading and sketching as applied to the refrigeration and air conditioning trade: types of lines and scales used, proper sketching techniques and correct letter formation. Students will do isometric and orthographic drawings.
T03-M102  Applied Machine Drafting 1  
Production of working drawings of machines, with emphasis on the detailing of castings and machined components and the techniques of assembly drawings and parts lists. Principles of advanced dimensioning and tolerancing first auxiliary views are also covered.

T03-M103  Computer-Aided Drafting 1  
Introduction of AutoCAD release 12 computer-aided drafting system including geometric entities, input modes, coordinate types, drawing creation, editing, manipulation, DTEXT and dimension creation, layer concept and output to plotter.

T03-M104  Computer Applications 1  
This course will introduce students to computer hardware, DOS 5.0 and WordPerfect 5.1. Students will be given an overview of common computer components, use basic DOS commands and prepare various documents using WordPerfect software.

T03-M105  Fundamentals of Delineation  
Practice in the use of engineering, architectural and metric scales, basic letter form, material symbols, sectioning, axonometrics, orthographic drawing, and dimensioning.

T03-M201  Strength of Materials  
Solution of engineering problems involving stress/strain, bolted/welded joints and shear and moments in beams.

T03-M204  Work Experience  
Students are placed in the drafting office of a firm that performs machine drafting or related tasks for a two-week period in order to gain exposure and experience in the production of working drawings, other related drafting duties, and drafting office procedures.

T03-M205  Applied Machine Drafting 2  
Production of advanced working drawings of machine components, mechanical assemblies, gears, and cams.

T03-M206  Computer-Aided Drafting 2  
Instruction in advanced commands of the AutoCAD release 12 computer-aided drafting system including advanced draw and edit commands, blocks, viewports, dimension variables and isometric drawing.

T03-M301  Mechanics  
Solution of engineering problems involving torque, work, and power principles.

T03-M304  Applied Machine Drafting 3  
Production of advanced working drawings in the areas of welding, metal fabrication, structural steel detailing, industrial piping systems and sheet/plate metal fabrication. Students also produce presentation drawings and models.

T03-M305  Computer-Aided Drafting 3  
Instruction in advanced AutoCAD Release 12 computer-aided-drafting system, 3D commands and production of complex 3D drawings, using wire frame and surface techniques.

T03-R011  Blueprint Reading and Sketching for Carpentry PE  
Drawing interpretation and preparation as applied to the carpentry trade.

T03-R013  Blueprint Reading and Sketching for Plumbing PE  
Drawing interpretation and preparation as applied to the plumbing trade.
T03-R019  Blueprint Reading and Sketching for Masonry PE
Drawing interpretation as applied to the masonry trade.

T03-R033  Blueprint Reading and Sketching for Welding PE
Drawing interpretation as applied to the welding trade.

T03-S204  Fundamentals of Mechanical Systems Drafting
A study of symbols, conventions and terminology related to mechanical systems drafting and the
make-up of a set of building construction drawings.

T03-S205  Mechanical Systems (Plumbing) Drafting 1
A study of the Canadian Plumbing Code, Canadian Underwriters Association Standard for the in-
stallation of sprinkler systems and components of plumbing and fire protection systems. Using stan-
dard mechanical drafting conventions and techniques the student will produce a set of working
plumbing and drawings for institutional buildings.

T03-S206  Mechanical Systems (HVAC) Drafting 1
A study of heat loss calculations, heating systems and their components, ventilation and air distribu-
tion systems and design. Using standard mechanical drafting conventions and techniques the student
will produce a set of working HVAC drawings for an institutional building.

T03-S207  Computer-Aided Drafting 2
Instruction in advanced commands of the AutoCAD release 12 computer-aided drafting system includ-
ing advanced draw and edit commands, blocks, viewports, dimension variables and isometric drawings.

T03-S304  Quantity Take-off
Development of fundamental concepts for a systematic approach to material take-off of mechanical
components for commercial buildings.

T03-S305  Applied Mechanical Systems (Plumbing) Drafting 2
A further study in the theory and practice of plumbing drafting with emphasis placed on pumps, roof
drainage systems, advanced plumbing code and riser diagrams.

T03-S306  Applied Mechanical Systems (HVAC) Drafting 2
A study of cooling load calculations and air conditioning systems and their components. Using stan-
dard mechanical drafting conventions and techniques the student will produce a set of working HVAC
drawings for a commercial building.

T03-S307  Computer-Aided Drafting 3
Instruction in advanced AutoCAD release 12 computer-aided drafting systems, 3D commands and
production of complex 3D drawings, using wireframe and surface techniques.

T03-S308  Presentation Drawing and Modeling
Production of drawing and models for presentation purposes.

T03-S309  Work Experience
Students are placed in the drafting office of a firm that performs mechanical system drafting or
related tasks for a two-week period in order to gain exposure and experience in the production of
working drawings, other related drafting duties and drafting office procedures.

T04-A011  Safety Precautions in Welding and Cutting
Lectures involving safety hazards and precautions encountered in general welding processes. General
electrical apparatus hazards and precautions, grounding methods, machine use and adjusting. Precau-
tions in welding various types of work, containers, cylinders, etc. Selection of line shades. Prevention
of radiation burns, elimination of toxic fumes, proper ventilation of work area, selection of proper
work clothing and equipment, safety in material and job handling.
T04-A021 General Principles of Arc Welding – Theory
Circuit, arc, machines electrodes, polarity, arc blow, effects of welding heat on metals, welding definitions, amount of current for the job, types and position of welded joints.

T04-A022 Fusion Welding
Arc welding practice in vertical up and vertical down, horizontal and overhead position on flat plate with different electrodes (6010, 6011, 6013, 7018, 7024).

T04-A031 General Principles – Gas Metal Arc and Tungsten Inert
Theory of processes using shielding gas. Types of gases and control systems. Electrode materials and feeding system use and maintenance with a variety of processes, i.e., solid wire, short circuit transfer, flex core, metal core, spray transfer, aluminum spool gun.

T04-A038 Gas Metal Arc Welding – Semi-Automatic
Maintenance and use of equipment, flow gauges, wire feeders, hand guns, etc. Applications of various shielding gases: helium, argon, nitrogen, CO₂, etc. Machine control settings.

T04-A039 Special Welding Applications
Special process techniques and applications. Hard surfacing, metal spraying arc-air gauging. Preparation of materials, safety precautions, etc.

T04-A041 Combined Review and Testing
Final theory test. A comprehensive test (primarily short answer type) to determine degree of understanding of total course theory subjects. Test is administered following a complete review of theory topics.

T04-A052 Tungsten Inert Gas Welding TIG.

T04-A053 Geometric Dimensioning and Tolerancing
This course introduces the fundamental concepts of geometric dimensioning and tolerancing according to ANSI Y14.5M – 1982. This course will show how to properly apply the principles of geometric dimensioning and tolerancing to the manufacturing and inspection processes.

T04-A054 Quality Control
Fundamentals of dimensional metrology and measuring and gauging of geometric tolerances. This course will instruct the student in the basic skills of using inspection tools and equipment: IE open set up, CMM. It will show how to apply the principles of geometric dimensioning and tolerancing to the inspection process, following the ANSI Y1 4.5M-1982 Standard. The course will total 64 hours: approximately 40 hours of hands-on training and practice using the open set-up method; 24 hours of inspection training in the operation of a Mitutoyo coordinate measuring machine, model B-403B, using GEOPAK-2 version 6.41 software.

T04-A055 Industrial Training
By placing the students in an industrial setting they will be exposed to work volumes and production requirements expected of them. Their position will be equal to an employee of the company thereby they will be required to follow the safety and work rules.

T04-A056 Machine Shop
This course will supply the basic skill and knowledge of the machining trade needed to operate the various machine shop equipment: hand tools, layout tools, measuring tools, pedestal grinders, drill presses, lathes and milling machines. Upon successful completion of the course, the student will be certified to continue into the Machine Shop Practice – Advanced program or the Computer Numerical Control Machine Operator program.
T04-A057 Interpreting Engineering Drawings
This course provides the necessary range of topics to ensure that the student can interpret engineering drawings used in the manufacturing environment. The development of this skill is essential for successful employment in the manufacturing sector. The course begins with the basic concepts of orthographic projection, covers specific machining practices and concludes with extensive practice in interpreting moderately complex drawings.

T04-A058 Machine Shop
This course will advance the skills and knowledge of the Machine Shop Practice – Basic program and equip the student to pursue machinist apprenticeship, tool and die apprenticeship, tools and equipment sales and other related professions.

T04-A200 Introduction to Safety
This section will teach the student the proper safety habits and procedures associated with the manufacturing workplace.

T04-A201 Interpretation of Engineering Drawings
To teach the fundamental concepts of interpreting engineering drawings, basic dimensioning and tolerancing and inspection processes.

T04-A202 Measuring Tools
Upon completion of this section the student will be able to select and properly use and care for precision measuring tools to the accuracy required.

T04-A203 Sheet Metal and Related Materials
Upon completion of this section the student will be able to recognize and select different types and gauges of sheet metal and related materials.

T04-A204 Hand-Operated Machines
Upon completion of this section the student will be able to set-up, adjust and operate a variety of manually-operated machines, commonly found in metal fabrication.

T04-A205 Power Hand-Operated Tools
Upon completion, the student will be familiar with the proper operation, use and care of a variety of electric and air operated tools.

T04-A206 Pattern Development
Upon completion of this section the student will be able to determine blank sizes of articles to be made. Develop patterns and fabricate articles for assigned projects.

T04-A207 Mathematics
Upon completion the student will be able to competently convert imperial and metric measurements, basic geometry, solve equations, square root, find unknown quantities and trigonometry functions.

T04-A208 Welding
Upon completion the student will be able to perform basic oxyacetylene equipment set-up, cutting operations. Also plasma equipment set-up and operation.

T04-A209 Power-Operated Metal Fabrication Machines
Upon completion of this course the student will be able to recognize, set-up, operate, maintain, service and adjust: power shears, rollers, notching and punching machines and hydraulic press brakes.

T04-A210 Machine Shop Practice
Upon completion of the course the student will be able to accomplish a variety of manual and power machine operations to include hand threading, tapping, drill sharpening, punch die sharpening and surface grinding.

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T04-A211 Communication Skills
This course will allow the student to better comprehend from reading and lectures, to better record facts through making notes and to relate better to others through communication.

T04-A212 Assembly Techniques
Upon completion of this course the student will be able to recognize and use various assembly hardware products using appropriate manual and power assembly tools.

T04-A213 Work Experience
Students will be provided the opportunity of gaining work experience with participating training place host companies. This section will give the students the opportunity of demonstrating their acquired knowledge and skills to potential employers.

T04-A510 Related Arc Welding
Demonstrate a basic knowledge of arc welding circuits, electrodes, polarity, current requirements and welding procedures.

T04-G011 General Principles
Historical development, oxygen and acetylene, flame characteristics, equipment, set-up and operation of equipment, general precautions, identifying metals, preparation for welding, expansion and contraction.

T04-G013 Fusion (Gas) Welding, Brazing and Flame Cutting
Safety in setting up and using oxyacetylene equipment. Identifying and setting torch for carburizing, neutralizing and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. Welding butt joints, lap joints, fillet welds and corner welds on sheet steel in the flat horizontal, vertical and overhead. Performing the same joints on sheet steel using bronze brazing rod. Safety operating flame-cutting equipment cutting various thickness of steel plate.

T04-G021 Principles of Flame Cutting and Miscellaneous Applications
Lecture and demonstration (hands-on experience by student) in flame brazing of aluminum, fusion brazing of cast iron (pre-heating, flux application) white metal welding, silver brazing of steel, copper, brass and cast iron and hard surface application.

T04-G510 Related Gas Welding
Safety in setting up and using oxyacetylene equipment. Identifying and setting torch for carburizing, neutralizing and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. Identification and selecting weld rods and fusing filler rod to base metal. Welding butt joints, lap joints, fillet welds and corner welds on sheet steel in the flat horizontal, vertical and overhead. Performing the same joints on sheet steel using bronze brazing rod. Safe operation of flame cutting equipment cutting various thicknesses of steel plate.

T04-G516 Related Gas Welding
Safety in setting up and using oxyacetylene equipment, identifying and setting torch for carburizing, neutralizing and oxidizing flame. Identification selecting weld rods and fusing filler rod to base metal. Welding butt joints, lap joints, fillet welds and corner welds on sheet steel in the flat horizontal, vertical and overhead. Performing the same joints on sheet steel using bronze brazing rod. Safely operating flame cutting equipment cutting various thicknesses of steel plate.
T04-G520 Related Gas Welding
The student is taught the basics of oxyacetylene welding by means of lectures in the classroom and practical demonstrations in the welding shop. The student then works with the torch to acquire the ability to handle the outfit in the proper manner. A theory and practical test is given for evaluation purposes. One week—oxyacetylene cutting and welding, brazing and silver brazing in flat position. One week—arc welding in flat position.

T04-W012 In-Plant Training
Student is assigned to an industrial (welding) workshop. Student will observe and participate in work practices under direction of shop supervision. A report as to student's attendance, work ability, general attitude and employment potential will be provided by the workplace supervisor upon completion of the assignment.

T06-A311 Control Instrumentation
This course is an extension of the courses offered in the Power Engineering 4th Class and 3rd Class programs. It is designed to aid in the understanding of automatic controls in power and process. It is expected the student, after completion of this course, will have an understanding of the construction, operation and maintenance of automatic control systems in power plants.

T06-A314 ASME Codes
This course covers all aspects of the above ASME CSA B15-B52 construction and design codes for boiler and pressure vessel and piping in construction and operation.

T06-A321 Thermodynamics
This course, which follows Thermal Studies T06-S221, explains the heat-related phenomena encountered in power engineering. It provides the background required to understand the specific devices and systems studied in the more applied parts of the program. Instructions will be both descriptive and mathematical. Students will demonstrate their mastery of the course matter by solving mathematical problems.

T06-A324 Water Treatment and Combustion
This course is a continuation of materials presented in the Power Engineering 4th Class and 3rd Class programs. It emphasizes fundamental chemistry with a view to application in a power plant. The generic course chemistry falls into two papers of the Department of Labor syllabus, therefore, this course will be in two parts. The two parts are Water Treatment and Fuels and Combustion.

T06-A331 Applied Mechanics
This course explores the relationships between physical quantities such as mass, force, statics, kinematics, strength of materials and hydraulics and systems under the power engineer's responsibility. The tenor of the course will be primarily quantitative, and to that end, there will be considerable interplay between it and concurrent mathematics course.

T06-A334 Boilers, Pumps and Piping
This course continues the topics introduced in Boilers T06-S234, but deals in more depth with construction, design, maintenance and operation of power boilers, pumps, piping and fuel handling equipment.

T06-B302 Mechanical Drawing
This course is designed to give the student a clear insight into the mechanics of drawing and reading mechanical equipment drawings found in a power engineer's normal scope of work. It is designed as a follow-up to studies in drafting and blueprint reading achieved at the 4th and 3rd Class level.
T06-B312  Electrotechnology
This course covers all electrical theory for a power engineer to operate electrical equipment in a modern power generating station at the 2nd Class level. Briefly, it covers direct current theory, AC theory, DC machines, AC machines (motors, generators, basic electronics, switchgear, transformers, power converters, relays and related electrical controls).

T06-B313  Plant Administration and Maintenance
This course explains industrial legislation, fire prevention, safety and plant administration as it applies to modern power plants. As well, it explains modern metallurgy, welding methods and nondestructive test methods.

T06-B325  Turbines and Engineers
This course continues the topics introduced in 3rd Class Turbines and Engines T06-S225, but deals in more depth with the principles and operating procedures of steam turbines, gas turbines and internal combustion engines.

T06-B335  Refrigeration
This course continues the development of topics introduced in Refrigeration T06-S235 such as air compression and associated equipment, refrigeration cycle and equipment and calculations relating to air conditioning and refrigeration.

T06-S102  Blueprint Reading
Lettering, description of lines and weights, orthographic and isometric views, tolerances, sectional views, interpretation, freehand sketching.

T06-S121  Thermal Studies
This is a basic course which covers temperature scales, heat transfer, steam generation and laws for perfect gases.

T06-S123  Instrumentation and Controls
A fundamental course given to assist students to understand the principles involved for measuring and controlling variables found in power plants.

T06-S124  Fuels and Combustion
This is a basic course designed to introduce feedwater chemical technology, the breakdown and impurities in water boiler scale, etc.

T06-S125  Engines
This course provides an introduction to steam engines, steam turbines, internal combustion engines, lubrication, etc.

T06-S131  Mechanics
An introductory course on the study of statics and dynamics. This includes friction, types of motion, work, power, energy and some power transmission (mechanical).

T06-S133  Electrical Fundamentals
This course involves the basic topics of magnetism, electricity, AC and DC current, AC and DC generators and motors.

T06-S134  Boilers
A basic course on types of boiler construction, regulations, fittings, operation, etc.

T06-S135  Refrigeration
A basic course dealing with refrigeration equipment used in commercial and industrial processes. Refrigerants, components, controls, construction, etc., are the main topics.
T06-S202 Mechanical Drafting
Drawing orthographic, isometric and oblique views. Sketching of power plant systems. Types of screw threads, couplings and drive keys.

T06-S221 Thermal Studies
This is an intermediate-type course which should have Thermal Studies T06-S121 as a prerequisite. It increases the depth of knowledge from that course and approaches the subject from a more mathematical concept.

T06-S223 Instrumentation
This course follows the theory presented in Instrumentation and Controls T06-S123. It introduces transmission, control theory and expands on information presented in T06-S123.

T06-S224 Fuels and Water Treatment
This course follows Fuels and Combustion T06-S124 and introduces calculations from chemical formulas, investigation of liquid solution, ionization, acids, bases, water testing, etc.

T06-S225 Turbines and Engines
This course follows Engines T06-S125 with the larger and more complex systems being highlighted. This also introduces the various types and arrangements of industrial plants.

T06-S231 Mechanics
This course follows Mechanics T06-S131 by continuing the exploration of the relationships between mass, force, time and motion as they apply to the power engineer at the 3rd Class level.

T06-S233 Electrical
This course follows Electrical Fundamentals T06-S133 but with considerably more emphasis on electrical instruments, measuring applications, calculations, etc.

T06-S234 Boilers
This course follows Boilers T06-S134 but deals in more depth with safety practices, power boilers, heating boilers and heating, ventilating and air conditioning systems.

T06-S235 Refrigeration
This course follows Refrigeration T06-S135 but deals also with air compressors.

T06-S322 Computers
This is an introductory course to computers including the microcomputer and some applications. This course assumes no prior knowledge of computers. Computers are more and more in every kind of workplace, not the least of which is the power plant, for purposes of equipment and/or process monitor and control.

T07-A103 Introductory Biology
An introduction to the unifying principles of biology at the functional and structural level. Focus on metabolism, cellular organization and function, biological information and an overview of plant and animal organization and interrelationships.

T07-A104 Mathematics
The course teaches mastery of the basic calculations expected in technical and scientific professional practice. It teaches literacy in the notation, manipulation and interpretation of modern mathematical expressions including: algebraic and transcendental functions, matrices and linear equations, differentiation and integration. Applications are emphasized in weekly problem sessions.

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T07-A106 **Instrumentation Principles 1**
An introduction to the principles of physics. Emphasis on theory as applied in modern laboratory instrumentation, with focus on electricity, magnetism, optics and nuclear radiation. The objective is to provide students with a basic understanding of physical theory underlying measurements and instrumentation in the working laboratory.

T07-A112 **Microbiology 1**
A survey of the microbial world, their organization, structure and factors that influence and control microbial activity and growth. Basis techniques used in the observation, cultivation, and identification of selected bacteria and fungi are included.

T07-A113 **Organic Chemistry 2**
This second course in organic chemistry will cover the sources, the chemical reactions and the physical properties of arenes, alcohols, ethers, carboxyls and carboxylic acids. The use of IUAPAC nomenclature will be continued but the common and industrial names of organic compounds will be included as is appropriate.

T07-A115 **Biochemistry 1**
This is an introductory course designed to give students a good understanding of the chemistry of carbohydrates, lipids and proteins.

T07-A116 **Data Analysis 1**
This course concentrates on descriptive statistics, the binomial, normal, chi-square and T distributions with emphasis on experimental error and tests for significance. The course includes two variable linear regressions, recognized sampling protocols and statistical process control.

T07-A117 **Instrumentation 1**
This first course in instrumentation surveys the functional design and operating principles of optical spectrometers in the infrared, visible and ultraviolet regions of the spectrum. As well, the course examines the role of these instruments in both quantitative and qualitative chemical analyses.

T07-A119 **Co-op Work Term**

T07-A120 **Instrumentation 2**
This course surveys the major techniques of chromatographic separation and identification with due emphasis on gas/liquid chromatography and high performance liquid chromatography. The course includes selection and design of columns along with the performance characteristics of various methods of detection.

T07-A140 **General Chemistry**
This is an introductory course designed to give students a general knowledge of the atom, bonding and structure, together with a good knowledge and understanding of the trends of the elements in the Periodic Table. There is also strong emphasis on nomenclature and stoichiometry. The study of gases, liquids, including preparation of solutions, intermolecular forces and thermochemistry will be undertaken.

T07-A141 **Workplace Safety**
This course is designed to ensure all students are aware of and follow proper safe laboratory practice. It includes WHMIS, fire safety, basic first aid, AIDS information and appropriate emergency procedures. The emphasis is on the safe handling of laboratory chemicals in the workplace.

T07-A142 **Computer Applications**
The course is a general introduction to applied computing at the workstation level. It includes DOS commands, file structures, file manipulation, word processing, construction of tables, writing of chemical formulas, mathematical equations, and data processing.
T07-A143  Analytical Chemistry
This course provides an introduction to qualitative and quantitative chemical analysis and will develop
an understanding of titrimetric and gravimetric methods of analysis.

T07-A144  Anatomy/Physiology
This course provides students with a general understanding of mammalian and angiosperm plant
anatomy and basic physiological reactions. Practical applications to human concerns are included.

T07-A145  Organic Chemistry
This course introduces first concepts in modern organic chemistry. Theoretical concepts underlying
structure of hydrocarbon compounds, reactions of organic molecules and mechanisms of certain
classes of reactions are treated. The accompanying laboratory is designed to familiarize students with
common techniques used in separations, purifications and preparations.

T07-A201  Instrumentation 3
This course emphasizes the systematic identification of organic materials using infrared, nuclear mag-
netic resonance and mass spectrometry. The laboratory portion of the course includes thermal and
electrochemical methods of chemical analysis.

T07-A202  Biochemistry 2
The main focus is on nucleic acid chemistry. Topics include DNA and RNA structure and function,
DNA and RNA synthesis in prokaryotes and eukaryotes, regulation and control of replication and
transcription in prokaryotes and eukaryotes, protein biosynthesis and control of translation in
prokaryotes and eukaryotes, DNA mutations and an introduction to recombinant DNA.

T07-A203  Microbiology 2
Microbiological fundamentals and applications to the environment, water and foods are studied. A
study of selected metabolic reactions and methods used in the identification of selected microorgan-
isms is included.

T07-A204  Tissue Culture/Virology
An introductory course in basic techniques used in the vitro culture and manipulation of selected
examples of plant and animal tissues and cells. A survey of the structure, identification, assay methods
used for selected viruses and subviral agents is included.

T07-A205  Organic Chemistry 3
The third course in organic chemistry continues with the study of organometallics, enols, carboxylic
acids, esters, amines, arylhalides, phenols and acetate-derived natural products. The third term of
laboratory work is concerned with microscale qualitative identification of organic compounds.

T07-A206  Data Analysis 2
This course emphasizes the descriptive statistics of multivariate data and the analysis of structured
data. Topics include multisample comparisons, one-way analysis of variance, multiple regression with
analysis of variance and the orthogonal design of experiments.

T07-A207  Applied Microbiology
The role of microorganisms in the practical and applied aspects of major classes of products of indus-
trial importance is covered, including the production of foods and selected commercial products of
economic value.

T07-A208  Biochemistry 3
This course is designed to give students a thorough understanding of the interrelationships of carbo-
hydrates, lipids and proteins in cellular metabolism. Another major focus is clinical chemistry and
nutrition.
T07-A209  Quality Assurance
This course defines in generic terms 26 elements generally accepted as essential in both testing and developmental laboratories. Specific quality assurance standards and requirements for laboratory accreditation by particular regulatory bodies are also reviewed. These include the Standards Council of Canada, the International Organization for Standardization (ISO) and good laboratory practices (FDA 58.1).

T07-A210  Molecular Biology
An introduction to the principles, logic, and methodology of molecular biology. Focus on theory and practical applications of the methods of restriction mapping, DNA sequencing and recombinant DNA technology. The course reviews the milestones in molecular biology and the development of the tools used in the understanding and manipulating the informational content of living systems. The objective of the course is to provide theoretical and hands-on experience in the broad and expanding discipline of biotechnology.

T07-A211  Immunology
An introduction to the principles of immunology. Focus on the theory and applications of non-self recognition systems. The course covers the broad areas of defense mechanisms, the nature of the mammalian immune system, the immune response, hybridoma technology and monoclonal antibodies, hyperimmune responses and medical/public health aspects of immunology, including AIDS, cancer immunology and autoimmunity.

T07-A212  Co-op Work Term

T07-A214  Advanced Lab Techniques
Students are expected to carry out an external mini-project using advanced instrumentation and techniques that were not available to them during the normal course of studies in an area of particular interest to them.

T07-A215  Environmental Chemistry/Toxicology
This course is designed to give students an in-depth appreciation of the interrelationship between chemicals (inorganic, organic, biochemical) and the environment and their potential toxic effects.

T07-A216  Resource Management
A combination of lectures, labs and field trips bring together and reconcile the many overlapping demands of society on the environment. Scientific and environmental concepts are applied to the study of the environment in terms of resource management, preservation of wildlife, population growth, pollution, etc.

T07-A217  Occupational Hygiene
This course is designed to familiarize the student with instruments and techniques that help make the workplace safe.

T07-A218  Professional Ethics/TQM
This course surveys the definition, resolution and prevention of ethical problems in the workplace setting with a particular emphasis on situations known to rise in testing and developmental laboratories. To this end, the course examines the role of formal quality systems as an expression and demonstration of professional ethics in the contemporary workplace.

T07-A219  Sustainable Development Issues
The social, economic and environmental aspects of major problems facing people today are examined. These include global warming, pollution, resource management, etc. A history of sustainable development is included. Students will be able to make more informed choices when facing environmental issues.
T07-A220 Microtechniques — Laboratory
A course in the practical aspects of preparing biological material for histological examination. It includes basic histological procedures for preparing plant and animal specimens and simple photomicrographic techniques.

T07-A221 Analytical Chemistry
This course provides an introduction to qualitative and quantitative chemical analysis and will develop an understanding of titrimetric and gravimetric methods of analysis.

T10-A001 Mathematics
After successful completion of the course, the student will be able to demonstrate an understanding of: area, perimeter, volume, geometry and trigonometry as applied to machine shop practice and computer numerical control machine operation.

T10-A002 Science 2
At the completion of the course, the student will be able to demonstrate a basic understanding of the mechanical properties of metals and simple static forces as related to machine shop practice and computer numerical control machine operation. The following topics will be studied: stress/strain relationships, elasticity and allowable stresses, thermal stresses, levers, moments and torque.

T10-A003 Mathematics 1
Upon completion of the following topics the student will be able to do the necessary calculations required to operate basic machine shop equipment and to solve basic problems. Topics are: whole numbers, fractions (common and decimal), percentages, shop formulas and simple equations, thread calculations, speed and feed calculations, ratio and proportion.

T10-A004 Science 1
After successful completion of this course, the student will be able to demonstrate an understanding of basic metallurgy and simple machines. The student will become familiar with types, uses, characteristics, heat treatment, physical and chemical properties and processing of metals. Work and horse-power, drives, belts and pulleys, gears and gear trains, sprockets and chains, bearings, seals and lubricants of machines will be studied.

T10-A361 Mathematics
This course will provide the practical and theoretical aspects of mathematics essential for problem-solving in the technical courses of Power Engineering 2nd Class. The sequence of material will be matched to the needs of other courses being studied concurrently.

T10-M161 Mathematics PE 4th
This is a skill development course in arithmetic, applied geometry and lower level algebra. Emphasis is also placed upon hand-held calculator skills and realistic applications.

T10-M261 Mathematics PE 3rd
This course extends Mathematics PE 4th T10-M161 from algebra into logarithms, trigonometry and the practical mensuration of areas and volumes. Rather than simply involve skill development, this course begins to introduce the student to field applications.

T11-E001 Fundamentals of Electricity

T11-E005 Electrical Laboratory
To connect electrical equipment to DC and AC sources to prove theories taught in Fundamentals of Electricity T11-E001.
T11-E008 Residential Code
Blueprint reading and scaling. Application and use of code rules pertaining to residential wiring. Residential circuit calculations and services.

T11-E009 Residential Wiring
To practice the methods and techniques of residential wiring.

T11-E049 In-Industry
1) To provide Electrical students with practical on-the-job experience. 2) To expose students to actual job conditions and industry requirements. 3) To help instill good work habits and a positive attitude in students. 4) To introduce electrical contractors to possible apprentice candidates. 5) To make electrical contractors aware of Red River Community College programs and students with a view to providing input.

T11-E051 Alternating Current Fundamentals
Voltage and current relations in series and parallel AC circuits containing resistance, inductance and/or capacitance.

T11-E053 Three-Phase and Transformers
Voltage and current relationship in single and three-phase systems. Principle of operation of single- and three-phase systems. Transformer connections and polarity tests. Special type transformer applications. Also DC and AC instruments.

T11-E057 Electrical Laboratory AC.
To connect electrical equipment to an AC source to determine their behaviors and characteristics.

T11-E058 Commercial Code
Blueprint reading and applied code in commercial-type occupancies. Electrical code calculations.

T11-E060 Commercial Wiring
To practice the methods and techniques as they apply to commercial buildings. Also wiring of motor control equipment.

T11-E062 Solid State
An introduction to electronics and solid state devices, half and full wave rectification, diode applications, transistors and power supplies. Solid state devices, i.e., dimmers, photo-tubes, timers, speed control. Also lab hours with introduction to test equipment and their uses.

T11-E063 Electric Motor Repair – Theory
Theory of operation of single-phase motors. Procedure for analyzing motor faults, stripping and rewinding motors.

T11-E067 Programmable Logic Controllers

T11-R002 Safety and Fundamentals – Theory
The student will study types of injuries from mechanical causes, electrical and refrigerant burns, explosions, toxic gases, WHMIS, CFC/HCFC/HFC (Chlorofluorocarbons) and mouth-to-mouth resuscitation.

T11-R004 Fundamental Principles
Trade terms, types of heat, heat transfer methods, volumes, pressures, density, formulas used in calculations, tools of the trade, fittings and other materials.

T11-R006 Refrigeration Systems Theory
The student will study the refrigeration cycle, including compressors, condensers, refrigerant metering devices, evaporators, refrigerant oils, temperature controls, charging and testing systems.
T11-R008 Refrigeration Systems — Practical
Practical work on compressors, condensers, refrigerant metering devices, evaporators, refrigerant oils, temperature controls, charging and testing systems. The students will learn how to use tools, materials, controls and other related components required for a complete refrigeration system to function.

T11-R010 Commercial Systems — Theory
A study of various types of systems such as low temperature, medium temperature, remote, multiple, open types, semi-sealed and sealed units, defrosting systems—reverse-cycle systems, heat pumps, types of installations, application and selection of equipment and accessories, installation of and servicing of equipment and adjusting of controls.

T11-R012 Commercial Systems — Practical
Practical work/applications of the various systems such as low temperature, medium temperature, remote, multiple, open types, semi-sealed and sealed units; defrosting systems—reverse cycle systems, heat pumps; types of installations; application and selection of equipment and accessories, installation of and servicing of equipment and adjusting of controls. Students must be able to diagnose problems relative to these systems and correct same.

T11-R014 Calculation of Heat Transfer — Theory
A study of compressor capacities, speed ratios, evaporator capacity, piping sizing and component selection. The student will become familiar with basic air conditioning systems, air distribution instruments, fans, ducts and filters.

T11-R016 Air Conditioning Systems — Theory
Direct expansion, water chiller, single multiple air and its properties. Types of compressors used. Fans, filter, and air distribution systems.

T11-R018 Air Conditioning Systems — Practical
Practical applications/work on direct expansion, water chiller, single multiple air and its properties; types of compressors used; fans, filters, and air distribution systems. Students will do repair on small air conditioning systems, check operation and performance.

T11-R020 Refrigeration Electrical — Theory
Electrical circuits, magnetism, motors, relays, controls, and control systems. Electrical code as pertaining to refrigeration equipment.

T11-R022 Refrigeration Electrical — Practical
Practical applications/work on electrical circuits, magnetism, motors, relays, controls, and control systems; electrical code as pertaining to refrigeration equipment.

T11-R050 In-Industry Training
The purpose of training is to provide refrigeration and air conditioning technicians with practical on-the-job experience, to expose students to actual job conditions and industry requirements, to help instill good work habits and a positive attitude in students, to introduce refrigeration and air conditioning contractors to possible apprentice candidates and to make refrigeration and air conditioning contractors aware of College programs and students, with a view of providing input.

T12-I001 DC Fundamentals
Structure of atoms, conductors and insulators, electric charges, units of measurement, Ohm's Law, circuit measurements and calculations, magnetism, capacity, inductance, time constants.

T12-I003 AC Fundamentals
Sine waves, frequency spectrum, reactance, impedance, calculations, resonance, phase relationships, practical considerations.
T12-I004  **Electronic Fundamentals**
Operation, characteristics and handling techniques of diodes, bipolar transistors, UJT's, SCRs, control devices, amplifiers, power supplies, RC and LC oscillators.

T12-I016  **Electronic Soldering and Desoldering**
The student will learn the following: soldering and assembly of components on printed circuit boards (PCB), make touch-up and rework repairs to PCBs, make quality assurance tests on completed work, install and remove surface mount devices (SMD) on training boards.

T12-I017  **Computer Basics and Keyboard Skills**
Through hands-on experience, this course provides an introduction to the more common MS-DOS commands, typing skills and word processing. The student will learn about files, file names and file listings. Use of common DOS commands: DIR, REN, DEL, B:, MD and CD. Move files between disks and directories. Word processing documents will be created, edited and printed. Typing skills must be demonstrated through controlled tests at a minimum of 25 words per minute with at least 85 percent accuracy.

T12-I054  **BJT Amplifier – Theory and Operation**
A practical in-depth study of the bipolar junction transistor from basic biasing requirements to the development of a confident approach to the understanding of circuit configurations found in commercial design. Theory and experiments used extensively to develop a broad fundamental knowledge of the topic.

T12-I058  **UJT Thyristor – Theory and Operation**
The UJT as a control device. Thyristor family of PNP device. Controlled rectification practices, phase-shifting methods. FET's and operational amps. Experimental procedures and analysis of circuits used in industry.

T12-I060  **Number Systems and Digital Logic**
Binary and hexadecimal number systems, sequential and combinational logic, encoders, displays and registers.

T12-I066  **Control Devices and Applications**
Discrete and integrated linear and non-linear voltage regulators, sinusoidal LC oscillators and synchronous and asynchronous relaxation oscillators. Students are involved in theory, lab activity and the final report stressing demonstratable understanding.

T12-I070  **Microprocessors**
Three-state devices, memories, number systems, 6800 microprocessor using Heathkit ET340 trainer, interfacing the MPU and writing basic programs.

T12-I073  **Logic Controller Circuits**
Theory, operation, testing and troubleshooting TTL and CMOS logic circuits and working systems.

T12-I074  **Microprocessor—Computer Interfacing**
Assembler and machine language programming, introduction to microprocessor and computer architecture and operation. Interfacing microprocessors to RAM, switches, keyboards, D/A and A/D converters, stepper motors, RS232-C and other data transmission methods.

T12-T004  **Semiconductor Devices**
Conductors, semiconductors and insulators. P and N type semiconductors. Two-terminal devices, rectifiers, varactors, zeners, tunnel diodes, photo cells, thermistors and varistors, bipolar transistors, circuit configurations, characteristics and applications. SCRS, DIACS, TRIACS, VJTS, testing diodes, transistors and thyristors.
T12-T006 Communications Transmitters and Receivers
Amplifiers AP IF and RF oscillators, mixers, detectors and superhet principles. CW AM SSB, DSB, FM and PM transmission and reception. Construction, alignment maintenance and troubleshooting of AM/FM radio.

T12-T008 Transmission Lines, Antennas, Intro Microwaves
Characteristics of transmission lines, standing waves, SWR impedance matching, dipole antennas, Marconi antennas, directive arrays, propagation of radio waves, microwaves, polarization, waveguide modes, microwave oscillators, cavities and directional couplers.

T12-T009 Multiplexing Techniques
Carrier fundamentals, fundamentals of frequency Division Multiplex and time division multiplexers. Nyquist’s sampling theorem, analog to digital and digital to analog converter fundamentals. TI PCM operation and parameter.

T12-T012 Telephony and Telephone Switching Principles
Telephone exchanges, incoming signalling, signal processing, switching, outgoing signalling, Mitol SX 100 PBX wiring and programming telephones, premise wiring, fiber optics, fax and modems.

T12-T014 Digital Techniques
Components used in digital circuits, operation of logic gates, use of Boolean algebra to minimize logic circuit design, design of both combinational and sequential logic circuits for a given application, concepts for the selection of integrated circuits, practical applications.

T12-T016 Microprocessors
Microcomputer basics, introduction to programming, the 6800 microprocessor interfacing. Experimental application using the 6800 microprocessor.

T13-M001 Related Maths
Solving percentage problems, computing discounts and mark-ups, ratio and proportion problems, along with basic mathematical operations and how they apply to the trade.

T13-M502 Masonry Math
Math concepts: whole numbers, fractions, decimals, equations, percent, ratio and proportion, square roots, Pythagorean theorem, arc lengths, parabolic arch, geometric designs, volumes. Practical exercises: masonry exercises #1, #2, perimeter, area, volume. ME #3, four percent calculations and estimating masonry unit quantities, arc lengths of segmental arches, estimating costs. Three multiple choice tests.

T13-M504 Welding Math
Individual progress mathematic program utilizing diagnostic tests to identify remedial requirements for each student. Students are required to complete basic assignments on each of following topics: operations with whole numbers, fractions, and decimals, solving and writing simple equations with one unknown, percent calculations, ratio and proportions, denominate numbers, metric measurement and calculation, squares and square roots, right angle triangle, Pythagorean theorem, measure of distance perimeters and circumference, measure of surface areas of various geometric figures, calculation of volume/capacity/mass for commonly used containers.

T13-M508 Motor Vehicle Mechanic Technician Math
Individual progress mathematics program utilizing diagnostic tests to identify remedial requirements for each student. Students are required to complete basic assignments on each of following topics: four operations with whole numbers, fractions, decimals, elementary algebra using one unknown, percent, ratio and proportion, denominate numbers, metric measures and calculations, exponents, scientific notation/significant digits, square/square roots, Pythagorean theorem, perimeter/circumferences, areas, various figures, volume/capacity of commonly used shapes of containers.
T13-M510 Drafting Math 1
Solution of architectural and engineering-related problems using basic mathematical operations, ratio and proportion and scientific notation.

T13-M511 Machine Shop Math
Review of basic operations applied to whole numbers, fractions, and decimals, numerical treatment: approximations, significant digits, scientific notation, square root using Newton’s successive approximation method. Algebra: simple equations in one variable, formulas. Trigonometry: Pythagorean theorem, solution of right triangles, applications, length, area, volume and weight calculations, general problem solving, taper and surface speed calculations.

T13-M512 Carpentry Math
Fractions, decimals, percent, board measure, area, rectilinear, square root, circular measurement, ratio and proportion, volume, cylinder, cones, pyramids.

T13-M513 Plumbing P/E Math
Mathematics which is directly related to the trade. It covers fractions, decimals, square root, area, volume (both rectilinear and cycliner) and offset calculations.

T13-M517 Electrical P/E Math
Whole number operations, fractions, decimals, percent, denominate numbers, ratio and proportion, signed numbers, basic area and volume, right triangle, sine, cosine, tangent, equations, powers of ten, square roots, algebra, trigonometry, vectors and logarithms, law of sines, law of cosines.

T13-M52 Electronics Math 1
Algebra, powers of ten, exponents, ratio, trigonometry, logarithms, simultaneous equations, problem solving (AC and DC circuits), decibels, network analysis, number system, Boolean algebra.

T13-M521 Mathematics

T13-M523 Telecom Math Term 1
Algebra, powers of ten, exponents, ratio, trigonometry vectors, problem solving (AC and DC circuits).

T13-M524 Drafting Math
Solution of engineering-related problems using algebra, geometry and trigonometry.

T13-M525 Motor Vehicle Mechanic Technician Math
Individual progress math. Program utilizing diagnostic test material to identify remedial requirements for each student. Students are required to complete basic assignments on each of the following topics: four operations with whole numbers, fractions, decimals, elementary algebra using one unknown, percent, ratio and proportion, denominate numbers, metric measures and calculations, exponents, scientific notation/significant digits, square/square roots, Pythagoras theorem, perimeter/circumferences, areas, various figures, volume/capacity of commonly used shapes of containers.

T13-M614 Drafting Math 2
Solution of architectural and engineering-related problems using algebra, geometry and trigonometry.
T13-P001 Orientation to Power Equipment Technician
The student will be able to list places of employment and discuss the occupational outlook for small gas engine mechanics. The student will also be able to list the different types of power equipment, the different manufacturers of power equipment and name the steps involved in small gas engine shop work.

T13-P002 Shop Safety and Hand Tools – Theory
Students will be able to distinguish between safe and unsafe shop practices and select fire extinguishers for the classes of fire, understand the importance of developing safe working habits to avoid injury to themselves and fellow workers and to prevent damage to equipment. The student will be able to identify, understand, explain, and use tools necessary for small engine repair.

T13-P003 Shop Safety and Hand Tools – Practical
Use of hand tools, measuring instruments, use of special equipment, presses, drill, press, stands and jacks. Demonstrate the ability to work safely and cooperatively in the shop.

T13-P004 Basic Small Engine – Theory
Distinguish between characteristics of a four-cycle and a two-cycle engine. Calculate problems dealing with work, horsepower, torque and cubic inch displacement. Identify the components of a four-stroke-cycle engine and understand the operation of the four-stroke-cycle engine. Identify the components of a two-stroke-cycle engine and understand the operation of the two-stroke-cycle engine.

T13-P005 Basic Small Engine – Practical
Disassembly, identification and inspection of the two-stroke and four-stroke-cycle engine. Operation and identification of fuel induction systems and valve train.

T13-P006 Fuel Systems – Theory
Outline basic carburetor operation and identify major components and circuits. Identify the different fuel supply systems as well as explain their operation. Identify the parts of the governor systems used in small engines and explain their operation. Understand the importance of filters in the fuel systems and be able to identify the different types.

T13-P007 Fuel Systems – Practical
Disassembly, cleaning, assembly and calibration of component units. Use of diagnostic test equipment and meters.

T13-P008 Electrical Systems – Theory
Identify types of electrical circuits, solve problems using Ohm's Law and understand the function of an ohmmeter and voltmeter. Identify and understand the function of the magneto ignition system and the capacitor discharge ignition system. Wiring diagrams and circuits, generators, alternators, solenoids, rectifiers, switches, gauges and starters.

T13-P009 Electrical Systems – Practical
Disassembly, testing, repairing and reassembly of electrical components, attaching and use of testing meters and diagnostic equipment related to small engine service.

T13-P010 Engine Service – Theory
Fundamental services, maintenance and overhaul methods and procedures, precision measuring, diagnosis and correction of both two-stroke and four-stroke-cycle engines used in power equipment. Solve problems using basic troubleshooting procedures. Diagnosing and testing of all engine, fuel, ignition and electrical systems. Use parts and service manuals effectively.
T13-P011 Engine Service – Practical
Maintain and repair engine and components to manufacturer’s specifications by identifying and following the recommended manufacturer’s maintenance schedule and recognizing worn/damaged parts, draining and refilling lubricants and changing related filters and conducting seasonal storage. Perform engine tune-ups, test, diagnose, repair and maintain the fuel, ignition, starting/charging/instrumentation, cooling, and exhaust systems. Remove, disassemble, clean, inspect, measure, recondition/repair components to recondition the engine assembly to original specifications and performance levels.

T13-P012 Outboard Motors – Theory
Explain the principles of operation of the two-cycle and four-cycle outboard engine, as well as related systems including ignition, fuel supply, lubrication, charging, starting and cooling. Know the correct procedure for off-season storage and the procedure for boat rigging and set up.

T13-P013 Outboard Motors – Practical
Diagnose, disassemble, repair, reassemble and adjust the components of the outboard engines used in industry and test each to the manufacturer’s specifications. Store an outboard engine for the off-season and rig and outboard motor boat.

T13-P014 Outboard Motor Drives – Theory
Fundamental operating, construction and design features and characteristics of outboard gear cases, drive shafts, propellers, trimtabs, exhaust housing, control boxes and tilt assemblies.

T13-P015 Outboard Motor Drives – Practical
Diagnose disassemble, repair, reassemble and adjust outboard motor gear cases, tilt assemblies, exhaust housing, drive shaft, propeller and trimtabs.

T13-P016 Motorcycle/ATV – Theory
Explain the principles of operation of the two-cycle and four-cycle motorcycle engine. As well, use related systems including ignition, fuel supply, lubrication, charging, starting and cooling. Know the correct procedure for off-season storage.

T13-P017 Motorcycle/ATV – Practical
Diagnose, disassemble, repair, reassemble and adjust the component parts of motorcycle engines used in the industry and test each to the manufacturer’s specifications. Store a motorcycle for the off-season.

T13-P018 Motorcycle/ATV Drives – Theory
Fundamental operating, construction and design features and characteristics of motorcycle transmissions, final drives, clutches, brakes, steering, suspension, wheels and tires.

T13-P019 Motorcycle/ATV Drives – Practical
Diagnose, disassemble, repair, reassemble and adjust motorcycle transmissions, final drives, clutches, brakes, steering, suspension, wheels and tires.

T13-P020 Snowmobile – Theory
Explain the principles of operation of the two-cycle snowmobile engine as well as related systems including ignition, fuel supply, lubrication, charging, starting and cooling. Know the correct procedure for off-season storage and the procedure for pre-delivery and set up. Fundamental operating, construction and design features and characteristics of snowmobile clutches, chain cases, drive axles, tracks, suspensions, frames, brakes and steering.

T13-P021 Snowmobile – Practical
Diagnose, disassemble, repair, reassemble and adjust the component parts of the snowmobile engines used in industry and test each to manufacturer’s specifications. Diagnose, disassemble, repair, reassemble and adjust snowmobile clutches, chain cases, drive axles, tracks, suspensions, frames, brakes and steering. Store a snowmobile for the off-season and complete a snowmobile pre-delivery service.

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T13-P022  Lawn and Garden/Chainsaw – Theory
Explain the principle of transmitting power from the engine to the functional system by means of a belt-drive system and a chain-drive system. Describe the components of a belt-drive system and a chain-drive system. Name and describe the common types of chains, bars, sprockets and clutches used on chainsaws.

T13-P023  Lawn and Garden/Chainsaw – Practical
Disassemble, repair and reassemble a simple gear case, three-speed wheel drive transmission, front PTO system, rotary tiller, rotary mower and snowblower. Disassemble, repair and reassemble a chainsaw clutch, carburetor, chain oiler and tensioner. Sharpen and make repairs to chainsaw chain. Diagnose and correct problems in the ignition system, fuel system and lubricating system.

T13-S001  Related Science
In this course, the students are taught the basics of automotive electricity, effects of heat on metal and their properties, hydraulics color and how these apply to the trade.

T13-S504  Welding Science
Mining methods, refining of ore, steel-making furnaces, types of steel, heat treatment of steel and critical temperatures, effects of welding on steel and lattice structure influence of expansion, mechanical properties, alloys and stainless steels.

T13-S508  Power Mechanics Science

T13-S512  Carpentry Science

T13-S513  Plumbing Science

T13-S523  Science
Heat energy, heat transfer formulas, heat conductances, pressure, enthalpy, diagram relationship, principles of psychrometrics, psychrometric processes, fan-laws, pressures, in duct systems, refrigerant oils and load calculations.

T13-S507  Motor Vehicle Mechanic Technician P/E Science
Topics include basic precision measurement, DC electrical circuits, hydraulics, gears and pulleys and air conditioning and heating.
T13-S717 Lighting Fundamentals
Introduction to lighting terms. Types of light sources available, their advantages and disadvantages in terms of fixture costs, light output (quality and quantity), life expectancy and operating cost efficiency. Calculation of luminaires required for a specific workplace.

T13-W100 WHMIS Workshop
The generic WHMIS workshop describes the meaning of the main components, i.e., labeling system, Material Safety Data Sheets and training of workers. Specific information about health hazards, chemical handling and chemical fires/explosions is covered.

T14-A026 Customer Relations
The purpose of this course is to enable students to develop carrier-related communication skills and the importance of customer satisfaction in business.

T14-A027 Business Communications
The purpose of this course is to establish guidelines for planning and organizing a presentation for delivery and developing writing skills. Introduction to computers.

T14-A028 Automotive-Related Business Practices
The purpose of this course is to develop communication skills and become familiar with some business practices, particularly in knowledge of computer skills.

T14-A045 Communication Skills 2
This course provides students enrolled in Machine Shop Practice – Advanced with the following information: how to write letters, memos and short informal reports; how to write resumes, handle interviews and work ethics; how to prepare for and conduct meetings.

T14-A046 Communication Skills 1
This course provides students enrolled in Machine Shop Practice – Basic with the following: reading and comprehension skills, study and test-taking skills, interpersonal communication skills, note-taking skills.

T14-A103 Critical Thinking/Problem Solving
The student will develop critical thinking through the process of constructing and analyzing arguments and solving problems. By using case studies, the student will learn how to obtain the facts, understand concepts, construct a logical argument and analyze other arguments.

T14-A104 Writing and Study Skills
This course is designed to develop written communication skills. In addition, the student will learn how to use the library in the investigation of a research proposal, as well as appropriate study skills.

T14-A105 Business Communications
This course emphasizes communications in the workplace, in particular, resume writing, interview skills and organizing and writing of letters, memoranda and technical reports.

T14-A203 Oral Communications
Students will develop oral presentation skills through the presentation of technical reports.

T14-A601 Interpersonal Communications
The student will practice communication skills such as trust building, listening, clarifying, appropriate trust, seeing the other person’s perspective, conflict management, recognizing appropriate responses and stress management. Also, the student will learn what are and what are not barriers to communication.
The intent of this course is to develop carrier-related communication skills which will enable students to send and receive messages more effectively to co-workers, supervisors and prospective employers through speaking, reading and writing.

To develop the student's knowledge of communicating effectively within prescribed business practices, both oral and written.

A technical writing course designed to prepare students for the writing done on the job. It covers the basic format for letters, memoranda and informal reports. It also covers the entire job search process, from finding where the jobs are to the handling of interviews.

A continuation of Communications 1 T14-C124, designed to improve the student's letter and memorandum writing style. It covers the informal investigation report, oral presentations and discusses the techniques for getting along on the job and cultivating a supervisory style.

A self-paced practical course that develops communication skills from four viewpoints: job-seeker, employee, junior supervisor and small business owner. The course is tailored to fit the needs of individual students and the requirements of advisory boards.

A self-paced practical course that develops communications skills from four viewpoints: job-seeker, employee, junior supervisor and small business owner. The course is tailored to fit the needs of individual students and the requirements of advisory boards.

A self-paced practical course that develops communication skills from four viewpoints: job-seeker, employee, junior supervisor and small business owner. The course is tailored to fit the needs of individual students and the requirements of advisory boards.

This course develops career-related communication skills, knowledge and behavior. The purpose is to enable students to send and receive messages more effectively and efficiently through writing, speaking and listening.

This course deals with the protection of the water supply from non-potable water and covers the causes of backflow, types of backflow prevention devices, application of device, maintenance and testing of device and health aspects.

The practical part of the course involves testing of devices with various test kits and recording the information accurately so that the values efficiency can be established.
T15-P007 Hot Water Heating — Theory
An introduction to space heating, types of heat, transfer equipment, hot water boilers, circulation pump and controls, a study of hot water systems.

T15-P008 Hot Water Heating — Practical
Hanging and grading mains, installing radiation, connecting to the boiler, testing, operating the system.

T15-P009 Basic Sprinkler/Fire Protection — Theory
The Piping Trades students will be given an introduction to identification, assembly, operation of the common sprinkler and stand pipe system used today.

T15-P010 Basic Sprinkler/Fire Protection — Practical
The Piping Trades students will do roll and cut groove assembly of steel pipe and will demonstrate their ability to install some of the devices used in fire protection systems.

T15-P011 In-Industry Work Experience
1) To provide Piping Trades pre-employment students with practical on-the-job experience.
2) To expose students to actual job conditions and industry requirements. 3) To help instill good work habits and a positive attitude in students. 4) To introduce plumbing-heating and sprinkler contractors to possible candidates. 5) To make plumbing-heating and sprinkler contractors aware of Red River Community College programs and students with a view to providing input.

T15-P012 Introduction to the Piping Trades and General Information
Types of work, tools, materials, equipment and safety.

T15-P013 General Shop Work — Practical
Identification and use of tools, fittings, and materials, material handling, safety and rigging, use of torches and lead work.

T15-P014 Piping and Materials — Theory
Cast iron, galvanized iron, copper, lead, plastic, glass: use of each, methods of assembling, supporting, handling, storing and types of tools used with each.

T15-P015 Piping and Materials — Practical
The joining of cast iron, galvanized black iron, copper, plastic, and asbestos cement pipe by methods such as screwed, soldered, caulked, mechanical joints, glued, vicianic, flanged and compression ring fittings. The assembly of valves and some basic pump installations.

T15-P016 Regulations and Project Installations — Theory
Interpretation of plumbing code, sizing of sewers, drains, stacks, vents, etc., drawing layouts and constructing actual installations from layouts and blueprints.

T15-P017 Project Installations — Practical
With the knowledge of materials and code previously covered, rough-in a common bungalow, rough-in a rural home, rough-in a commercial project, install fixtures for residential and commercial, do water piping and test all projects.