This calendar is issued under the authority of the Manitoba Minister of Education and Training and is published by Red River Community College 2055 Notre Dame Avenue Winnipeg, Manitoba R3H 0J9
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 Province of Manitoba, 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.

Red River Community College is operated by Manitoba Education and Training with financial assistance provided by the Government of Canada.
Visitors who require parking accommodation should report to the commissionaire on duty.
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**Women's Programs:**

(see ACT For Women, Pre-Technology Training for Women)
A MESSAGE FROM THE PRESIDENT

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. We are extremely proud of our many graduates who continue to be very successful in their chosen careers.

The concept of security has been changing from being provided by a particular employer to being 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 grow throughout your life. RRCC is committed to providing courses and programs to assist you in your entire career.

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

A. Knowles

Dr. Tony Knowles
President
# POLICIES, PROCEDURES & SERVICES

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APPLICATION PROCEDURES

1. Application forms and additional information on day programs may be obtained by writing the Admissions/Registration Office, C306-2355 Notre Dame Avenue, Winnipeg, Manitoba, R3H 0J9 or by telephoning 632-2327/632-2472. Information is also available at the college regional centres. (See Continuing Education (page A-28) for a listing of regional centres and information on Continuing Education programming.)

2. As some programs at Red River Community College have a limited number of seats available, applications for admission to a program should be submitted as early as possible.

3. Applications must be accompanied by legible official mark statements as proof that applicants meet the necessary program prerequisites. Applicants lacking specific prerequisites will be referred for appropriate upgrading. Additional information may be required of applicants at a later date. Candidates applying to the college are required to submit all documentation with English translations. Incomplete or inaccurate information delays processing of the application.

Please note that academic documents are not returned to applicants and that applications and documents are not retained by the college for applicants who are not accepted for training. If the applicant reapplies to the college at a future date, a new application must be completed and supporting documents resubmitted.

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 Admissions/Registration Office at 632-2327 in regard to the deadline date for a specific program.

4. Applicants for programs other than special selection or contract training will be admitted on a first-come, first-served basis. Because acceptances are made in the order in which completed applications are received, applicants are encouraged to apply early. Applications are considered to be complete when all admission requirements have been met.

5. Selection of applicants for some medical and health science programs is conducted by the cooperating hospital or agency selection committee. Applications for these programs should be submitted directly to the college for review of the requirements prior to submission to the selection committee. Radiation Therapy, Medical Radiological Diagnostic Technology and Medical Laboratory Technology are external selection programs.

6. Applicants are advised in writing of their application status, described by one of the following terms:

a) Accept. The application is complete when all admission requirements are met and a place is reserved in the program for the applicant. Acceptance is non-transferable from term to term or program to program.

b) Conditional accept. An applicant may be conditionally accepted for a Grade 12 prerequisite program based on receipt of an official Grade 11 final transcript, Grade 12 term marks, and confirmation of enrollment in the required Grade 12 subjects. Acceptance is issued only after receipt of proof of successful completion of prerequisites must be received by July 15.

c) Wait List. If there are more qualified applicants than can be accommodated in a program, applicants who are not accepted will automatically have their names placed on a waiting list. This list will be kept current through periodic surveys to determine if applicants are interested in upcoming entry dates for training.

d) Incomplete. The applicant has not provided the required information, and has been advised that no further action on the application can be taken until the documentation is received.

e) Process. The applicant has met basic entrance requirements but still must complete additional specific requirements such as a selection interview, testing, portfolio, etc.

f) Reject. When the applicant fails to meet full admission requirements, has not submitted the necessary information as requested by the college within the time specified, has not paid the pre-registration fee by the time specified in the acceptance letter, or has requested the application be cancelled, the application is assigned a reject status. Should rejected applicants wish to be considered for future acceptance, they must submit a new application for the next intake of their chosen program.

ADMISSION PROCEDURES

1. Definition of an Applicant

An applicant is an individual who has applied to Red River Community College on an official college application form.

a) Only applicants will be processed for admission.

b) An applicant must have an acceptance letter, signed by the Director of Admissions/Registration or designee, (or a CEIC-sponsored student document) to register for a program.

c) An applicant's acceptance by the college for training does not imply acceptance by an external agency for sponsorship.

2. Age Requirement

Although the applicant must be at least 16 years of age, there is no upper age limit. High school students are encouraged to remain in high school to obtain the best basic education possible prior to attending college.

3. Sponsored Applicants

A number of agencies, such as Canada Employment & Immigration
Commission, Workers Compensation Board and several social services agencies, under a variety of arrangements, sponsor students for training at Red River Community College. Applicants should direct requests for information on funding to the sponsoring agency. Once sponsorship arrangements have been completed, the applicant must arrange to have an official letter sent by the agency to the Admissions/Registration Office. The letter must outline which expenses are to be covered, i.e. tuition fees, Students' Association fees, books and supplies. Where the Students' Association fee is not paid by the sponsoring agency, it will be the student's responsibility to pay the fee. Please note that an applicant's acceptance by the college for training does not imply acceptance by an external agency for sponsorship.

4. Applicants with Physical Disorders or Handicaps
An applicant must be capable of handling all program requirements. The physical demands in a number of training programs may prevent some students from performing satisfactorily or from functioning within college safety standards. Certain disorders could also affect employment possibilities following graduation. Some examples of conditions which may affect suitability for training include: color vision deficiency, back/leg/shoulder problems, hearing impairment, coordination problems, defective vision, allergies, skin disease, communicable diseases, epilepsy, arthritis, diabetes, cerebral palsy and spinal cord injury.

Applicants with physical disorders or handicaps should discuss their training goals with their physicians. Additional information is available from the Educational Support Centre, the Health Centre and from Counselling Services.

5. Academic Requirements
Applicants must hold at least the minimum academic prerequisites specified for each program or be accepted as a mature student. As entrance requirements are subject to change, applicants should confirm prerequisites with the Admissions/Registration Office. It is to an applicant's advantage to acquire the best preparatory education possible, prior to entering a program at the college.

6. Mature Student Admission
Mature students must be 20 years of age or older by September 30 in the year of registration. All mature applications are referred to the Director of Admissions/Registration to determine applicant suitability. Applicants must include with their applications, a detailed resume, which may assist in determining eligibility. Testing by the college may be necessary.
(Note: Applicants must also submit transcripts.)

If an applicant is considered to be academically unprepared following testing, information on other appropriate college programs and/or sources of academic upgrading will be provided.

Age alone cannot substitute for academic knowledge, particularly in programs that are heavily oriented towards mathematics and the sciences. Therefore, some mature student applicants will be advised to complete those specific subjects required for entry to a program as a first step in gaining admission.

N.B. This revised policy supersedes Mature Student information in the program descriptions in Section B of this calendar.

7. Applicant Priority
Admissions preference will be given to applicants in the following order:
a) Canadian citizens or landed immigrants, residing in Manitoba, and participating in contract training;
b) Canadian citizens or landed immigrants, residing in Manitoba, and recipients of approved scholarships;
c) other Manitobans who are Canadian citizens or landed immigrants;
d) Canadian citizens or landed immigrants residing outside of Manitoba; and
e) others.

Each year, the college accepts a limited number of students who are citizens of other countries but who are residing in Canada. The admission of Visa applicants is subject to limitations affected by the program capacity and demand by Canadian citizens and landed immigrants. In oversubscribed programs, student places are reserved for Manitoba residents exclusively.

Please note that Red River Community College does not accept applications from outside of the country nor will it consider those individuals on visitor, work or tourist visa.

8. Special Selection Programs
Programs that do not admit applicants on a purely first-come, first-served basis are considered special selection programs and will be identified as such in the calendar program descriptions.
a) These programs sometimes require additional documentation, portfolios, testing, interviews, or demonstration of special aptitudes and skills.
b) For those applicants who meet these additional criteria, the first-come, first-served policy will apply.
c) Information on the criteria used for special selection programs is available in the calendar program descriptions and the program brochures.
d) Because some special selection programs may have an application deadline, applications must be submitted as early as possible.

Each applicant will be notified of the results of his or her interview or test. When an applicant is refused admission to a program, based on tests and/or an interview with a selection committee, a suitable upgrading or career alternative will be recommended or suggested.
9. English Language Proficiency
As English is the language of instruction in all programs at the college, an adequate knowledge of written and spoken English is essential for admission. All applicants will be required to demonstrate proficiency in the language by:

a) presenting proof of achievement in English at the grade level designated as the academic prerequisite for the program for which he or she is applying, or the specified equivalent; or

b) successfully completing a reading and language skills entrance test administered by Red River Community College; or

c) presenting results of a recognized test of English (TOEFL) at a minimum score level of 550. To obtain an information bulletin which outlines TOEFL world-wide test locations and application procedures, applicants should contact:

Test of English as a Foreign Language,
CN6151
Princeton, New Jersey
08541-6151 U.S.A.

10. Applicant Suitability
The college reserves the right to refuse admission to applicants who are deemed unsuitable for entry into the programs for which they have applied.

11. Part-time Students
Subject to the availability of space, courses within a program are open to part-time students who meet the program prerequisites. Persons interested in taking partial programs must have the approval of the appropriate Department Head or Dean.

12. Senior Citizens
Although opportunities are limited, should vacancies exist in a program after all qualified fee-paying students are accommodated, qualified individuals who are 60 years of age or older and who are not employed full-time, will be accepted on a first-come, first-served basis and will be exempt from the payment of the program tuition fee. Any other program fees (including Students' Association fees, lab fees, etc.) must be paid by the student. Proof of age will be requested.

13. Evaluation of Transcripts for Admission
The academic entrance requirements are specified in each program brochure and the program descriptions in this calendar. Educational documents originating outside Manitoba will be evaluated by the college Admissions Committee, only for the specific program for which the application has been submitted. General evaluations for purposes of employment or attendance at other educational institutions are not provided by the college Admissions/Registration Office.

14. Falsified Admissions or Education Documents
Any applicant submitting falsified documents will be referred to the appropriate authorities for prosecution under the Criminal Code of Canada. Forgery can result in a prison sentence of up to 14 years.

15. Medical and Hospital Coverage
Medical and hospital plan coverage is a mandatory requirement for Visa students accepted by the college. Proof of coverage must be provided to the Admissions/Registration Office at least three weeks prior to program start date. For information on medical and hospital plan coverage, contact the Admissions/Registration Office at 632-2203.

16. Occupational Entrance High School Program
Students who have completed an Occupational Entrance High School Program may be eligible to apply for some college programs. However, applicants may be tested in the required subject in order to ensure basic skill preparation.

17. Financial Assistance
The main sources of financial assistance available to college students are listed below. If students are having difficulties in obtaining assistance and need advice, they should contact the Student Awards Officer, C306, or a college counsellor in C115.

a) Manitoba Student Financial Assistance Program. This program is a source of financial assistance for any Manitoban who wants to obtain an education and whose finances are inadequate. It is intended to supplement, but not to replace, the student's own resources and those of his or her immediate family. A basic requirement for assistance is complete information about the applicant's financial situation.

Applicants should note that it takes a minimum of eight weeks to process applications and should, therefore, apply immediately. Applicants do not have to be accepted by the college before applying for Student Financial Assistance if applicants delay application for Student Financial Assistance, until September, they can expect further delays in the processing of applications of up to twelve weeks or more. For further information on financial assistance and entrance scholarships, bursaries, and other awards, students should contact the Student Awards Office.

b) Canada Employment and Immigration Commission Training Program (CEIC). CEIC sponsorship may be available for some programs of one year's duration or less. For full information on eligibility, applicants should contact their local CEIC office.

c) Scholarships and Awards. For further information, prospective applicants should refer to the Awards, Bursaries and Scholarships section in this calendar.
REGISTRATION PROCEDURES

1. Acceptance
Applicants are notified, in writing, of their acceptance and are required to pay a program pre-registration fee to ensure a place is reserved for him or her in the program. Should the applicant subsequently decide not to register, this payment is non-refundable and non-transferable.

2. Vacancies
Vacancies may exist in some programs or occur in others on or after registration day because of late cancellations. Applicants are selected from the wait list to fill last-minute vacancies.

3. Payment of Fees
A statement of procedures for payment of fees is sent with the acceptance letter. Upon payment of fees, a validated tuition fee receipt is issued to the applicant to confirm that payment has been received. Applicants are cautioned that non-payment of fees by the due date may result in cancellation of the application or registration status unless other previous arrangements have been made with the appropriate Dean. Please note that all fees are subject to change without notice.

4. Registration
For official student status, accepted applicants are required to report for registration, in person, at designated areas on campus on the date and time specified in the acceptance letter. All accepted and conditionally-accepted applicants must complete the registration process.

5. Student Identification Cards
The student ID card, issued as part of the registration package, is required to obtain instructional materials, athletic supplies, and for accessing the Library, physical education facilities, and Students' Association activities. Because the student named on the card is responsible for any loss of or damage to materials used or borrowed with this card, he or she must report the loss of a card immediately to the college Security Office, C105A, telephone 632-2323. A charge will be made for the replacement of this card. The student ID card is not transferable.

6. Late Registration
Applicants who, for unforeseen difficulties, are unable to register at the appointed time and date, but who still wish to take the program at that or a subsequent time, must formally advise the Director of Admissions/Registration of their intentions no later than the original registration date. Failure to notify the Director may result in cancellation of applicant status and necessitate re-application and re-processing.

7. Mark Transcripts
The official transcript is a comprehensive, cumulative student education record. It lists all the studies that the student has undertaken to the date of issuance, and whether or not these studies were successfully completed. A transcript may be requested by a student upon completion of a Transcript Request Form, available at the Admissions/Registration Office, and the payment of a nominal fee. Students should note that most educational institutions and many employers require that the transcript be mailed directly to them by the college. However, a transcript will not be issued without the written authorization of the student.

8. Confidentiality of Student Records
The information available to the public concerning a Red River Community College student is limited to the verification of:

a) whether or not the student attended a specific program between given dates; and

b) whether or not the student successfully completed the program. Any additional information cannot be released without the written authorization of the student.

Please note that all policies and procedures are subject to change and are reviewed on a regular basis.
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 that will be made available at the time of registration. If students are in doubt as to any aspect of these policies and procedures, they should consult their Department Head or Dean.

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 will only be released to external parties with the written consent of the student.

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

ATTENDANCE/ABSENCE FROM CLASS
Students will be 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 Department Head. Regular attendance will be expected and may be mandatory for some courses in the various Divisions. Students will be 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 Department Head 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 Department Head and make alternate 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 and apprentices are required to comply with the attendance policy established by the Apprenticeship and Training Branch, Manitoba Labour.

TRANSFER OF CREDITS WITHIN RED RIVER COMMUNITY COLLEGE
Students wishing to transfer to another program should contact their Department Head. An enrolled student may be permitted to transfer from one program to another or from day to Continuing Education programs provided:

(a) there is space available in the course/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 Department Heads of both departments.

Courses submitted for credit to Continuing Education certificate programs must meet the following criteria:

- the course has been examined;
- the student has a minimum of a "D";
- the course is equivalent in content and duration to the Continuing Education course;
- the standard of the course/program is acceptable to Continuing Education;
- the course was completed within the past eight years.

Any Continuing Education course codes which include "N" (e.g. B11-A191N Accounting), indicates that those courses are credits to the day program.

Credits from day courses may be granted for up to a maximum of 50% of the courses in a Continuing Education program. Students may apply to take challenge examinations and tests to obtain additional credits above the maximum of 50%.

TRANSFER OF CREDITS TO RED RIVER COMMUNITY COLLEGE PROGRAMS
Students transferring to Red River Community College from another recognized training or post-secondary educational institution may be granted some credits toward a Red River Community College certificate or diploma. The following guidelines will apply:

- a written request for credit must be submitted to the Department Head or Dean 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;
- the student has the necessary pre-requisites for the program;
- transfer credit will be granted only to students registered in a program at Red River Community College;
- 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;
- individual courses will be evaluated for credit by the appropriate Department Head. Length of time since the course/program was taken will be a factor considered in granting of credit. For Continuing Education Program students, the evaluation will be conducted by the Dean, Continuing Education, or designate, in collaboration with the appropriate academic Dean and/or Department Head if credit is being sought in a day program;
f) it will be the student's responsibility to provide original or certified transcripts and course descriptions to assist in the assessment of equivalency;

g) for the purpose of evaluating previous studies, 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;

h) 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 evening courses, by the Dean, Continuing Education;

i) credits granted on a transfer basis will appear on the student's record as CR, with no grade point value;

j) no student will be granted more than 50% 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.

CREDIT FOR PRIOR LEARNING/CHALLENGE FOR CREDIT
Credit for prior learning 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 Admissions/Registration or the appropriate Department Head to obtain specific information regarding 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 will be determined by individual departments and progression requirements will be formally communicated to students at the beginning of the program.

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

Students who fail to make satisfactory progress and/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 period. If these conditions are not met, the student will be required to withdraw from the program.

EVALUATION OF STUDENT PROGRESS
The regulations pertaining to the method of evaluation for courses will be 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 will be 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 will 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, and tests will 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 alternate arrangements with their instructors/department heads.

2) Evaluation of Students in Competency-Based-Learning Programs - Students will be evaluated on identified course competencies on a module-by-module basis. The method of evaluation, along with achievement expectations for each module, will be evaluated individually and given an individual rating.

For most competencies, students will 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. Department heads 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 will be 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 will be 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 will be established for completion of a minimum level of competencies. Students, unavoidably absent
because of some acceptable cause, must advise their instructors and Department Head and make alternate arrangements for completing requirements.

3) Evaluation in Co-operative Education/Work Experience - Students who register for programs with co-operative education work terms, or in programs that have practical/work experience, must accept that 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 a student's achievement in each course of a program will be denoted by a letter grade, as follows:

<table>
<thead>
<tr>
<th>LETTER GRADE</th>
<th>GRADE POINT VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.0</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>
<tr>
<td>CMP</td>
<td>N/A</td>
<td>Completed</td>
</tr>
<tr>
<td>NC</td>
<td>N/A</td>
<td>Not Completed</td>
</tr>
<tr>
<td>MR</td>
<td>N/A</td>
<td>Mark Recorded in Subsequent Terms</td>
</tr>
<tr>
<td>...</td>
<td>N/A</td>
<td>Mark Not Yet Recorded</td>
</tr>
<tr>
<td>M</td>
<td>N/A</td>
<td>Mastery</td>
</tr>
<tr>
<td>NM</td>
<td>N/A</td>
<td>Non-mastery</td>
</tr>
</tbody>
</table>

Departments equating 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 will reflect the relative weighting of that course within a program of study. These credit hours will be 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) will be calculated by multiplying the grade points achieved in each course by the course credit hours. The total product thus obtained will be divided by the total credit hours for the courses taken.

(c) Cumulative Grade Point Average - The Cumulative GPA will be 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. It includes the original grades and subsequent grades of any course repeated.

(d) Student Transcripts - Terminating students in most programs will be provided with a transcript. Each terminating student in a competency-based-learning program will be provided with a transcript of competencies attained. Graduating students will receive a transcript and a certificate or diploma.

**FINAL EXAMINATIONS**

Students who absent themselves from examination sittings without a valid reason acceptable to the Department Head 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 Department Head as soon as possible. Thereafter, the student must provide the Department Head 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 Department Head 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 will miss scheduled examinations through participation in an event that has the specific written approval of the college President, it is the student's responsibility to advise the appropriate Department Head, 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.

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>Course</th>
<th>Credit Hours</th>
<th>Grade Points</th>
<th>GPA = Total Grade Points Earned</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>
<tr>
<td></td>
<td></td>
<td></td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Total Grade Points = 39 = 2.44
Total Credit Hours = 16
and must meet with the Department Head to determine appropriate action.

1) Supplemental Examinations - Students who receive a failing grade in a course may write a supplemental examination if supplemental are allowed for the course and in accordance with the following guidelines:

a) supplementals will generally be permitted only where it is feasible to evaluate a student's mastery of a course by written examination;

b) 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;

c) the student must have an overall term grade point average of 1.5 to receive supplemental privileges in a failed course;

d) students who fail theoretical courses in the trades programs will be 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;

e) students who fail courses in the Business Accountancy program will be permitted to write supplemental examinations at the end of the term provided they have not failed more than two courses;

f) if a student fails a course which is a prerequisite for a course in the next term, he or she will be 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;

g) 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;

h) the time and location for the writing of supplemental examinations will be arranged by the Dean or Department Head;

i) part-time students who have failures will be allowed to write supplemental 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 will have to re-take the failed course.

When a student writes a supplemental exam, the results of this exam will be 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 writing supplemental examinations in trades programs, will not receive a grade greater than a pass.

2) Retention of Examination or Major Term Test Papers - All final exam papers will be kept by instructors for a minimum of one month into the next term (or lavel, in the trades programs). Major term tests not returned to students will be kept for a minimum of one month after the test. If any challenges or academic complaints 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 Department Head/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 those requirements in order 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 will be charged a fee equal to 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. Any of these activities are unacceptable and will minimally result in a failing grade in the particular assignment or course and may 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 Department Head. The deadline for withdrawals will be three weeks prior to the first day of the final trimester/semester/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 voluntarily withdraw from their complete program of studies must inform their Department Head or instructor. The Department Head 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 Accounts Receivable. A student who withdraws without completing the necessary procedures noted above will not be eligible for any refund of tuition and fees.
GRADUATION REQUIREMENTS

1) Student Readmission to Program - Students who have voluntarily or involuntarily withdrawn from a program must apply for readmission through the Department Head. When a student reappplies to a program, he or she is subject to the admission/readmission requirements for that program. Upon receiving the written recommendation of the Department Head, the Director of Admissions/Registration will readmit the student based upon space availability in the program.

A student, who has been suspended from a program, will be eligible for the first available seat in the appropriate term once the period of the suspension 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.

2) Clearing of An Incomplete Course - Students who have not completed all the requirements of a course must make arrangements with the Department Head to clear the deficiency within one year.

3) 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 in a day program or eight years in 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.

4) Residency Requirements - Students must attain at least 50% of their program credits at Red River Community College to be eligible for the College's diploma or certificate.

1) Diploma - Diplomas are issued to graduates of day programs that have a two-year duration or longer and include formal evaluation of students.

2) Certificate (Regular "Day-time" Programs) - Certificates are normally issued to graduates of day programs that are five months or less than two years in duration and include formal evaluation of students.

3) Certificate (Continuing Education) - Certificates are issued to graduates of Continuing Education programs that are made up of six courses and have a duration of at least 240 hours. Each of the courses must include a formal evaluation. These certificates are distinguished from the day-time certificates by their different typography.

4) Certificate (Market Driven Training and Other Training Involving a Sponsor) - Certificates are issued to graduates of Market Driven Training programs eight weeks to five months in length. These programs must include formal evaluation. Often, the program will have 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.)

5) Certificate of Achievement - A Certificate of Achievement is issued to graduates of certain single courses of 40 hours or more duration. Credit may or may not be given toward regular College courses. There is some form of evaluation included.

6) Certificate of Completion - A Certificate of Completion is issued to those students who complete a course that has no evaluation and might vary in length from one day to several. Total hours of instruction will be indicated on the certificate.

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 is not given on the document.

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

College diplomas and certificates will be issued by the Admissions/Registration Office to students who have satisfied all program requirements. This policy sets out the conditions that determine which type of document will be granted.
PAYMENT OF TUITION AND STUDENT FEES

Full-time Program Rate

Tuition Fees. All full-time programs are assessed at the annual rate of $750.00 (based on a 10-month program). 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.

Student Fees. Student fees are $80.00 per student annually, and include $6.00 per month for Students' Association fees and $2.00 per month for the Students' Association Building Fund. The fees are payable with the tuition fees on or before program registration dates for the enrollment period. (The student fee applies only to students on campus.)

Trimester Programs. Tuition fee is $250.00 per term; student fee is $32.00 for the first trimester and $24.00 each for the second and third trimesters. Total annual tuition and student fees are $830.00.

Semester Programs. Tuition fee is $375.00 per term; student fee is $40.00 per term. Total annual tuition and student fees are $830.00.

One-Term Programs. Tuition fee is $750.00 plus $80.00 student fee. Total annual tuition and student fees are $830.00.

All Rates Listed Above Are Calculated For A 10-month Academic Year.

Other. Fees for programs of other than 10 months' duration will be prorated based on the number of months plus $8.00 per month student fee, and will be assessed for the full term.

Note: Tuition and student fees associated with Co-operative Education programs are currently under review.

Part-time Program Rate

Tuition Fees. The fees will be the greater of $3.00 per instructional hour or $75.00 per month of attendance. (Fees will be rounded to the next full dollar.)

Student Fees. $8.00 per month or portion thereof. (For students taking less than six hours per week, the student fee is $1.00 per enrollment period.)

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

Timing and Collection of Tuition Fees

The financial policy of the Manitoba community colleges indicates the following:

1. Tuition fees are payable on or before registration date but not prior to the pre-registration period.

2. Pre-registration payments must be paid in accordance with the date indicated on the letter of acceptance.

3. Where a third party is billed for tuition fees, a letter of commitment must be provided to the Admissions/Registration Office on or before the registration date. Tuition 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.

4. Where a student registers for a term after the scheduled date for registration, tuition and student fees will be assessed as if the student had registered on the scheduled registration date. Tuition amounts for such students are due on the day the student registers.

5. Students whose tuition amounts remain unpaid after the date the tuition is due will be given 14 calendar days grace. Students whose tuition 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 $25.00 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.

6. Formal notice shall be provided by letter mailed to the student address as recorded by the Admissions/Registration Office. Failure to receive formal notice shall not constitute grounds for inadequate notification.

7. Students who are terminated for failure to pay tuition fees (see #5 above), and are subsequently reinstated, will be charged a reinstatement fee of $50.00 as well as the $25.00 late fee. These fees are payable in addition to the fees previously assessed. Reinstatement is not automatic.

8. Canada Student Loan recipients will have their tuition and student 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.

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

Sponsored Students

Where tuition fees are to be billed to a third party, a letter of commitment is to be provided to the Admissions/Registration Office before the registration date for the program. Tuition fees payable by a sponsor are due within 30 days from the date the sponsor is billed. Where tuition is billed to a third party, any refund shall be returned directly to the third party.

NSF Cheques

A penalty fee of $25.00 will be assessed when any NSF cheque has been received in payment.

REFUND POLICY

Tuition Fees

Applicants. Applicants withdrawing before program commencement will be eligible for a refund of tuition, less the non-refundable pre-registration 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 $75.00 non-refundable registration fee. (Example: A student who registers in September and also terminates in September will lose $75.00 + $75.00 + $16.00 = $166.00.) Thus, the following refund payment schedule:

- Accepted applicants who do not register - amount paid less pre-registration fee of $75.00.
- Registered students leaving in first month - amount paid less $166.00.
- Registered students leaving in second month - amount paid less $249.00.

Student Fees
Students assessed student fees at the rate of $8.00 per month, and who terminated after program commencement are eligible for a refund of fees paid, less $16.00 if terminating during the first month, and $8.00 for each subsequent month or portion thereof.

Applying for Refund/Withdrawal Procedures
Refund requests are to be made through the Accounting Office, C212, Red River Community College.

Students wishing to withdraw from the college must inform their Department Head or instructor who will complete a REG-16 form authorizing their eligibility for a refund of tuition fees.

A copy of the completed REG-16 and tuition receipts should be submitted immediately to Accounts Receivable, 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 Accounts Receivable 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 pre-registration 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 $25.00. Subsequent to this, refunds shall not be granted. (Note: A $10.00 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 #4 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 pre-registration fee.
   b) Students terminating after program commencement will be eligible for a refund of tuition paid, less the non-refundable registration fee, and the expended portion.

7. Part-time students. Refunds of tuition fees will be considered on the same basis as outlined in #6 above with the replacement of registration fee by administration fee.

8. Conditionally accepted applicants. Pre-registration 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, Admissions/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 CEIC Sponsorship
A Provincial Entry student who is converted to a CEIC sponsorship status will be eligible for a refund of tuition paid, less any expended months of training. The student is responsible to apply for a refund.
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.

HARASSMENT
Red River Community College has in effect a harassment policy in conjunction with the Post-Secondary, Adult and Continuing Education and Training (PACE) Division of Manitoba Education and Training. This policy is applicable to any incident of harassment involving a college employee and a student or client, or any incident involving two students or clients.

Incidents in which both parties are employees of the province of Manitoba (i.e. employer and employee, employee and employee) will be addressed by the Civil Service Commission policy on sexual harassment.

The college recognizes its responsibility for the creation and maintenance of a safe and healthy working and learning environment and will not tolerate harassment in any form, whether it occurs on campus, at off-campus locations, or in relation to college activities. A Harassment Advisor is available to provide confidential information and advice and can be contacted in C415 or by telephone at 632-2251.

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 632-2375.

SMOKING POLICY
Red River Community College campus is designated as a non-smoking facility. Students and staff are permitted to smoke only in those areas identified for that purpose. All other areas of the college are non-smoking areas.

WITHOLDING OF ACADEMIC RESULTS & 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 and Media Services, Room C715, telephone: 632-2331, or the Students' Association Office, DM20, telephone: 632-2375.

Please note that all policies and procedures are subject to change and are reviewed on a regular basis.
STUDENT SERVICES

ADMISSIONS/REGISTRATION SERVICES
The Admissions/Registration Office 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 Admissions/Registration Office is located on the third floor of Building C. The telephone number is 632-2327.

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 get to see the right person at the right place, with as few hassles as possible. Other assistance will be provided as needed.

2. 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 632-2335. Appointments are usually made between the hours of 8:30 a.m. and 4 p.m., Monday through Friday. The office is open and staffed at noon.

COUNSELLING SERVICES
1. 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 student's counsellor. Individuals or groups of students can also receive assistance in job-seeking skills e.g. applications, resume writing, and interview skills.

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TUTORIAL CENTRE
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 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, including noon hour and late afternoon workshops. Staff in the Tutorial Centre and the Reading Lab strive to work closely with the students and their course instructors in assessing and overcoming the students' barrier to optimum learning and student success.

Students can make appointments in person or by telephone:

<table>
<thead>
<tr>
<th>Service</th>
<th>Location</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial Centre</td>
<td>Building C Room CM25</td>
<td>632-2451</td>
</tr>
<tr>
<td>Reading Lab</td>
<td>Building D Room D213</td>
<td>632-2280</td>
</tr>
</tbody>
</table>

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, 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 3:15 p.m., Monday through Friday.

LIBRARY SERVICES
The Library is located on the Mall Level across from the Tower Lounge between buildings D and F. It offers a wide range of resources and services to support program assignments and to encourage the general pursuit of knowledge, beyond specific class requirements.

The Library contains a large collection of books, magazines, 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.

A microcomputer area with several IBM PCs and 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.

Instruction on how to use the Library is given to classes when arranged by instructors. Individual instruction will be given to any student 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; in operating AV equipment; and in generally finding your way around the world of information. Don't hesitate to ask.

The Library also provides coin/card operated photocopiers and interlibrary loan service. Should the Library's collection not contain the book or article you require, the Library staff will try to locate the item in another library and, either refer you to that library, if it is in the city, or have it sent 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.

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 for them. Students are responsible for returning borrowed materials by the date they are due. Late returns will be subject to fines.

Students are also 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.

Hours of service are posted in the Library. For information on Library hours, call 632-2332. Other useful telephone numbers: Information and Reference: 632-2233 AV Services: 632-2231

HEALTH SERVICES
The Health Centre is located on the Mall Level, HM08. The hours are 7:45 a.m. to 4:15 p.m., Monday through Friday. It is staffed by registered nurses.

Health services are available to all students on campus. No appointment is required. All visits and consultations are confidential and do not become part of the permanent student file.

Injuries and sudden 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 in the Health Centre for those who may need it. Appointments can be arranged with dentists, eye specialists, physicians etc.

The Health Centre offers personal health counselling and teaching. Health information is available upon request. Immunizations are administered to all health related courses. Numerous wellness programs are in place during the year and all students are encouraged to participate.

Students who are subject to a chronic condition such as diabetes, epilepsy or asthma are asked to visit 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 event of an emergency.

All injuries that occur on campus must be reported to the Health Centre. Some of the students will have Workers Compensation coverage, which require the filing of a claim.

PHYSICAL EDUCATION & 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, Child Care, Dental Assisting and Developmental Services.

We offer at no extra charge to our students and staff the use of a banked, oval jogging track, a fully equipped weight room complete with exercise cycles, rowers and stepping machines,
lockers, towel service and one of Manitoba's largest gymnasiums.

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 labour 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 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.

Physically disabled students including visually impaired, learning disabled and deaf and hard-of-hearing 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 Office.

The Centre is located in D102A, on the Plaza Level of Building D. The telephone numbers are: 632-2381 or TDY 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 632-2437.

OTHER STUDENT SERVICES
Please note the following telephone numbers which may be useful to some students:

Day Care Centre 632-2244
Women's Programs 632-2271
Reading Lab 632-2280

WOMEN'S PROGRAMS
The Women's Programs department serves as an advocate for female students, providing support services and liaising with other college staff and bodies as well as external community services concerned with women's access to educational and employment opportunities.

This department is here to assist female students who are experiencing problems which are impeding their academic progress. These may be of a financial, personal or academically related nature. The department will refer students with serious personal problems to the appropriate resources.
A particular focus of this department is on non-traditional training programs for women and the problems resulting from the unique dynamic of being female in a male-dominated environment. This department is responsible for the Pre-Technology for Women and ACT for Women programs.

In liaising with other community agencies, the department is able to provide not only information and referral to students, but is able to assist the clients of these agencies in accessing appropriate educational programs. In this capacity, the Women's Programs department is able to encourage women to examine alternatives to the traditional occupational areas they have normally entered.

The Women's Programs department is located in D101. The telephone number is 632-2271. You are invited to stop by and discuss your concerns.
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 Department Head or the Student Awards Office, Building C, Room 306.

**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 ability
(b) participation in college activities
(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.

**Harmony International**
$250 presented annually to a physically disabled student enrolled at the college. Inquiries should be directed to the Educational Support Centre.

**Birks Family Foundation Bursary Plan**
Students whose parents or guardian are employed by Henry Birks & Sons Limited or its subsidiaries and affiliated companies (“Birks”) may apply directly to the foundation for bursary assistance. Funds are also available for students 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, 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.

**The Canadian Army Welfare Fund**
Bursary awarded to a student for tuition fees and textbooks. The family must be a former member of the Canadian Army and must have served between October 1, 1946, and January 31, 1968. Application forms are available from the Base Financial Counsellor, CFB Winnipeg, Westwin, Manitoba, R3J 0T0, (telephone 895-5379).

**Canadian Forces Personnel Assistance Fund**
Loans are available to former or serving members of the Canadian Forces with at least 10 years service to enable dependents to pursue a post-secondary education. Applications forms are available from the Base Financial Counsellor, CFB Winnipeg, Westwin, Manitoba, R3J 0T0 (telephone 895-5379). Deadline for applications is June 30.

**Evelyn Bagot Memorial Scholarship**
In memory of the late Mrs. Evelyn Bagot, former manager of the College Bookstore, a $100 award 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 mental handicap and planning to involve themselves as volunteers or professionals and who are in need of financial assistance. Students must apply directly to 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.

**Icelandic Festival of Manitoba Scholarship**
The Wilhelm Kristjansson Memorial Scholarship of $250 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, 39 Keats Way, Winnipeg, Manitoba R3K 0S2. 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 Higher Education Awards
Imperial Oil Limited offers annually free tuition and other compulsory fees to all children or wards of employees and annuitants who proceed to higher education courses. Further information and application forms may be obtained from The Secretary, Committee on Higher Education, Imperial Oil Limited, 111 St. Clair Avenue West, Toronto, Ontario.

M.G.E.A. Bursaries
One bursary of $500 awarded in each area available to members of the M.G.E.A. (minimum one-year memberships) and dependents of M.G.E.A. members. For more information, contact the Manitoba Government Employees’ Association.

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
- Entrance award of $500 each 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 entering 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 RRCC in a full-time program. The recipient must be involved in a sport of Team Handball at any level, 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.

Myrta & 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 for registered Canadian Indians, non-status, and Métis students attending post-secondary institutions in Manitoba. Applications are available from the Student Awards Office, or the Manitoba Student Financial Assistance Branch, 945-6321.

The Royal Canadian Air Force Fund
Loans are available to a student for tuition and textbooks. The family must be a former member of the Canadian Air Force and must have served between October 1, 1945, and January 31, 1966. Application forms are available from the Base Financial Counselor, CFB Winnipeg, Westwin, Manitoba, R3J 0T0 (telephone 895-5379). Deadline for applications is June 30.

The Royal Canadian Naval Benevolent Fund
Financial assistance in the form of interest-free loans is available to members and former members of the Naval Forces of Canada or their dependents for purposes of attending college, university or other educational and vocational institutions. Bursaries are also available from the Chief Petty Officer Andrew McQueen Jack Educational Trust Fund. Contact RCN Benevolent Fund, PO Box 505, Station “B”, Ottawa, Ontario, K1P 5P6 for details, supplying full details of service, age and marital status, to establish eligibility.

The Soroptomist Training Awards
$500 award offered to mature women who require financial assistance to upgrade their education, technical or academic training in order to enter or reenter the labour 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 their second official 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 Bursary
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 the other to a male applicant. Criteria include demonstrated academic merit, school or community involvement and financial need. Scholarship applications, and transcripts, and letters of reference indicating school or community involvement must be received by July 31. Inquiries should be directed to Student Awards Office.

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

Westinghouse Canada Inc. Award
Westinghouse Canada has established a scholarship program to assist individuals to obtain a college education in electrical technology, manufacturing technology, business management, computer studies, business and other comparable programs. For further information, please contact the Student Awards Office or Westinghouse Canada (416) 528-8811, ext. 2402. Deadline for applications is June 30.

Winnipeg Police Association
Scholarship(s) to be awarded annually to a member of the City of Winnipeg Police Department, to members of their immediate families and/or to direct descendants of members of the department. 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, 189 Princess Street, Winnipeg, Manitoba R3B 1L2, by June 30 of each year.

Winnipeg Women's ORT (Organization of Rehabilitation through Training)
$75 book award for the college Library to benefit all Red River Community College students.

XANA Business and Professional Women's Association Award
$200 awarded annually to a female student in the second year of a business or professional program. Deadline for applications is March 1. Inquiries should be directed to the Student Awards Office.

BUSINESS & APPLIED ARTS

Advertising Association of Winnipeg Awards
Awards are presented to second-year Creative Communications and Advertising students working jointly 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 made annually to an outstanding student in Commercial Baking.

Canadian Food Service Executive Association
$500 bursary and trip to National Convention for Hotel and Restaurant Administration students. Good Host - $500 bursary and trip to National Convention. Canadian Food Service Executive Association (CFSEA) Junior Branch members only (paid directly to student). Contact CFSEA for applications and information.

Canadian Hospitality Foundation
$250 merit award for second-year Hotel and Restaurant Administration students. $2,000 CRFA Annual scholarship to first or second-year student who is or has been employed by a CRFA member. Deadline is March 15. $500 Food Service Purchasing Association of Canada Challenge award to first or second-year student. Deadline is March 15.

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

Canadian Public Relations Society – Manitoba Public Relations Scholarship
To be 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.

**Canadian Society of Club Managers – Val Mason Scholarship**
Awarded to Hotel and Restaurant Administration students demonstrating affinity for the industry and academic excellence who are employed by private clubs.

**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**
$250 Phil Hiebert Memorial Award 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.

**Fawcett Broadcasting Scholarship**
A $500 award will be presented annually by Fawcett Broadcasting to a first-year Creative Communications student who has completed all course work and who has shown talent and an inclination towards the radio field. The scholarship will be awarded to the student who “best demonstrates the creative use of the sonic medium through the writing, voicing, and production of a single commercial or promotional message.”

**Federated Co-operatives Limited Award**
$50 and a trophy presented annually to an outstanding 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.

**Stan Bogucki Humanitarian Award**
A scholarship of $100 and a plaque in memory of Stan Bogucki, department head of Teacher Education donated by the Industrial Arts Teacher Education staff, awarded 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.

**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 second-year Public Relations.
Manitoba Restaurant & Food Services Association Awards
Two $300 awards offered to graduating students: one in Hotel and Restaurant Administration; the other in Chef Training. Contact department for further details.

Manitoba Telephone System Scholarship
A cash award of $250 will be presented to a first-year 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.

Max Goldin Memorial Scholarship
A cash award 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.

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

Robin Hood Multifoods Limited
$50 annually to a student in Commercial Baking.

S.A.M. Advertising Awards for Excellence
Cash award to a second-year Advertising Art student who achieves the highest standing and demonstrates excellence in design and professionalism. Cash award 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
Awards totalling approximately $1,000 are presented as follows: four awards to Term 6 Business Administration students; and three awards to Term 3 Business Accountancy students based on academic performance.

St. James-Assiniboia Chamber of Commerce Scholarship
A $250 scholarship awarded to a St. James-Assiniboia resident attending the two-year Business Administration program at Red River Community College. Criteria:
(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
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.

Sunspun Food Service Award
$150 given annually to an outstanding student in Commercial Cooking.

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.

Winnipeg Business Club Inc. Award
An award of $400 will be given annually to a deserving student based on marks and participation in the 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 to a first-year Industrial Arts Teacher Education student for proficiency in construction at the introductory level and one $100 award to a third-year student for proficiency in construction at the advanced level.

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

Winnipeg Sun Scholarships
Two $250 cash awards for outstanding achievement one to an aboriginal student enrolled in the Creative Communications program and the other to an aboriginal student enrolled in the Advertising Art program.

Women’s Sales and Ad Club of Winnipeg Award
Administered by the S.A.M. Awards Committee, Cash award of $250 to be presented annually to a first-year female Advertising Art student on the basis of commitment, attitude, and overall marks in advertising.

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 Industrial or Trade Improvement courses (including Graphic Arts) with the exception of Car Owner’s Maintenance, Gunsmith, and Small Motors in the Continuing Education (evening/Saturday) Division. A complete listing of eligible programs and application forms for this bursary are available from the college Continuing Education Office, C116. Application deadline is four weeks after the commencement of each trimester.

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 trimester. Application forms are available from the college Continuing Education Office.

HEALTH, FAMILY AND APPLIED SCIENCES

Addison Wesley Award
Two book awards 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. This award is chosen by the Nursing Department Head and instructors.

Baxter - Canlab Award
Cash award for the Medical Laboratory Technology student who attains the highest standing in Clinical Chemistry.

C.V. Mosby Award
Book award presented in recognition of an individual with the highest score in Nursing Practice, Year 2. This award is chosen by the Nursing Department Head and instructors.

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

Cohn 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
Book award for 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 Child Care Services 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.
Diane Oryniak Memorial Bursary
Established in memory of Diane Oryniak, an instructor in the college's Nursing program. A bursary of approximately $200 will be awarded to a student in the R.N. Refresher program. Criteria will include satisfactory academic progress and financial need. Application forms are available from the Student Awards Office. The deadline for applications will be three days after the commencement of the program.

Dr. Greta Brown Scholarship
Established by the Manitoba Child Care Association in memory of Dr. Greta Brown and her distinguished contributions to the child care field. A cash award will be made annually to a first-year Child Care Services student entering the second year of the diploma program who has demonstrated professionalism and leadership - qualities that Greta upheld in her long and distinguished career.

Fisher Book Award
Cash award for the Medical Laboratory Technology student who attains the highest standing in Clinical Microbiology.

The Grummet Memorial Fund Bursary
$500 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
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 and a plaque to a second-year student in the Animal Health Technology program who excels in Small Animal Nutrition Clinic.

John Elsbury Memorial Scholarship
$300 to be awarded 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 for highest and second-highest total aggregate of marks obtained in all theoretical and practical phases of the program. One cash award for the highest technical proficiency in the practical aspects of the overall program.

Leica Canada Award
Awarded to the Medical Laboratory Technology student who attains the highest standing in Diagnostic Cytology.

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 Bursary
$500 to a student entering the second year of the Diploma 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
Plaque presented to a student in the Dental Assisting Level II program based on professionalism.

Manitoba Dental Association Award
Plaques presented to students in the Dental Assisting program based on academic merit and outstanding achievement. One to a Level I student and one to a Level II student.

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
$200 award to a second-year student in the Animal Health Technology program who demonstrates academic proficiency and practical technical abilities.

Nikon Canada Award
Awarded to the Medical Laboratory Technology student who attains the highest standing in Histotechnology.

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

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

Pat Lucki Memorial Award
Established by Elmwood Day Nursery in memory of Pat Lucki, a former Child Care Services graduate at the college. A plaque will be presented annually to a graduating Child Care Services student based on personal characteristics exhibited by Pat such as enthusiasm, love, thoughtfulness, and dedication to children, as recommended by the instructors and Department Head of the Child Care Services Department.

The Roning Group
$200 to a technology student displaying the greatest proficiency in oral and written communication, and in report writing.
Shell Canada Limited Scholarships
A $200 scholarship to a student entering second year of Instrumentation Engineering Technology and a $200 scholarship to a Bioengineering-Chemical Technology student who excels in the first year of the program.

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
$100 is given to a first-year student in the Applied Sciences department who demonstrates proficiency in the Analytical Chemistry Laboratory.

TRADES AND TECHNOLOGY

Armed Forces Communications & Electronics Association (Winnipeg Chapter) Award
Two awards of $350 each to full-time students entering second year of Computer 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 course-load and attains the highest standing in the metallurgy course.

Association of Manitoba Land Surveyors Scholarships
Two at $400 each to students entering Term 3 of Survey Engineering Technology.

Automotive Industries Association of Canada Scholarship
An award of $100 is given to the most deserving student in the Motor Vehicle Mechanic program.

Birchwood G.M. - Motor Vehicle Mechanic Scholarship
$100 award and plaque for a student outstanding in theory and practical field and community involvement.

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

Bristol Aerospace Limited Scholarships
Two awards of $200 each to students entering second year of Electronic and Mechanical Engineering Technology.

C.E. Littler Memorial Award
Awarded annually in December by the Institute of Power Engineers (Manitoba area) to a student (who is a student member of the IPE) in the 4th Class Power Engineering program, 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 Surveying - Hans Klinkenberg Memorial Scholarship
One award of approximately $200 to a student entering second year of Survey Engineering Technology. The award will be based on academic excellence, need, and participation in student activities.

Canadian Institute of Surveying (CIS) Membership Award
An award of a two-year membership in the Canadian Institute of Surveying to a graduate in the Survey Engineering Technology program.

Canadian Portland Cement Association Concrete Technology Award
A commorative plaque suitably inscribed and $200 will be presented annually to a student enrolled in Construction, Civil, Engineering Design & Drafting, 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 awards to students who excel in asphalt technology. The award provides 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
$100 plus a medallion to a student in Engineering Design & Drafting 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 for high academic performance at the completion of the first year of the Engineering Design and Drafting, Construction Engineering or Civil Engineering Technology programs.

D.J. Woofer Scholarship
$200 scholarship awarded to a member of the Red River IEEE (Electrical, Electronic, Computer and Instrumentation Engineering Technologies) student branch who has shown high academic performance in first year and has participated in IEEE activities. The award is to be made at the beginning of the second year of the student's program.
Diesel Mechanic — Transport Awards
Three awards are issued annually to Diesel Mechanic — Transport students as selected by the Advisory Committee for the program in each of the following specialties: the trucking industry; the farm-machinery industry; and the off-road heavy-equipment industry. Awards consist of a certificate, cash award, toolbox from CP Express and tools from Kleysen Transport. The recipients are also honored on a plaque displayed in the college.

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.

Griffin Canada Incorporated Scholarship
$1,000 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 programs of Instruments, Circuits, and Mathematics.

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

IEEE — Student Branch Scholarship
An award of $200 to a student member of the Red River Community College IEEE Student Branch for high academic performance in first year and participation in IEEE activities.

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

Inco Limited Engineering Technology Bursaries
Six at $100 each to deserving students who are pursuing a full-time program leading to a diploma in the Civil Engineering Technology program family, Electronic Engineering Technology and 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 given each June to students (who are student members of the IPE) in the 3rd Class Power Engineering program, for demonstrated academic and technical ability.

Jessica Miner Scholarship
$100 awarded annually to an outstanding student in a one-year Electronic Technician program.

Lloyd McGinnis Scholarship
A $300 scholarship to be awarded to a student entering the second year of Engineering Technology displaying the greatest proficiency in oral and written communication.

The Manitoba Electrical Association Scholarship
Two scholarships of $200 for students entering second year of Electrical Engineering Technology.

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 entering 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
$200 for a student entering second year of Electrical Engineering Technology.

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

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

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

Manitoba Telephone System (Northern Region) Scholarships
Two scholarships of $500 and the possibility of employment are available to students graduating from a Northern Manitoba high school and entering Electronic Engineering Technology at Red River Community College. Based on performance, an additional scholarship of $500 may be awarded to cover the enrollment costs of the second year of the program.
The National Leasing Division of Birchwood Motors
Two $100 awards. Birchwood Motors awards one to the top student in the January graduating class and awards one to the top student in the June graduating class in the Collision Repair and Refinishing program.

Neelin Wilson Construction Inc. Scholarship
Two awards of $250 each 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 to be given to a student entering second year of Instrumentation Engineering Technology.

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

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

Shell Canada Limited Scholarships
A $200 scholarship to a student entering second year of Instrumentation Engineering Technology and a $200 scholarship to a Bioengineering-Chemical Technology student who excels in the first year of the program.

Society of Manufacturing Engineers Award
One award for excellence in manufacturing-related courses in Mechanical Engineering Technology, to consist 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.

UMA Holdings Limited Scholarships
Two scholarships of $400 each 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.
CONTINUING EDUCATION

A wide range of credit and non-credit part-time courses and programs is available in five broad areas: Business and Administrative Studies, Computer Analyst/Programmer, Industrial and Technology, Health Care and Personal Services, and Applied Arts. As well, a variety of special topics, workshops, and seminars is regularly offered.

Students who do not meet the academic entrance requirements of full-time programs may wish to upgrade their knowledge and skills through the Continuing Education Division, C116, 694-1789. (Courses may be offered depending on interest and demand.)

The basic Continuing Education program is divided into three trimesters (Fall, Winter, and Spring) each of 8-10 weeks duration. Some courses are available during the summer. Most certificate 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, write or phone:

Continuing Education Division
Red River Community College
C116-2055 Notre Dame Avenue
Winnipeg, Manitoba R3H 0J9
Telephone: 694-1789

In the Interlake, write or phone:

Interlake Regional Centre
Box 340
53 Laura Street
Riverton, Manitoba R0C 2R0
Telephone: 1-800-865-5631

In the Pembina Valley, write or phone:

Pembina Valley Regional Centre
Room 100, The Main Plaza
561 Main Street
Winkler, Manitoba R6W 1A3
Telephone: 325-9672

In Portage la Prairie and area, write or phone:

Portage la Prairie Regional Centre
306 Saskatchewan Avenue East
Portage la Prairie, Manitoba R1N 0K8
Telephone: 239-1533

DISTANCE EDUCATION

The college offers a variety of courses to adults through Distance Education. Utilizing a combination of correspondence, teleconference and telephone tutorial, fully accredited programs are available in Business Administration, Health and Family Services, Small Business and Management Development, and Academic Upgrading.

For further information contact:

Distance Education
Red River Community College
CM 25-2055 Notre Dame Avenue
Winnipeg, Manitoba
R3H 0J9
Telephone: 632-2451 or 632-2484

In Selkirk and Eastman, write or phone:

Selkirk Regional Centre
Lord Selkirk Regional Secondary School
221 Mercy Street
Selkirk, Manitoba R1A 2C8
Telephone: 785-5010

In Steinbach and area, write or phone:

Steinbach Regional Centre
Steinbach Regional Secondary School
Box 2380
190 McKenzie Road
Steinbach Manitoba R0A 2A0
Telephone: 326-6426
COMMUNITY COLLEGE ACCESS PROGRAM
The Community College ACCESS program is designed to provide admission to Red River Community College for low-income students who have not had the opportunity for such experience because of social, economic, or cultural reasons, lack of formal education or residence in remote areas of Manitoba. Priority is given to aboriginal people.

SOUTHERN NURSING PROGRAM
The Southern Nursing Program is designed to provide admission to Red River Community College for low-income students who have not had the opportunity to become Registered Nurses because of social, economic or cultural reasons or lack of formal education. Priority is given to aboriginal people, single parents and immigrants.

Candidates for the above two programs must be 20 years of age or have a complete Grade 12. The application deadline for these programs is March 1 each year.

For further information, contact:
ACCESS Programs
F210-2055 Notre Dame Avenue
Winnipeg, Manitoba
R3H 0J9
Telephone: 632-2180

AEROSPACE/INDUSTRIAL ENGINE OVERHAUL
One of the programs addressing aboriginal education and employment, Aerospace/Industrial Engine Overhaul is a 28-week certificate program. Students learn theory and practical application of skills for entry into a variety of positions in the aerospace industry. Program time alternates between on-campus study and placement with participating employers.

MICROCOMPUTER APPLICATIONS
One of the programs designed to address aboriginal education and employment, Microcomputer Applications is a 52-week certificate program commencing in August of each year. Students learn the language and application of current software packages as well as accounting, business communications and professional development. A work experience component is included.

CENTRE FOR INTERCULTURAL DEVELOPMENT
The Centre For Intercultural Development (CID) provides customized intercultural management and employee training programs and consultation services to private, public and non-profit sector organizations. Working collaboratively with an organization, CID programs and services focus on managing diversity in the workplace, intercultural communication, training of the intercultural trainer, empowerment of employees, identification, prevention and elimination of individual and systemic discrimination, and development and implementation of organizational change towards a culture of diversity.

The Centre delivers a Certificate Program for Intercultural Trainers that is designed to meet the challenge of diversity and respond to an identified shortage of certified intercultural trainers. Courses are offered on a flexible basis: evenings, weekends, and some three-day workshops and the entire program can be completed in a minimum of two years.

For further information, contact:
Centre For Intercultural Development
321-1200 Portage Avenue
Winnipeg, Manitoba
R3G 0T5
Telephone: 945-3151

MARKET DRIVEN TRAINING CENTRE
The Market Driven Training Centre (MDTC) develops and delivers quality training that meets the needs of the Manitoba workforce which includes skills enhancement and retraining of existing and displaced workers as well as the preparation and training of new and returning labour force participants.

The MDTC is client-centred so the needs of employers, funders and students determine what training will be delivered and where and when it will be delivered.

For further information on programs and services, contact:
Market Driven Training Centre
321-1200 Portage Avenue
Winnipeg, Manitoba
R3G 0T5
Telephone: 945-0588

Criteria for entry into the Aerospace/Industrial Engine Overhaul and Microcomputer Applications programs are subject to change. Current information is available at Room D214 or by telephone at 632-2567.
OTHER MANITOBA COMMUNITY COLLEGES

Programs listed below will be offered in 1992-1993. For information on these programs and others that may be available, applicants should apply directly to the college of their choice.

ASSINIBOINE COMMUNITY COLLEGE
1430 Victoria Avenue East
P.O.Box 935
Brandon, Manitoba R7A 5Z9
Telephone: 726-6600

Assiniboine Community College is located in Brandon and also operates the Parkland Campus in Dauphin and the Parkland Southwest Regional Centre in Russell.

Adult Literacy
Agribusiness Diploma
Automotive Electronics
Business Accountancy
Business Administration
Carpentry & Woodworking
Child Care Services
Community Social Development Worker
Computer Engineering Technology*
Developmental Studies
Electrical Engineering Technology
Electronic Technician
Electronic Engineering Technology*
Farm Machinery Mechanic
General Business Certificate
Heavy Duty Mechanic
Heavy Duty Electronics
Hospitality/Tourism Administration
Instrumentation Engineering Technology*
Machine Shop
Media Production
Motor Vehicle Mechanic
Piping Trades
Practical Nursing
Rural Initiatives Diploma
Secretarial
Small Business Skills
Sustainable Shelter Technology
Telecommunications Engineering Technology
Welding

KEEWATIN COMMUNITY COLLEGE
Box 3000
The Pas, Manitoba R9A 1M7
Telephone: 629-3416

Keewatin Community College is located in The Pas and operates regional centres in Thompson and Flin Flon.

Advanced Computer Applications
Band/Northern Community Administration
Business Accountancy
Business Administration
Business Skills Integrated
Carpentry & Woodworking
Child Care Services
Clerical Bookkeeping
College Preparation
Computerized Business Applications
Computer Programmer/Analyst
Dental Assisting
Diploma Nursing
Electronic Repair Technician
Facilities Technician
Heavy Duty Mechanics
Instrumentation Electronic Technology/Technician
Law Enforcement Career Preparation
Motor Vehicle Mechanics Co-operative
Natural Resources Management Technology
Practical Nursing
Pre-College Preparation
Pre-Employment Electrical
Pre-Employment Industrial Mechanic/Machinist
Pre-Employment Welding
Professional Cooking Basics
Secretarial Arts
Small Business Development & Management

Apprenticeship Training
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*First year only - second year at Red River Community College

Note: Program offerings are subject to change.
### Certificate and Diploma Programs

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**Women's Programs:**
(see ACT For Women, Pre-Technology Training for Women)

**Programs Under Development**
- Chemical Laboratory Technology
- Library and Information Technology
- Motor Vehicle Mechanic - Diploma

For further information, contact the Admissions/Registration Office, C306, telephone: 632-2327.
ACT FOR WOMEN
(Alternative Careers Training for Women)

PURPOSE
To familiarize women with non-traditional occupations, including the trades, so that they may make informed career choices in these areas.

PROGRAM
ACT (Alternative Careers Training) for Women is a 12-week program with two entry dates: January and April. ACT for Women is designed to help a woman realistically appraise her skills and abilities for non-traditional training and/or employment, and to plan a route such as upgrading, pre-employment training or apprenticeship, to become a skilled person in her chosen occupation.

ENTRANCE REQUIREMENTS
Although there are no formal academic entrance requirements, good fundamental reading and writing skills are essential for success in this program.

EMPLOYMENT POTENTIAL
Graduates of this program have found themselves more self-confident and better prepared for training or employment in non-traditional occupations. Some graduates found jobs as railway yardpersons, transit bus drivers or in construction work. Other graduates went on to enroll in specific trades programs and are now employed as plumbing estimators, electricians, machinists, carpenters and in other non-traditional occupations.

Please note that this program is designed to familiarize women with training and employment in non-traditional fields, not to be an academic upgrading program. Those students successfully completing the ACT for Women program must still meet the stipulated entrance requirements for skill-training programs.

PROGRAM OUTLINE
B25-J101 Classroom Component Pre Trades Training For Women
B25-J102 Laboratory Component Pre Trades Training For Women
B25-J103 Work Experience Component Pre Trades Training For

COURSE DESCRIPTIONS
B25-J101 CLASSROOM COMPONENT
The classroom component focuses on exploring various non-traditional occupations and planning a route to become a skilled person in a chosen occupation. Improving communication skills and building self-confidence are objectives to ease the entry into a traditionally male area of training or employment. Job-search techniques, including interview procedures and resume preparation, are also included. Math skills are upgraded and a weight training program is included to build body strength required in some non-traditional jobs.

B25-J102 LABORATORY COMPONENT
Hands-on experience includes electricity, electronics, small motors, drafting, construction, manufacturing, printing, photography and computers.

B25-J103 WORK EXPERIENCE COMPONENT
Provides an opportunity for a related on-the-job orientation by participating in a fourteen day work experience in a non-traditional area.
PURPOSE
The purpose of the program is to meet the ever-increasing need for individuals who have strong communication 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 - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with English 300 or 301 and Mathematics 300 or 301;

or

B - Adult Basic Education 11B with supplemental mathematics topics;

Mature Student Admission. Mature student applicants may submit either the Manitoba Education and Training Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in English and Mathematics as outlined in (A) above. Mature students must also be 20 years of age on or before September 30 in the year of registration. All mature applicants are referred to the Director of Admissions/Registration for review.

EMPLOYMENT POTENTIAL

PROGRAM OUTLINE
Term 1
B18-A205 Accounting I
B18-A225 Communications I
B18-T210 Keyboarding I
B18-V205 Interpersonal Communications
B18-X205 Introduction to Computers

Term 2
B18-A305 Accounting II
B18-A325 Communications II
B18-T310 Keyboarding II
B18-L305 Lotus 1-2-3
B18-M305 Office Procedures

Term 3
B11-A492 Microcomputer Financial Assistance
B18-C425 Report Writing
B18-E402 Employment Preparation I
B18-F403 Records Management I
B18-P405 Transcription
B18-T405 WordPerfect -- Basic
B18-W405 Keyboarding III

Term 4
B18-E400 Co-operative Work Experience

Term 5
B18-B504 Introduction to Business
B18-C505 Oral Communications
B18-E502 Employment Preparation II
B18-F503 Records Management II
B18-M503 Legal Applications
B18-T505 WordPerfect -- Advanced
B18-W505 Keyboarding IV
B18-W555 WordPerfect Applications I

Term 6
B18-E600 Co-operative Work Experience

TERM S

B11-A492 Microcomputer Financial Assistance
Using ACCPAC software, the students will format their own accounts and financial statements and enter transaction from a set of comprehensive case studies.

B18-A205 Accounting I
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 II
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 the 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, labour relations and Canada's role in the global economy.

B18-A225 Communications I
Through the writing process, students will be able to write to clear, concise paragraphs incorporating correct grammar, spelling, punctuation, word division and vocabulary usage.

B18-A325 Communications II
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 a 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 the 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 a group situations. Students will evaluate and summarize relevant information in preparation of their oral presentation. 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 to database.

B18-E400 Co-operative Work Experience
Co-operative education is a 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 Co-ordinator. The student’s performance and the work placement are evaluated and the students are required to write a comprehensive report on the experience.

B18-E402 Employment Preparation I
This course is designed to provide 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 II
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 II
This is the second paid on-the-job work experience. Goals and requirements are the same as those for Co-operative Work experience I.

B18-F403 Records Management I
This course will provide the student with an understanding of what a records management system is; the rules and the filing procedures covering alphabetic, subject, numeric and geographic classifications; familiarity with filing equipment.

B18-F503 Records Management II
The student will learn how to evaluate a records system, control the creation of records, analyze forms, conduct a records retention schedules, transfer records and evaluate safety and security of records.

B18-G604 Desktop Publishing
The course is designed to introduce the student to Desktop Publishing. The student will design and produce a variety of documents that maximize the use of text and graphic display with printer capabilities.

B18-L305 Lotus 1-2-3
Lotus 1-2-3 is the most popular 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 accounts.

B18-M503 Legal Applications
This course deals with laws that effect the workplace such as Human Rights Legislation, Copyright Law, the Employment Standards Act and the Freedom of Information Act. Also students will become familiar with basic legal forms and practice completing them.

B18-O605 Organization/Seminar
Students work 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-P405 Transcription
This course requires the student to transcribe mailable letters and business documents from machine recorded dictation at an acceptable rate.

B18-S604 Supervision
This course is designed to enable the student to explore the basic principles underlying human behavior and 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-T210 Keyboarding I
This course develops touch typing techniques and introduces basic formatting.
B18-T310 Keyboarding II
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 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-T505 WordPerfect – Advanced
Using the knowledge gained from the Basic WordPerfect 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 by business today. This course will focus on the communication 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-T405 Keyboarding III
This course requires the student to produce 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-T505 Keyboarding IV
This course is designed to increase touch typing skills and to develop decision-making skills through working with items of varying importance.

B18-W555 WordPerfect Applications I
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-W655 WordPerfect Applications II
This course will be a continuation of WordPerfect Applications I but will also feature add-on software such as Perfected and By Design. Like WordPerfect Applications I, emphasis is on application of communications and word processing skills in an In-basket situation.

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-X605 Software Applications
In this course, students will select appropriate 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 design to make the job of administrative assistant easier and more efficient.
ADULT BASIC EDUCATION (ABE)

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

PROGRAM
Adult Basic Education programs are approximately five months in length and have varied entry dates. Basic Training for Skill Development (BTSD) is offered on a continuous basis, with the Adult 5-10 having September and February entry dates. Adult 11A, 11B and 11C also have September and February entry dates. Adult 12 has a February entry date only. (The Adult 5-10 program also may be available on a part-time basis, two evenings per week. Please contact the Adult Basic Education office at 633-2418 for further information.)

Adult 3-5 will assist you in acquiring the mathematics and communication skills required for entry into the 5-10 upgrading program.

Adult 5-10 will give you the opportunity to acquire sufficient 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 arts-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 appropriate Adult 11 program, you first should confirm the entrance requirements for the college program you wish to eventually enter.

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 and Institutional Food Service Supervisor programs 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 - completion of Level Placement Test to determine the appropriate upgrading entrance level
B - applicants must 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 ABE 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.

COURSE OUTLINES
Adult 12
S02-C120 Computer Awareness-Core
S02-C121 Computer Awareness-Keyboarding (optional)
S03-K001 Communications
S03-R001 Mathematics 301
S03-S001 Science 300 (Physics)
S03-S002 Science 300 (Chemistry)

Adult 11A
S02-C120 Computer Awareness-Core
S02-C121 Computer Awareness-Keyboarding (optional)
S03-K001 Communications
S03-L001 Mathematics
S03-M001 Science (Physics)
S03-N003 Reading and Study Skills

Adult 11B
S03-N001 Communications
S03-N003 Reading & Study Skills
S03-N005 Basic WordPerfect
S03-N006 Computer Keyboarding
S03-0001 Mathematics
S03-P001 Business & Consumer Fundamentals

Adult 11C
S02-C120 Computer Awareness-Core
S02-C121 Computer Awareness-Keyboarding (optional)
S03-L002 Mathematics
S03-L003 Communications
S03-L004 Science

Basic Training for Skill Development (BTSD)
(Adult 3 - 10)
S02-C100 Writing Skills
S02-C110 Grammar Supplement
S02-C111 Reading Skills
S02-C112 Spelling-Core
S02-C113 Spelling-Supplement
S02-C120 Computer Awareness Training-Core
S02-C121 Computer Awareness Training-Keyboarding
S02-M108 Mathematics-Core
S02-M109 Mathematics-Supplement
S02-S100 Science-Core
S02-S113 Science-Supplement
S02-S114 Sentence Structure
S02-S115 Sentence Structure
S02-S116 Punctuation & Capitalization
S02-S117 Sentence Writing
S02-S118 Paragraph Writing
S02-S119 Usage
S02-S120 Grammar-Supplement
S02-S121 Spelling-Core
S02-S122 Spelling-Supplement
S02-S123 Word Attack
S02-S124 Vocabulary
S02-S125 Comprehension
S02-S126 Study Skills
S02-S127 Whole Numbers
S02-S128 Fractions
S02-S129 Decimals
S02-S130 Ratio & Proportion
S02-S131 Percent
S02-S132 Measurement
S02-S133 Algebra
S02-S134 Graphs
S02-S135 Square Root & Hypotenuse Rule
S02-S136 Geometry
S02-S137 Solving Problems Algebraically
S02-S138 Core
S02-S139 Matter
S02-S140 Energy
S02-S141 Heat Energy
S02-S142 Electrical Energy
S02-S143 Mechanical Energy
S02-S144 Life Science
S04-C100 Writing Skills
S04-C110 Grammar Supplement
S04-C111 Reading Skills
S04-C112 Spelling-Core
S04-C113 Spelling-Supplement
S04-M108 Mathematics-Core
S04-M109 Mathematics-Supplement
S04-S100 Science-Core
S04-S113 Science-Supplement

COURSE DESCRIPTIONS
S02-C100 WRITING SKILLS
Sentence and paragraph construction; expository paragraph writing; usage and mechanics; punctuation and capitalization.

S02-C110 GRAMMAR SUPPLEMENT
Parts of speech; sentence patterns.

S02-C111 READING SKILLS
Reading speed and comprehension development; vocabulary development; study skills.

S02-C112 SPELLING-CORE
Lessons 1 - 14 consist of a list of commonly-used and commonly-misspelled words in the English language; rules to assist in developing spelling skills.

S02-C113 SPELLING-SUPPLEMENT
Lessons 15 - 22 consist of a review and elaboration of the first 14 spelling lessons; review of spelling rules.

S02-C120 COMPUTER AWARENESS TRAINING-CORE
An introduction to the knowledge and use of computers.

S02-C121 COMPUTER AWARENESS TRAINING-KEYBOARDING
Ability to keyboard to predetermined rate and accuracy.

S02-M108 MATHEMATICS-CORE
Development of problem-solving skills using whole numbers, fractions, decimals and percent, ratio and proportion; and measurements.

S02-M109 MATHEMATICS-SUPPLEMENT
Positive and negative numbers; square root; introductory algebra and geometry; and solving problems algebraically.

S02-S100 SCIENCE-CORE
Scientific method; metric measurements.

S02-S113 SCIENCE-SUPPLEMENT
Temperature; heat; pressure; density; work; electricity; anatomy and physiology; problem solving.

S02-S114 SENTENCE STRUCTURE
Verbs and their programs; sentences and fragments; clauses.

S02-S115 SENTENCE STRUCTURE
Sentences, fragments, and run-ons; coordination and subordination.

S02-S116 PUNCTUATION & CAPITALIZATION
Sentence types, punctuation and capitalization.

S02-S117 SENTENCE WRITING
Combining given notes into single sentences.

S02-S118 PARAGRAPH WRITING
Combining given notes into a paragraph.

S02-S119 USAGE
Program-verb agreement, irregular verbs.

S02-S120 GRAMMAR-SUPPLEMENT
Parts of speech, sentence patterns.

S02-S121 SPELLING-CORE
Lessons 1 - 14 Lab. (Units 1 - 14 Adult 8 Word List.)

S02-S122 SPELLING-SUPPLEMENT
Lessons 15 - 22 Lab. (Units 1 - 14 Adult 10 Word List.)

S02-S123 WORD ATTACK
Sight vocabulary, context, dictionary skills.

S02-S124 VOCABULARY
Word power and context.

S02-S125 COMPREHENSION
Literal, interpretive, rate.

S02-S126 STUDY SKILLS
Study habits, test taking, textbooks.

S02-S127 WHOLE NUMBERS
Reading, writing, rounding off, addition, subtraction, multiplication, division, averages, order of operation, problem solving.

S02-S128 FRACTIONS
Reading, writing, addition, subtraction, order of operation, problem solving.

S02-S129 DECIMALS
Reading, writing, rounding off, addition, subtraction, multiplication, division, order of operation, problem solving.
S02-S130 RATIO AND PROPORTION
Ratio, proportion, rates.

S02-S131 PERCENT
Operations, problem solving, simple interest.

S02-S132 MEASUREMENT
Time, distance, liquid, weight, distance conversion, liquid conversion, weight conversion.

S02-S133 ALGEBRA
Integers, terminology, monomials, exponents, polynomials, equations.

S02-S134 GRAPHS
Linear, bar, broken line, circle.

S02-S135 SQUARE ROOT & HYPOTENUSE RULE
Square root, hypotenuse rule.

S02-S136 GEOMETRY
Line, plane circle, angles, polygons, parallel lines, identification plane and solids, perimeter, areas of planes, volume, surface and area of solids.

S02-S137 SOLVING PROBLEMS ALGEBRAICALLY
Number and age problems, rectangle and digit problems, mixture and ratio problems, money problems.

S02-S138 CORE
Scientific method, measurement.

S02-S139 MATTER
States, composition, properties, other groupings, changes.

S02-S140 ENERGY
Kinds, conversions, sources.

S02-S141 HEAT ENERGY
A and B Sources, domestic heat energy management, C Measurement.

S02-S142 ELECTRICAL ENERGY
Statist, from chemical reaction, circuits, measurement, magnetism relationship, applications.

S02-S143 MECHANICAL ENERGY
Work, efficiency, power mechanical advantage lever, inclined plane, wheel and axle, pulley, wedge, screw, examples, applications.

S02-S144 LIFE SCIENCE
A cells, viruses, bacteria fungus, bugs, worms, B body systems, organs, functions.

S03-K001 COMMUNICATIONS
Writing Skills: Development of writing, grammar, writing of paragraphs. Reading Skills: Speed and comprehension, vocabulary development.

S03-L001 MATHEMATICS
Exponents and scientific notation; fundamental operations of directed number, fundamental operations of algebra; equations with an unknown; special products and factoring, algebraic fractions; equations; graphic methods; simultaneous equations; trigonometry.

S03-L002 MATHEMATICS
See S03-L001.

S03-L003 COMMUNICATIONS
See S03-K001.

S03-L004 SCIENCE
Designed for students who are preparing to enter Dental Assisting. Life science, introduction to chemistry, chemical substances, atomic organization and chemical reaction.

S03-M001 SCIENCE (PHYSICS)
Matter and energy, force measurement, motion, atomic structure, energy and machines, etc.

S03-N001 COMMUNICATIONS
Writing Skills: review of grammar, development of writing, writing of paragraphs, letters and summaries. Reading skills: speed and comprehension, vocabulary development, study skills.

S03-N003 READING AND STUDY SKILLS
Develop reading flexibility, improve reading efficiency, learn skimming and scanning techniques, increase general and technical vocabulary, develop comprehension skills, use the SQ3R study system, control your time, improve your 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 function.

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 MATHEMATICS
Personal finance, loans and investments, taxation, business organization.

S03-P001 BUSINESS AND CONSUMER FUNDAMENTALS
Levels of government, distribution of power, types of business and labour organizations, national income, supply and demand, monetary and banking systems, etc.

S03-Q001 COMMUNICATIONS
Grammar; usage; sentence structure; mechanics; paragraph writing; reading; and spelling.

S03-R001 MATHEMATICS
Equations, factoring, exponents, quadratics, solving simultaneous equations and formula manipulation, mensuration and analytic geometry, trigonometry and logarithms.
S03-S001 SCIENCE (PHYSICS)
Kinetic theory; vectors; electromagnetism; radioactivity and electromagnetism; universal gravitation.

S03-S002 SCIENCE (CHEMISTRY)
Introduction to chemistry; atomic structure and periodic table; chemical composition and reaction; acids; bases; salts; solutions; organic chemistry.

S04-C100 WRITING SKILLS
See S02-C100.

S04-C110 GRAMMAR-SUPPLEMENT
See S02-C110.

S04-C111 READING SKILLS
See S02-C111.

S04-C112 SPELLING-CORE
Reading speed and comprehension development, vocabulary development, study skills.

S04-C113 SPELLING-SUPPLEMENT
See S02-C113.

S04-M108 MATHEMATICS-CORE
See S02-M108.

S04-M109 MATHEMATICS-SUPPLEMENT
See S02-M109.

S04-S100 SCIENCE-CORE
See S02-S100.

S04-S113 SCIENCE-SUPPLEMENT
See S02-S113.
ADVERTISING ART

PURPOSE
To develop innovative and creative ideas in design and illustration for the print media, with reference to strict advertising and promotional guidelines.

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.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 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 Admissions Office at 632-2327 to confirm the exact cut-off date.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits. Mature students 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Graduates of this program have found employment as production artists, designers, illustrators and art directors in retail stores, advertising agencies, design and production studios, as well as with newspapers and magazine publishers. Others are working in television and film studios, and some are employed as free-lance artists.

PROGRAM OUTLINE
Year 1
Term 1
B01-A101 Basics Of Form
B01-A102 Principles Of Drawing

B01-A103 Basic Art Production Techniques I
B01-A108 History Of Graphic Design
B01-A109 Intro To Computers For Electronic Publishing
B01-A111 Reproduction Methods & Materials
B10-C109 Introduction To Advertising

Term 2
B01-A203 Basic Art Production Techniques II
B01-A211 History Of Graphic Design
B01-A212 Introduction To Electronic Publishing II
B01-A213 Life Drawing
B01-A214 Advertising Design
B01-A215 Graphic Design
B01-A216 Reproduction Methods & Materials
B10-C209 Intro To Advertising - Ad Art

Term 3
B01-A301 Graphic Design
B01-A302 Sketching For Illustration
B01-A308 Reproduction Methods & Materials
B01-A313 Advanced Production
B01-A315 History Of Graphic Design
B01-A318 Introduction To Electronic Publishing
B10-C309 Intro To Advertising - Ad Art

Year 2
Term 4
B01-A316 Work Experience I
B01-A401 Advertising Illustration
B01-A402 Rendering Techniques
B01-A403 Electronic Publishing
B01-A406 Advertising Design (optional)
B01-A407 Graphic Design
B01-A419 History Of Graphic Design
B01-A421 Practicum

Term 5
B01-A420 Work Experience II
B01-A501 Advertising Design
B01-A502 Advertising Illustration
B01-A503 Rendering Techniques
B01-A504 Computer Graphics
B01-A507 Graphic Design
B14-M231 Basic Marketing

Term 6
B01-A601 Advanced Advertising Design
B01-A602 Advanced Advertising Illustration
B01-A603 Computer Graphics II
B01-A611 Advanced Rendering Techniques
B01-A616 Advanced Graphic Design Problems
B01-A617 Portfolio Presentation
B14-M632 Advanced Marketing

COURSE DESCRIPTIONS
B01-A101 BASICS OF FORM
Study of the elements of design: point, line, plane, texture and spatial relationships are investigated.

B01-A102 PRINCIPLES OF DRAWING
Students work from still life compositions, models, natural and...
man made environments. The course will develop a basic understanding of contour line, gesture drawing, form, tone, and spatial relationships. Students will enlarge their powers of perception through drawing from direct observation.

B01-A103 BASIC ART PRODUCTION TECHNIQUES I
The course will develop the process of self facilitation in the areas of communication skills, sensory awareness, trust building, fantasy and group process. The methods employed will be drawn from transactional analysis, gestalt awareness and values classification.

B01-A108 HISTORY OF GRAPHIC DESIGN
An introduction to the History of Graphic Design, this course will explore the evolution of graphic communication. This presentation will deal with communication from prehistoric times through to ancient Egypt and Medieval civilizations up to the inception of movable typographic printing.

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, multi-media presentations, and electronic prepress.

B01-A111 REPRODUCTION METHODS & MATERIALS
A comprehensive study of photomechanical and direct printing procedures. Areas covered are: photoengraving, letterpress, gravure and offset printing, screen processes and multicolour printing.

B01-A203 BASIC ART PRODUCTION TECHNIQUES II
Basic Art Production Techniques II will introduce the student to the preparation of mechanical artwork for the reproduction of print media material. Emphasis will be placed on the practice of techniques and methods used by the advertising artist, enabling the student to produce work at a professional level.

B01-A206 ADVERTISING DESIGN
An exploration of the production of Advertising Art and design in relation to the needs and requirements of the industry.

B01-A207 GRAPHIC DESIGN
An introduction to designing using tonal relationships and colour. Emphasis is placed on the understanding of colour theory, mixing and application.

B01-A211 HISTORY OF GRAPHIC DESIGN
A continuing introduction to the History of Graphic Design, this course will explore the evolution of graphic communication. This presentation will deal with the birth of printing, graphic design, and typography. The evolution of visual and graphic communication through the Renaissance in Europe will be explored. History of Graphic Design B01A108 is a prerequisite for this course.

B01-A213 LIFE DRAWING
Techniques involving the drawing of the human form from life, both as an anatomical study and as a basis for future sketching in such areas as illustration and design. A variety of poses, quick sketches and rendering techniques are involved together with the use of a variety of media.

B01-A307 GRAPHIC DESIGN
An introduction to type as a fundamental element of design. The history of the development of the letterform as a means of communication and exercises using type as the main design element, form the basis of this course.

B01-A308 REPRODUCTION METHODS & MATERIALS
The development of proper techniques for the preparation of mechanical art for reproduction. Emphasis is placed on ruling, masking, windows and the preparation of overlays for colour printing.

B01-A310 SKETCHING FOR ILLUSTRATION
Sketching techniques, methods, and materials used in illustration.

B01-A313 ADVANCED PRODUCTION
To introduce the learner to the skills required to prepare camera-ready work of an advanced nature. Emphasis will be placed on the techniques and the technology used in the advertising.

B01-A315 HISTORY OF GRAPHIC DESIGN
A continuing introduction to the History of Graphic Design, this course will explore the effects of their 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 B01A211 is a prerequisite for this course.

B01-A316 WORK EXPERIENCE I
The learner will participate in a two week work experience placement while enrolled in the first year of the Advertising Art course. 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-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 the development of ad series and campaigns considering the use of illustrative or photographic visual material.

B01-A407 GRAPHIC DESIGN
Graphic design, lettering and typographic design as applied to layout, packaging and poster design.

B01-A409 ADVERTISING ILLUSTRATION
The student will be presented with up-to-date practical
assignments in illustration for print media formats. The instructor will act as art director and will give specific instructions on how a problem is to be approached. The student will be asked to solve illustration problems in a variety of styles and mediums. All illustrations will include layout and typographic and problems to achieve a total visual concept.

**B01-A513 TELEVISION PRODUCTION**
Fundamentals of television production with particular emphasis on design and production of artwork for television.

**B01-A516 COMPUTER GRAPHICS**
The objective of this course is to offer the student of advertising art the opportunity to develop competency as a videotex page creator. This course is not intended as a comprehensive graphics program, rather as a basic orientation to operating and programming a teledon information provider system. Each student will undertake a self learning course using the Norpak/IPS computer under the direction of an instructor advisor.

**B01-A605 ADVANCED ADVERTISING DESIGN**
Advanced techniques in a variety of applications, to involve the student in as many design areas as possible. Professional standards are adhered to.

**B01-A609 ADVANCED ADVERTISING ILLUSTRATION**
Continuation of previous term with emphasis on editorial and storyboard illustration.

**B01-A611 ADVANCED RENDERING TECHNIQUES**
Emphasis on specific techniques for specialized requirements. Practical experimentation with a variety of media applied to assignments.

**B01-A615 AUDIO VISUAL PRODUCTION**
An exploration of animation, achieved by both drawing directly on film and with cells. Particular attention is paid to the mechanics of animation and its place in the advertising industry.

**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. 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 two 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-A618 COMPUTER GRAPHICS II**
The learner will develop competency in the operation of a videotext page creator. Using a Teledon Information Provider System, the student will undertake to produce an information package on a given course. Each student will undertake a self learning course under the direction of an instructor advisor.
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. 2 hours per week.

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-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.

B14-M231 BASIC MARKETING
An introduction to basic marketing, with emphasis on the application of marketing principles in Advertising Art. The course includes an introduction to the marketing concept, the functions of marketing, markets, marketing mix, and the marketing institutions.

B14-M632 ADVANCED MARKETING
Advanced marketing focuses on applications of marketing theories introduced in Term 5 Basic Marketing. Special emphasis is placed on the design, development and evaluation of alternative promotional strategies and their applications in today's business environment.
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, anesthesia, 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
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and two of Chemistry 300, Biology 300 or 301, or Physics 300.
- Basic Education Pre-Technology program (Adult 12) completion.

Mature Student Admission. Mature students submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of credits; however, they must have specific credits in mathematics, English, and two sciences as noted 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 Admissions/Registration for review.

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

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 the federal or provincial governments.

PROGRAM DESCRIPTIONS

YEAR 1

Term 1
H09-A102 General Chemistry I
H09-A103 Lab Safety
H09-A104 Introduction To Animal Management
H09-A110 Biology/Zoology
H09-A117 Technical Mathematics
H09-A126 Communications

Term 2
H09-A204 Organic Chemistry
H09-A207 Medical Nursing I
H09-A211 Anatomy And Physiology I
H09-A212 Genetics
H09-A217 Computer Awareness
H09-A218 General Microbiology

Term 3
H09-A307 Medical Nursing II
H09-A311 Anatomy And Physiology II
H09-A312 Nutrition
H09-A318 Applied Microbiology
H09-A324 Biochemistry
H09-A326 Hematology I

Year 2

Term 4
H09-A408 Radiology
H09-A409 Reproduction
H09-A410 Clinical Pathology
H09-A411 Surgical Nursing I
H09-A412 Anesthesia I
H09-A426 Hematology II

Term 5
H09-A511 Surgical Nursing II
H09-A512 Anesthesia II
H09-A513 Pharmacology
H09-A514 Lab Animal/Small Fur Bearing Animal Management
H09-A515 Office And Accounting
H09-A516 Avians And Exotic Animal Medicine
H09-A517 Zoonosis And Public Health Medicine

Term 6
H09-A610 Projects
H09-A611 Large Animal Clinical Practicum
H09-A612 Practice Management And Client Management
H09-A613 Applied Nutrition
H09-A614 Small Animal Clinical Practicum
H09-A626 Communications

COURSE DESCRIPTIONS

H09-A102 GENERAL CHEMISTRY I
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.

B - 14
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, behaviour, 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-A117 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, in this course, is placed on calculations for making solutions and dosages as well as basic statistics. This course also includes some physics necessary for the AHT student.

H09-A126 COMMUNICATIONS
The objective of this course is to assist the 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-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 compounds alkanes, alkenes, alkynes, arenes, alcohols, ethers, carboxylic acids.

H09-A207 MEDICAL NURSING I
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. Laboratory sessions will cover practical nursing procedures.

H09-A211 ANATOMY AND PHYSIOLOGY I
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-A212 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-A217 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, formatting 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 Word Perfect 5.0, dBase III+, and Lotus 1-2-3.

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-A307 MEDICAL NURSING II
This course is a continuation of Medical Nursing I. H09-A207

H09-A311 ANATOMY AND PHYSIOLOGY II
This course is a continuation of Anatomy and Physiology I.

H09-A312 NUTRITION
Nutrition is a course designed to acquaint the student with the principles of nutrition. The student will become familiar with the normal role of nutrients in the body and the diseases that are caused by imbalances of these nutrients. The student will also become acquainted with the various feedstuff fed to domestic animals and good feeding practices.

H09-A318 APPLIED MICROBIOLOGY
This course deals with the practical aspects of the isolation and recognition of microorganisms commonly encountered in veterinary medicine. The student will learn the microscopic and cultural characteristic of these organisms as well as antibiotic sensitivity testing.

H09-A324 BIOCHEMISTRY
This course is designed to give the student a general knowledge of biochemistry and the role that biomolecules play in cellular metabolism and nutrition.

H09-A326 HEMATOLOGY I
Hematology I will focus on the normal hematology of domestic animals. The student will become proficient in the recognition, evaluation, and counting of the various blood cell types. The laboratory sessions will allow the student to practice the concepts of complete blood cell counting and cell evaluation.

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 behaviour. On completing this course, the student will be able to ascertain the normal reproductive events and behaviour in an animal as well as the abnormal or problematic 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 I
This course will prepare the student of Animal Health Technology to be able to understand the principles 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 I
The student will become knowledgeable with the common anesthetic agents in veterinary practice. They will learn how to monitor animals under anesthesia and practice rendering and monitoring anesthesia to patients in the laboratory surgical rotations.

H09-A426 HEMATOLOGY II
Hematology II is a continuation of Hematology I with an emphasis on the abnormal complete blood count and the identification of pathological cells. The student will be introduced to cytology and cytological sampling in this course.

H09-A511 SURGICAL NURSING II
Surgical Nursing II is a continuation of Surgical Nursing I.

H09-A512 ANESTHESIA II
Anesthesia II is a I of Anesthesia I.

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-A514 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-A515 OFFICE AND ACCOUNTING
Office and Accounting is a course designed to introduce the student to the basics in office accounting procedures that are used in small businesses. Since most Animal Health technologists are expected to help in the business end of a veterinary practice or production unit this course will assist them in this capacity.

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-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 six weeks of practical training in a large animal practice at the beginning of the trimester. During this busy time of year for large animal practitioners the student will have an opportunity to practice all the skills learnt in the course 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-A613 APPLIED NUTRITION
Applied Nutrition is a continuation of Nutrition H09A312. 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-A614 SMALL ANIMAL CLINICAL PRACTICUM
The student will spend six weeks of practical training in a small animal practice at the end of the trimester. The student will have the opportunity to improve on the skills learnt during the course. The practicum clinic will evaluate the student on the skills prerequisite to passing the course.

H09-A626 COMMUNICATIONS
This second Communications course is designed to increase the effectiveness of the students interpersonal communications skills. The course will also help the student in preparing the oral and written parts of the project (H09A610).
APPRENTICESHIP PROGRAMS

PURPOSE
To work with men or women and employers to produce journeypersons fully qualified in a skilled trade through study of related programs and on-the-job training.

PROGRAM
Annual training programs for indentured apprentices in the designated trades are offered by Manitoba Labour in full-time day classes at the college.

These programs are at graduate levels and are attended at set intervals throughout the apprenticeship term. In most trades, the apprentice is required to attend three or four programs averaging six weeks in length.

The programs provide instruction in practice and theory of the trade together with necessary 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 journeyperson.

The apprentice agrees to attend regularly at the place of employment, to serve the employer faithfully, honestly and diligently, and to make an honest effort to learn the trade. The apprentice also agrees to attend all classes and sit for examinations as required by the Director of Apprenticeship.

The employer agrees to provide adequate training for the apprentice in all branches of the trade. The employer agrees to keep the apprentice employed as long as work is available, and also to cooperate with the Apprentice Training Division to ensure that the apprentice attends trade programs regularly.

The following Manitoba Labour Apprenticeship programs are offered in cooperation with Red River Community College:

- Boiler Maker
- Bricklayer
- Cabinet Maker
- Carpenter
- Construction Electrician
- Cook
- Interior Systems Mechanic
- Machinist
- Motor Vehicle Body Repair
- Motor Vehicle Body Repair (Paint)
- Motor Vehicle Mechanic
- Painter and Decorator
- Plumber
- Power Electrician
- Refrigeration & Air Conditioning
- Sheet Metal Worker
- Sprinkler & Fire Protection Installer
- Stenographer
- Tool & Die Maker

ENTRANCE REQUIREMENTS
Minimum age of 16 years and the approval of the Director of Apprenticeship, Manitoba Labour.

EMPLOYMENT POTENTIAL
A person who successfully completes an apprenticeship is granted a certificate of qualification in one's trade. This certificate identifies the holder as a male or female journeyperson, and is recognized by employers and the public as a trained and competent trades-person. In several trades, the certificates are officially recognized across Canada.

For further information on apprenticeship training at Red River Community College, please see the Apprenticeship Programs brochure or contact:

Office of Director
Apprenticeship and Training Division
Manitoba Labour
816 Norquay Building
401 York Avenue
Winnipeg, Manitoba R3C 0P8
Telephone: (204) 945-3337
ARCHITECTURAL, STRUCTURAL, MECHANICAL SYSTEMS & ELECTRICAL 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, mechanical-systems or electrical design and construction industries.

PROGRAM
Architectural Drafting, Structural Drafting, Mechanical Systems Drafting and Electrical 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, Mechanical Systems or Electrical options. As the second-term option may be restricted by numbers, final selection will be made in consultation with the department head and, if necessary, will be based on first-term grade point averages.

ENTRANCE REQUIREMENTS
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with one of Mathematics 200 or 201*.
  - Standing in Physics 200 or Physical Science 201 is strongly recommended;
  - Adult Basic Education 11A

Mature Student Admission: Mature students may substitute the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of Mathematics 200, 201, 290 academic, or 911. Formal credit in one of Physics 200 or 290 or Physical Science 201 is recommended. Mature students must also 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Architectural Drafting graduates have found employment as junior draftspersons in architectural, consulting engineering, town planning, surveying and building trades 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.

Electrical Drafting graduates are working as junior draftspersons with electrical engineering consultants, power distribution utilities, electrical contractors, and with electrical suppliers.

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.

PROGRAM OUTLINE
Term 1 (common to the four options listed below)
T03-A101 Fundamentals of Delineation
T03-A102 Applied Architectural Drafting I
T03-A103 Computer-Aided Drafting I
T13-M510 Drafting Math I

Architectural Drafting Option
Term 2
T03-A201 Quantity Take-Off
T03-A202 Applied Architectural Drafting II
T03-A203 Computer-Aided Drafting II
T03-A204 Building Code Analysis
T13-M614 Drafting Math II

Term 3
T03-A301 Surveying & Topographical Drawing
T03-A302 Applied Architectural Drafting III
T03-A303 Computer-Aided Drafting III
T03-A304 Specifications
T14-R504 Communications

Electrical Drafting Option
Term 2
T03-E201 Electrical Lab-Material Identification & Usage
T03-E202 Electrical Drafting I
T03-E203 Computer-Aided Drafting II
T13-M614 Drafting Math II
T14-R504 Communications

Term 3
T03-E301 Surveying & Topographical Drawing
T03-E302 Electrical Drafting II
T03-E303 Computer-Aided Drafting III

Mechanical Systems Drafting Option
Term 2
T03-S201 Mechanical Systems Drafting I
T03-S203 Computer-Aided Drafting II
T13-M614 Drafting Math II

Term 3
T03-S301 Mechanical Systems Drafting II
T03-S303 Computer-Aided Drafting III
T03-S304 Quantity Take-Off
T14-R504 Communications

Structural Drafting Option
Term 2
T03-D201 Applied Strength of Materials I
T03-D202 Fundamentals of Structural Steel Detailing Drafting
T03-D203 Computer-Aided Drafting I
T03-D204 Applied Structural Engineering Drafting
T13-M614 Drafting Math II
T14-R504 Communications
Term 3
T03-A301 Surveying & Topographical Drawing
T03-D301 Applied Strength of Materials II
T03-D302 Applied Structural Steel Detailing Drafting
T03-D303 Computer-Aided Drafting III

COURSE DESCRIPTIONS
T03-A101 FUNDAMENTALS OF DELINEATION
Practice in the use of architectural, engineering and metric scales, basic letter forms, linework techniques, material symbols, architectural conventions and techniques, orthographic and pictorial drawing.

T03-A102 APPLIED ARCHITECTURAL DRAFTING I
A study of common building practices, and the production of working drawings for industrial buildings and residential dwellings. Introduction to computers and computer-aided drafting, geometric input modes, coordinate types, drawing creation and manipulation, dimensioning, bookkeeping functions, output (plotting), production of drawings using Terak Minn-Draft software.

T03-A103 COMPUTER-AIDED DRAFTING I
Introduction of AutoCAD computer-aided drafting system. Including geometric entities, input modes, coordinate types, drawing creation, drawing editing and manipulation, block creation and use, layer concept and output to printer and plotter.

T03-A201 QUANTITY TAKE-OFF
Development of a systematic approach used to establish quantity and cost of common building materials used in commercial and industrial building construction. Emphasis placed on standard units of measurement used for pricing purposes.

T03-A202 APPLIED ARCHITECTURAL DRAFTING II
A study of commercial building construction practices, light wood frame construction and stair design, and the production of working drawings for the same.

T03-A203 COMPUTER-AIDED DRAFTING II
Same as T03-D203.

T03-A204 BUILDING CODE ANALYSIS

T03-A301 SURVEYING & TOPOGRAPHICAL DRAWING
Practice in the use of the transit and level, the plotting of cuts and contours, and the techniques of topographical drawing.

T03-A302 APPLIED ARCHITECTURAL DRAFTING III
A study of commercial building construction practices and the production of working drawings for the same, including perspective and presentation drawings.

T03-A303 COMPUTER-AIDED DRAFTING III
Same as T03-D303

T03-A304 SPECIFICATIONS
Interpretation of tendering procedures, division of trades and responsibilities, writing a partial specification using a computer-based editing system for the architectural and structural divisions of a selected building project.

T03-D201 APPLIED STRENGTH OF MATERIALS I
Basic course in Strength of Materials, including stress and deformation, and the application of these concepts in the analysis of steel and timber beams.

T03-D202 FUNDAMENTALS OF STRUCTURAL STEEL DETAILING DRAFTING
A study of the fundamentals of shop detailed fabrication drawings.

T03-D203 COMPUTER-AIDED DRAFTING II
Instruction in advanced commands of AutoCAD drafting system including moving and duplicating objects, array, modifying and maneuvering, notes and specifications, blocks, library creation and attributes.

T03-D204 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-D301 APPLIED STRENGTH OF MATERIALS II
Basic course in strength of materials, including bolted and welded joints, shear and moments in beams and the application of these concepts in the selection of steel and timber beams.

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-D303 COMPUTER-AIDED DRAFTING III
Use of AutoCAD to produce advanced discipline-related working drawings. AutoCAD 3D and Introduction to AutoLISP programming.

T03-E201 ELECTRICAL LAB-MATERIAL IDENTIFICATION & USAGE
A practical introduction to the various materials and components used in the electrical field with particular emphasis on those used in residential and commercial wiring. Materials are shown and their use demonstrated. Whenever possible and practical, hands-on experience is provided.

T03-E202 ELECTRICAL DRAFTING I
Essential electrical theory and practice in electrical drafting techniques. Various projects in residential, industrial and motor control areas give the student exposure to the typical circuitry, symbols, and components used. Pictorial, diagrammatic, schematic and one-line diagrams are drawn as appropriate. In the course of the projects, the student becomes familiar with the requirements of the Electrical Code and other applicable standards.
T03-E203 COMPUTER-AIDED DRAFTING II
Instruction in advanced commands of AutoCAD drafting system including moving and duplicating objects, array, modifying and maneuvering, notes and specifications, blocks, library creation and attributes.

T03-E301 QUANTITY TAKE-OFF
The techniques used by an electrical estimator are explained and practiced by a project utilizing an actual set of prints.

T03-E302 ELECTRICAL DRAFTING II
Further projects in more complex motor control drawings advance the students' capabilities in this area. Techniques used in sheet-metal drawing for cabinets and components are introduced, with a review of the applicable orthographic and isometric conventions. A major commercial project gives experience in integrating the electrical with other disciplines in a set of drawings, in three-phase wiring and in lighting layout. Special materials for presentation of display work and modeling are used in a group project situation for display to the public.

T03-E303 COMPUTER-AIDED DRAFTING III
Use of AutoCAD to produce advanced discipline-related working drawings. AutoCAD 3D and Introduction to AutoLISP programming.

T03-S202 MECHANICAL SYSTEMS DRAFTING I
A study of heat loss calculations for "residential" and "institutional" buildings, the incorporation of these calculations into a variety of heating and ventilating systems and the production of working drawings for the same. Familiarization with the Manitoba Plumbing Code and components of the plumbing systems for production of plumbing working drawings in "residential" and "institutional" buildings. Familiarization with the Canadian Underwriters' Association standard for the installation of sprinkler systems for production of sprinkler working drawings in "institutional" buildings.

T03-S203 COMPUTER-AIDED DRAFTING II
Instruction in advanced commands of AutoCAD drafting system including moving and duplicating objects, array, modifying and maneuvering, notes and specifications, blocks, library creation and attributes.

T03-S302 MECHANICAL SYSTEMS DRAFTING II
A study of air conditioning system loads including heat loss, cooling load and ventilation requirements. The incorporation of these calculations into a variety of air-conditioning systems, equipment selection and the production of working drawings for the same. Advanced study of the Manitoba Plumbing Code, fixture selection and design of plumbing system for commercial buildings.

T03-S303 COMPUTER-AIDED DRAFTING III
Use of AutoCAD to produce advanced discipline-related working drawings. AutoCAD 3D and Introduction to AutoLISP programming.

T03-S304 QUANTITY TAKE-OFF
Development of fundamental concepts for a systematic approach to material take-off of mechanical components for commercial buildings.

T13-M510 DRAFTING MATH I
Solution of architectural and engineering-related problems using basic mathematical operations, ratio and proportion and scientific notation.

T13-M614 DRAFTING MATH II
Solution of architectural and engineering-related problems using algebra, geometry and trigonometry.

T14-R504 COMMUNICATIONS
The course of instruction 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.
AUTOMOTIVE SERVICE EDUCATION PROGRAM

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 G.M. 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
- 20 high school credits (Manitoba Grade 12)
- successful completion of a prescribed reading skills test.

EMPLOYMENT POTENTIAL
Because this program is a relatively new program, there is no graduate employment experience to date.

PROGRAM OUTLINE
Level 1
T01-A101 Safety - Theory
T01-A102 Shop Tools - Theory
T01-A103 Service Manual And Bulletins - Theory
T01-A104 Engine Principles - Theory
T01-A106 Electrical Circuits - Theory
T01-A107 Electrical Engine - Theory
T01-A108 Special Electronics Training
T01-A110 Science
T01-A112 Communications
T01-A114 Mathematics
T01-A116 Public Relations

Level 2
T01-A202 Introduction To Computer Systems - Theory
T01-A206 Throttle Body And Port Injection - Theory
T01-A207 Windshield Wiper Systems - Theory
T01-A208 Introduction To Automatic Transmissions-Theory
T01-A209 Automatic Transmission Overhaul 125C FWD-Theory
T01-A212 Passenger Car & L.D. Truck Brakes - Theory
T01-A216 Welding
T01-A426 Body Mechanical Adjustments
T13-M210 Automotive Related Math
T13-S210 Automotive Related Science

Level 3
T01-A204 Carburation Basics - Theory
T01-A205 Carburation Feedback - Theory
T01-A314 Suspension Steering And Alignment
T01-A316 700 R4 RWD Automatic Transmission
T01-A318 440 T4 FWD Automatic Transmission
T01-A320 Air Conditioning Manual Controls
T01-A322 Engine Diagnosis And Light Repair
T01-A324 Introduction To Clutches And Standard Transmission
T01-A326 Related Science

Level 4
T01-A402 Cruise Control - Theory
T01-A404 Diesel Engine Fuel & Emissions - Theory
T01-A406 Diesel Electronic Control - Theory
T01-A416 AC & Heating Electronic Controls
T01-A418 "M" Car And Tracker TBI And Emissions
T01-A420 5TM-40 Fwd Standard Transmission
T01-A422 5LM-60 Fwd Standard Transmission
T01-A424 Differential And Drivelines
T01-A425 Electrical Options And Accessories
T01-A427 Related Math
T01-A428 Related Science

Level 5
T01-A512 Automatic Transmission Overhaul 180C RWD-Theory
T01-A410 Air Brakes - Theory
T01-A412 Vehicle Pre-Delivery Inspection - Theory
T01-A502 GM 30 Electronics (4 Parts) - Theory
T01-A503 Advanced Fuel Injection
T01-A504 CK Truck Front Axle
T01-A505 Supplemental Restraint Systems
T01-A507 Automatic Transmission Diagnosis - Theory
T01-A510 Electrical Diagnosis
T01-A511 Anti-Lock Brake Systems
T01-A516 4T60E Automatic Transmission

COURSE DESCRIPTIONS
T01-A101 SAFETY - THEORY
Understand importance to developing safe working habits to avoid injury to himself and fellow workers, and to prevent damage to equipment and customers' vehicles.

T01-A102 SHOP TOOLS - THEORY
Demonstrate the ability to select and use the proper tool for each specific job.

T01-A103 SERVICE MANUAL AND BULLETINS - THEORY
Develop skill in locating and extracting information from service manuals, drawings, schematics, and service bulletins.

T01-A104 ENGINE PRINCIPLES - THEORY
Understand the principles of operation and the function and relation of component parts of the internal combustion engine. Includes classification of engines, engine terminology, components, engine lubrication, and cooling.
T01-A106 ELECTRICAL CIRCUITS - THEORY
Theory of operation and diagnosis of electrical circuits for body
and accessories.

T01-A107 ELECTRICAL ENGINE - THEORY
Understand electricity relating to charging, starting, and ignition
circuits.

T01-A108 SPECIAL ELECTRONICS TRAINING
Apply electrical fundamentals to advanced electrical and
electronic circuitry and systems.

T01-A110 SCIENCE
Demonstrate a basic knowledge of matter, solids, simple
machines, gears, pulleys, electricity, heat, friction, lubrication,
and pressure.

T01-A112 COMMUNICATIONS
Enable students to send and receive messages through
effective writing, speaking, and listening to prospective
employers to co-workers, supervisors, and customers to union
and government agencies.

T01-A114 MATHEMATICS
Demonstrate the ability to function (at a minimum level of 60%)
in the mathematic operations required by the automotive trade.

T01-A116 PUBLIC RELATIONS
Develop skills in personal interaction, listening, communicating
(verbally and on paper), and customer relations, as well as
demonstrate acceptable workplace and trade ethics.

T01-A202 INTRODUCTION TO COMPUTER SYSTEMS -
THEORY
Understand the function, servicing, and testing of the board
computer along with its input and output devices.

T01-A204 CARBURATION BASICS - THEORY
Outline basic carburetor operation and identify major
assemblies and circuits.

T01-A205 CARBURATION FEEDBACK - THEORY
Understand the operation, testing and servicing of a feedback
carburetor.

T01-A206 THROTTLE BODY AND PORT INJECTION -
THEORY
Understand the operation of throttle body and port injection.
Explain the operation and identify the components of throttle
body and port injection.

T01-A207 WINDSHIELD WIPER SYSTEMS - THEORY
Understand the operation testing and repair of various motors
and controls used on G.M. vehicles.

T01-A208 INTRODUCTION TO AUTOMATIC
TRANSMISSIONS - THEORY
Understand the construction, operation, service repair, and
diagnostic procedures relating to automatic transmissions.

T01-A209 AUTOMATIC TRANSMISSION OVERHAUL 125C
FWD - THEORY
Demonstrate ability to disassemble, inspect, adjust, and repair
an automatic transmission following procedures outlined in the
service manual.

T01-A210 AUTOMATIC TRANSMISSION OVERHAUL 180C
RWD - THEORY
Demonstrate ability to disassemble, inspect, adjust, and repair
an automatic transmission following procedures outlined in the
service manual.

T01-A212 PASSENGER CAR & L.D. TRUCK BRAKES -
THEORY
Understand the design and operation of hydraulic service
brakes and gain knowledge to carry out quality repair of various
systems.

T01-A216 WELDING
Review the principals of closed hoop fuel control, including
location and operation of related censors and control devices,
and cutting.

T01-A314 SUSPENSION STEERING AND ALIGNMENT
Understand the importance of/and procedures to restore
vehicle to factory specifications. Set up alignment machine and
follow procedures accomplishing a proper alignment.

T01-A316 700 R4 RWD AUTOMATIC TRANSMISSION
Demonstrate ability to disassemble, inspect, adjust, and repair
an automatic transmission following procedures outlined in the
service manual.

T01-A318 440 T4 FWD AUTOMATIC TRANSMISSION
Demonstrate ability to disassemble, inspect, adjust, and repair
an automatic transmission following procedures outlined in the
service manual.

T01-A320 AIR CONDITIONING MANUAL CONTROLS
Comprehend the operation of refrigeration and heating
components along with manual vacuum and electric controls to
enable proper diagnoses and repair.

T01-A322 ENGINE DIAGNOSIS AND LIGHT REPAIR
Understand the principals of construction, operation, and
diagnosis of basic engine systems.

T01-A324 INTRODUCTION TO CLUTCHES AND
STANDARD TRANSMISSION
Understand the operation, diagnosis, and repair of clutches
and standard transmissions.

T01-A402 CRUISE CONTROL - THEORY
Understand the operation, diagnostic, and repair procedures
relating to cruise systems.

T01-A404 DIESEL ENGINE FUEL & EMISSIONS - THEORY
Comprehend the operation of the diesel engine, fuel, and
electrical systems along with emission control devices to
enable systematic diagnoses and repair.
T01-A406 DIESEL ELECTRONIC CONTROL - THEORY
Review purpose and operation of ECM. List system sensors and explain sensor operation and testing.

T01-A410 AIR BRAKES - THEORY
Understand the operation of the air brake system along with the purpose and function of the basic valves and components.

T01-A412 VEHICLE PRE-DELIVERY INSPECTION - THEORY
Understand the proper procedure involved with a pre-delivery inspection including both performance and appearance considerations.

T01-A416 AC & HEATING ELECTRONIC CONTROLS
Comprehend the operation of refrigeration and heating components along with electronic controls and scan tool to enable proper diagnosis and repair.

T01-A418 "M" CAR AND TRACKER TBI AND EMISSIONS
Understand the operation, diagnosis, and repair procedures for non-computer and computer controlled components of TBI fuel and emissions systems for the tracker and "M" car.

T01-A420 5TM-40 FWD STANDARD TRANSMISSION
Understand the operation, diagnosis, disassembly, assembly, and repair of the 5TM-40 standard transmission.

T01-A422 5LM-60 FWD STANDARD TRANSMISSION
Understand the operation, diagnosis, disassembly, assembly, and repairs of the 5LM-60 standard transmission.

T01-A424 DIFFERENTIAL AND DRIVELINES
Understand the operation, diagnosis, adjustment, and overhaul of passenger car and light duty truck differentials and drive lines.

T01-A425 ELECTRICAL OPTIONS AND ACCESSORIES
Understand the operation and diagnostic procedures relating to the electrical accessories used on current passenger cars.

T01-A426 BODY MECHANICAL ADJUSTMENTS
Understand diagnostic procedure and adjustment of all body components and seals.

T01-A502 GM 30 ELECTRONICS (4 PARTS) - THEORY
Teaches the student how to effectively use the extensive on board diagnostic system that vehicles are equipped with.

T01-A503 ADVANCED FUEL INJECTION
Understand diagnostic procedures, ECM operation, Tech 1 "Plus" features, oscilloscope diagnosis, service manual use, and system components on 1989 and newer cars.

T01-A504 CK TRUCK FRONT AXLE
Understand the operation, diagnosis, and servicing of the "K" truck front axle.

T01-A505 SUPPLEMENTAL RESTRAINT SYSTEMS
Understand the recommended procedures for diagnosis and servicing the supplemental inflatable restraint systems.

T01-A507 AUTOMATIC TRANSMISSION DIAGNOSIS - THEORY
The systematic approach to transmission diagnosis through the preliminary testing and utilization of reference materials.

T01-A510 ELECTRICAL DIAGNOSIS
Covers basic series and parallel circuits, power distribution, exterior lighting, and computer controlled circuits. The student will study where to find an electrical circuit, how to read circuit diagrams, and how to test circuits.

T01-A511 ANTI-LOCK BRAKE SYSTEMS
Comprehend the advantage, operation, diagnosis, and repair of ABS like RWAL, 4WAL, Bosch II, Bosch Micro, Teves, and Delco Moraine.

T01-A516 4T60E AUTOMATIC TRANSMISSION
Study the principals of hydraulics and power flows to establish a sound diagnostic procedure. Disassemble, inspect, and reassemble a 4T60E transmission.
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
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with English 200 or 201 and Mathematics 200 or 201;
- Adult Basic Education 11B;

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of English 200, 201, 290 or 911 and one of Mathematics 200, 201, 290, or 911 at a minimum. 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 Admissions/Registration for review.

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).

COURSE OUTLINE
Term 1
B11-A103 Business Mathematics B U A C
B11-A161 Financial Accounting A
B12-L159 Business Law I
B12-C333 Principles Of Organization & Management
B17-E841 Business Communications I

Term 2
B11-A204 Cost Accounting A
B11-A261 Financial Accounting B
B11-A492 Microcomputer Financial Accounting
B15-S313 Microcomputer Productivity Software I
B17-E852 Business Communications II

Term 3
B11-A304 Cost Accounting B
B11-A361 Financial Accounting C
B11-A493 Microcomputer Financial Accounting II
B11-A592 Microcomputer-Payroll And Inventory
B15-S313 Microcomputer Productivity Software II
B17-E843 Business Communications III

COURSE DESCRIPTIONS
B11-A161 BUSINESS MATHEMATICS B U A C
Review of basic fundamentals, application of percentage, profit and loss, trade discounts, retail selling, mark up, inventory turnover, banking, discounting note, collection charges, installment buying, partnership, compound interest, statistics and graphs, annuities, amortization, sales tax, insurance, finance and depreciation.

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 labour, manufacturing overhead, department overhead cost and setting overhead rates.

B11-A261 COST ACCOUNTING B
Application of accounting principles, procedures and techniques as they apply to plant, inventories and equipment, intangible assets, partnership accounting, formation of corporations, share capital and retained earnings, payroll accounting; accounting principles and concepts.

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.

B11-A361 COST ACCOUNTING C
Accounting for corporation-share capital and retained earnings, long-term liabilities and investments, accounting principles and concepts, analyzing financial statements, flow of funds and cash flows, tax considerations in business decisions.

B11-A492 MICROCOMPUTER FINANCIAL ACCOUNTING
Using ACCPAC Software, the students will format their own accounts and financial statements, and enter transactions from a set of comprehensive case studies.
B11-A493 MICROCOMPUTER FINANCIAL ACCOUNTING II
A one-time only course. It is designed to upgrade the student's knowledge of ACCPAC version 5.0 to version 6.1 with the general ledger, accounts receivable and accounts payable modules.

B11-A592 MICROCOMPUTER-PAYROLL AND INVENTORY
Using Accpac software, students will set up their own disks and learn case studies involving payrolls, retail invoicing, and inventory controls.

B12-L159 BUSINESS LAW I
Business Law I is an introductory course emphasizing the basic elements of Business Law. The topics covered in order of presentation will be: The Machinery of Justice; The Law of Torts; Contracts specifically: Offer and Acceptance, Consideration, Capacity, Legality of Object. The remaining elements of contract will be completed in Business Law 11.

B12-O333 PRINCIPLES OF ORGANIZATION & 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.

B15-S213 MICROCOMPUTER PRODUCTIVITY SOFTWARE I
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-S313 MICROCOMPUTER PRODUCTIVITY SOFTWARE II
This course is a continuation of B15-S213 and will cover:
a) DOS to include working with root and subdirectories.
b) Spreadsheet SuperCalc 5 to include formulas, copying, inserting, if statement, lookup, arrange, and graphics.

B17-E841 BUSINESS COMMUNICATIONS I
This course is designed to provide a foundation in the fundamentals of grammar and vocabulary enrichment.

B17-E843 BUSINESS COMMUNICATIONS III
This course is designed to provide a foundation in the fundamentals for punctuation, use of capitals, abbreviations, figures, further vocabulary enrichment, proper sentence and paragraph writing, proper organization and presentation of research materials in report forms, and effective job applications.

B17-E852 BUSINESS COMMUNICATIONS II
This course is designed to provide the student with the skills of writing various types of business letters and of composing basic business reports.
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'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 - 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and English 100 or 101;

or

- Adult Basic Education 7-10 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 students may submit other academic equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher) or successful completion of English (100, 101 or 190) and Mathematics (100, 101 or 190). Mature students must also meet requirement (B) 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 Admissions/Registration for review.

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).

PROGRAM OUTLINE
Term 1
B11-A102 Basic Reading
B11-A105 Business Mathematics
B11-A162 Introductory Accounting

B17-E651 Business Communications
B18-T100 Keyboarding For Information Processors

Term 2
B11-A106 Business Mathematics
B11-A163 Introductory Accounting
B11-A205 Cost Accounting Principles And Applications
B12-L199 Business Law I
B15-S213 Microcomputer Productivity Software I
B17-E652 Business Communications

Term 3
B11-A206 Cost Accounting Principles And Applications
B11-A202 Introductory Accounting
B11-A492 Microcomputer Financial Accounting
B12-O333 Principles Of Organization & Management
B17-E653 Business Communications-Term III

Term 4
B11-A304 Cost Accounting B
B11-A361 Financial Accounting C
B11-A592 Microcomputer-Payroll And Inventory
B15-S313 Microcomputer Productivity Software II
B17-E843 Business Communications III
S03-N001 Communications
S03-N003 Reading & Study Skills
S03-N004 Keyboarding
S03-O001 Mathematics
S03-P001 Business & Consumer Fund

COURSE DESCRIPTIONS
B11-A102 BASIC READING
This course is designed to improve comprehension, rate, and vocabulary along with developing study, test writing and note taking skills.

B11-A106 BUSINESS MATHEMATICS
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-A162 INTRODUCTORY ACCOUNTING
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
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, dishonoured notes receivable, bad debts and allowance for doubtful accounts.

B11-A205 COST ACCOUNTING PRINCIPLES AND APPLICATIONS
This is a compulsory course taught in trimester 2 of Business Accountancy Integrated program. Students will acquire a basic working knowledge of the job order method of cost accounting, including accounting for materials costs, and direct labour costs.

B11-A206 COST ACCOUNTING PRINCIPLES AND APPLICATIONS
This is a compulsory course taught in trimester 3 of the Business Accountancy Integrated program. The course material is a continuation of the Job Order Method of cost accounting covered in Cost Accounting A.

B11-A262 INTRODUCTORY ACCOUNTING

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.

B11-A361 FINANCIAL ACCOUNTING C
Accounting for corporation-share capital and retained earnings, long-term liabilities and investments, accounting principles and concepts, analyzing financial statements, flow of funds and cash flows, tax considerations in business decisions.

B11-A492 MICROCOMPUTER FINANCIAL ACCOUNTING
Using ACCPAC Software, the students will format their own accounts and financial statements, and enter transactions from a set of comprehensive case studies.

B11-A582 MICROCOMPUTER-PAYROLL AND INVENTORY
Using ACCPAC Software, students will set up their own disks and learn case studies involving payrolls, retail invoicing, and inventory controls.

B12-L199 BUSINESS LAW I (BAI)
The course is eleven 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-O333 PRINCIPLES OF ORGANIZATION & 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.

B15-S213 MICROCOMPUTER PRODUCTIVITY SOFTWARE I
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-S313 MICROCOMPUTER PRODUCTIVITY SOFTWARE II
This course is a continuation of B15-S213 and will cover:
a) DOS to include working with root and subdirectories.
b) Spreadsheet SuperCalc 5 to include formulas, copying, inserting, if statement, lookup, arrange, and graphics.

B17-E651 BUSINESS COMMUNICATIONS
This course deals with basic sentence structure: programs, verbs, fragments run-ons, main and subordinate clauses, prepositional and verbal phrases. Also, oral reports.

B17-E652 BUSINESS COMMUNICATIONS
Students learn to write definitions which contain the word defined, a general category, and a specific description. Students learn to write paragraphs of:
a) definition,
b) example and description,
c) comparison and contrast,
d) cause and effect. They will write these paragraphs from information supplied as well as from their own research. Students will learn to use correctly and distinguish between a selected list of words arranged in sets. For example - program, coarse: assent, ascent, etc.

B17-E653 BUSINESS COMMUNICATIONS
The punctuation topics include: abbreviations, quotations, capitalization, and parentheses. Writing skills include work on polishing written work, being explicit, and using variety.

B17-E843 BUSINESS COMMUNICATIONS III
This course is designed to provide a foundation in the fundamentals for punctuation, use of capitals, abbreviations, figures, further vocabulary enrichment, proper sentence and paragraph writing, proper organization and presentation of research materials in report forms, and effective job applications.
B16-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).

S03-N001 COMMUNICATIONS
Writing Skills: Review of grammar, development of writing, writing of paragraphs, letters and summaries. Reading Skills: Speed and comprehension, vocabulary development; study skills.

S03-N003 READING & STUDY SKILLS
Develop reading flexibility, improve reading efficiency, learn skimming and scanning techniques, increase general and technical vocabulary, develop comprehension skills, use the SQ3R study system control your time, improve your ability to concentrate and to remember facts, take useful notes from lectures, get involved in class discussions and prepare for examinations.

S03-N004 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 MATHEMATICS
Personal finance, loans and investments, taxation, business organization.

S03-P001 BUSINESS & CONSUMER FUND
Levels of government, distribution of power, types of business and labour organizations, national income, supply and demand, monetary and banking systems, etc.
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.

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

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with English 300 or 301 and Mathematics 300 or 301. (Standing in Mathematics 300 is recommended);
- Adult Basic Education 11B, with supplemental mathematics modules.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in Mathematics 300 or 301 and English 300 or 301. 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, Admissions/Registration for review.

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 and certified accounting programs.

PROGRAM OUTLINE

YEAR 1
Term 1
B11-A191 Introductory Accounting A
B12-E171 Economic Principles
B13-M612 Introduction To Business
B13-R713 Business Mathematics
B15-S301 Intro To Data Processing
B16-E221 Basic Business Communications

Term 2
B11-A291 Introductory Accounting B
B12-E272 Economic Principles
B13-R703 Financial Mathematics
B14-M101 Basic Marketing
B15-S201 Microcomputer Productivity Software
B16-E121 Oral Communications

Term 3
B11-A391 Introductory Accounting C
B12-E373 Economic Principles
B13-R706 Statistics I
B13-S513 Human Behavior In Organization
B14-M202 Basic Marketing
B16-E313 Report Writing

Term 4
Compulsory courses:
B12-L360 Business Law
B13-R707 Statistics II
Students will elect any four of the following courses:
B11-A491 Intermediate Accounting A
B11-A492 Microcomputer Financial Accounting
B12-E472 International Economics & 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 II
B13-M613 Personnel Studies
*B13-R701 Production Management
B13-R705 Quantitative Methods
B13-R709 Securities Investment
*B13-S544 Sociology
*B14-M601 Merchandising
*B14-R602 Marketing Research

Term 6
Compulsory courses:
B12-P665 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-M614 Canadian Real Estate
B13-M618 Credit Management
B13-M623 Cooperative Enterprise
B13-S515 Contemporary Social Issues In Canada
This involves changes in accounting methods, estimating errors, incomplete records, statements of change in financial position, comparative statements and ratio analysis.

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.

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.

A continuation of the study of macro economics 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. The 1975 Wage Price controls program and finally a study of the limitations to economic growth.

This course allows the student to use acquired economic tools to study and analyze important current events with economic and political implications as there are: the urban crisis, inflation and unemployment, income distribution, the energy crisis and pollution, and others.

Canada's exports equal about 25% 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 course 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 to the European Economic Community.

A study of the Canadian labor market which examines composition of the labour force, unemployment, changing demand for labor, immigration and emigration, cyclical unemployment and the relationship 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.

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 designed to have students examine and analyze important economic issues and perspectives of the economy of Manitoba.

**B12-I491 RISK AND INSURANCE**
The course provides an introduction to and an analysis of the concept of risk (the chance of losses) and its efforts 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, the various types, functions and uses of life insurance.

**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-L466 BUSINESS LAW II**
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-P555 ENTREPRENEURSHIP**
This course focuses on the development of new business ventures, as well as on the operation or management of a small business. Cases have been developed to stimulate the student to analyze the opportunities, risks and factors necessary for the success of the entrepreneur and his/her new enterprise.

**B12-P666 ENTREPRENEURSHIP PRACTICUM**
In small groups, students will prepare a formal feasibility study (business plan) for starting a profit-making enterprise and then present it to a panel of instructor-judges for examination. Written, oral and group work will be evaluated.

**B13-M612 INTRODUCTION TO BUSINESS**
See B13-M611 Introduction to Business. A broad analysis of business concepts, functional internal characteristics of a business and the interrelationships among business, government and the consumer.

**B13-M613 PERSONNEL STUDIES**
The objective of the course is to give the student exposure to current management practices and principles. The theory section will deal with the role of the manager as a decision maker. Quantitative methods of management as they apply to business will be covered.

**B13-M614 CANADIAN REAL ESTATE**
This course explores all aspects of real estate as an investment with particular emphasis in Manitoba. As well as private home purchasing, interest is focused on commercial properties and land speculation. This course integrates the student's 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 COOPERATIVE ENTERPRISE**
The general objectives of the course are to: 1. Appreciate the cooperative sector of the economy of Manitoba and Western Canada. 2. Understand the problems and principles that are unique to the management of Canadian cooperatives and credit unions. 3. Research the potential for new cooperative development as a member of a team of approximately 7 students.

**B13-M624 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 behaviour 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**
Topics include work study, production standards, plant and workstation layout, quality control, critical path analysis, and equipment investment 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-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 I**
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 II**
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-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-S513 HUMAN BEHAVIOR IN ORGANIZATION**
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-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 significant for society.
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 inter-relationship 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-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-A502 RETAIL FINANCIAL MANAGEMENT
This course deals with mathematics and accounting for retail operation; financial statement analysis; accounting for the management of departmental and branch operation consolidations; accounting for receivables and inventories; preparation of merchandise budgets; internal auditing courses. Retail budgeting and expense control are covered in detail.

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-M101 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-M202 BASIC MARKETING
Basic marketing builds on the principles developed in 1st term. 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; it is introduced to marketing research and finally learns to develop integrated marketing strategy.

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 retail management.

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 methods; b) an actual research project is undertaken by students working in groups.

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.

B15-S201 MICROCOMPUTER PRODUCTIVITY SOFTWARE
Students are taught about various computer applications in business. Topics covered are typical large-scale systems and the microcomputer applications of word processing and spreadsheet.

B15-S301 INTRO TO DATA PROCESSING
The aim of this course is to familiarize the student with the basic principles of data processing. To achieve this, the student will be provided with instruction in the following areas:
1) history and fundamentals;
2) computer hardware;
3) telecommunications;
4) computer software;
5) software development and flowcharting;
6) programming in BASIC.

B15-S601 MICROCOMPUTER DATA BASE
Microcomputer Data Base presents the RBASE 5000 software package.

B16-E121 ORAL COMMUNICATIONS
This course is designed to increase the student's ability to listen and speak well. Three hours each week has been scheduled for lectures and workshops. It is essential that the student attend regularly to contribute as speaker and listener.

B16-E221 BASIC BUSINESS COMMUNICATIONS
The fundamentals of business communications are covered: techniques of business letters, promotional writing, answering complaints, collecting material and writing reports. Basic grammar will be incorporated to the depth indicated by the individual's need.

B16-E313 REPORT WRITING
The course is designed to familiarize the student with the variety of report formats in use today. Concise, correct and clear usage is stressed, as is the proper development of report themes, conclusions, and recommendations.
BUSINESS ADMINISTRATION INTEGRATED

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 work load 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.

ENTRANCE REQUIREMENTS
A - 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation); with Mathematics 100 or 101 and English 100 or 101;

- Adult Basic Education 7-10 with supplemental mathematics and communications modules;

B - acceptable performance on entrance tests, administered by the college, which survey basic skills in mathematics, language, and reading,

C - completion of an applicant information sheet;

D - a personal interview with the Selection Committee.

This is a special selection program. The Selection Committee will interview applicants who have completed the preliminary entrance requirements and will select students on the basis of preparation, motivation and maturity.

Mature Student Admission. Mature students may submit other academic equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher) or successful completion of one of English 100, 101, 190; Mathematics 100, 101, 190. Mature students must also meet requirements (B), (C), and (D) 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE
YEAR 1
Term 1
B13-I800 Business Mathematics
B13-I801 Introduction To Business
B14-M111 Marketing 1
B14-S501 Psychology
R01-B001 Study Skills - Access Course
R01-B002 Communications I - Access Course
R01-B003 Professional Development I - Access Course
R01-B004 Supplementary Instruction - Access Course

Term 2
B12-B111 Economics 1
B13-R713 Business Mathematics
B14-M122 Marketing 2
R01-D017 Communications II
R01-N009 Professional Development II
R01-N011 Supplementary Instruction II

Term 3
B11-A193 Intro Accounting A
B12-E212 Economics 2
B16-E131 Oral Communications
B13-R703 Financial Mathematics
R01-N014 Supplementary Instruction III
R01-N019 Professional Development III

YEAR 2
Term 4
B11-A293 Intro Accounting B
B12-E313 Economics 3
B14-S544 Sociology
B18-E231 Basic Business Communications
R01-N016 Supplementary Instruction IV

Term 5
B11-A393 Intro Accounting C
B13-I805 Statistics I
B13-R703 Financial Mathematics
B15-S602 Intro To Data Processing
B16-E314 Report Writing
R01-N017 Supplementary Instruction V

Term 6
B12-E676 Manitoba Economic Perspectives
B13-M625 Politics & Government in Canada
B13-R714 Statistics II
B13-S515 Contemporary Social Issues in Canada
B15-S604 Microcomputer Productivity Software
R01-N018 Supplementary Instruction VI
plus three electives, one each from Terms 7, 8 and 9

YEAR 3
Term 7
Compulsory courses
B12-L360 Business Law
Students may elect three of the following courses:
B11-A491 Intermediate Accounting A
B11-A492 Microcomputer Accounting Applications
B12-E472 International Economics & Business
**Term 8**

**Compulsory courses:**
- B12-E466 Business Law II
- Students may elect three of the following courses:
  - B11-A507 Cost & Management Accounting A
  - B11-A591 Intermediate Accounting B
  - B12-E471 Economic issues in Canada

**Term 9**

**Compulsory courses:**
- B13-M602 Management
- B12-P666 Entrepreneurship Practicum
- Students may elect three of the following courses:
  - B11-A607 Cost & Management Accounting B
  - B11-A691 Intermediate Accounting C
  - B12-E580 Industrial Relations
  - B12-1491 Risk And Insurance
  - B13-M614 Canadian Real Estate
  - B13-M618 Credit Management
  - B13-M623 Cooperative Enterprise
  - B14-A502 Retail Financial Management
  - B14-A501 Advertising
  - B15-S601 Microcomputer Data Base

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

**COURSE DESCRIPTIONS**

**B13-1800 BUSINESS MATHEMATICS**
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.

**R01-B001 STUDY SKILLS**
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**
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**
Students learn self assessment and develop professional behaviours. 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, Inner City Nursing Program and Northern Nursing Program students.

All other course descriptions for this program can be found under Business Administration Course Descriptions, pages 69 - 72. Please note that the courses listed below have different course numbers.

- B11-A193 INTRO ACCOUNTING A; see Business Administration B11-A191.
- B11-A293 INTRO ACCOUNTING B; see Business Administration B11-A291.
- B11-A393 INTRO ACCOUNTING C; see Business Administration B11-391.
- B12-B111 ECONOMICS I; see Business Administration B12-E171.
- B12-E212 ECONOMICS II; see Business Administration B12-E272.
- B12-E313 ECONOMICS III; see Business Administration B12-E373.
- B13-I801 INTRODUCTION TO BUSINESS; see Business Administration B13-M612.
- B13-I804 HUMAN BEHAVIOUR IN ORGANIZATIONS; see Business Administration B13-S513.
- B13-1805 STATISTICS I; see Business Administration B13-R706.
- B14-M111 MARKETING I; see Business Administration B14-M101.
- B14-M122 MARKETING II; see Business Administration B14-M202.
- B15-S602 INTRO TO DATA PROCESSING; see Business Administration B15-S301.
- B15-S604 MICROCOMPUTER PRODUCTIVITY SOFTWARE; see Business Administration B15-S201.
BUSINESS SKILLS INTEGRATED

PURPOSE
To develop keyboarding and office-related skills (and possible additional skills in accounting, machine transcription and/or word processing).

PROGRAM
Business Skills Integrated is a 10-month certificate program with an August entry date. As with all integrated programs, it combines adult upgrading with regular program content to make the upgrading more relevant. The program is designed to prepare students for possible employment as receptionists, clerk-typists, word-processing operators or secretaries through the development of keyboarding, filing, office procedures and related business skills. The extent of skills developed and future employment opportunities will vary from student to student.

Depending on motivation and ability, additional skills in word processing, accounting, and/or machine transcription may be attained.

ENTRANCE REQUIREMENTS
- Grade 8 or G.E.D. standing (standard score of 41 on each sub-test); and
- basic skills in spelling, grammar and language usage

Please note that applicants may be tested for basic skills in mathematics, language and reading.

EMPLOYMENT POTENTIAL
Graduates of this program have found employment as receptionists, clerk-typists, word-processing operators and secretaries.

PROGRAM OUTLINE
Compulsory courses:
B35-I303 Business Mathematics
B35-I304 Office Procedures
B35-I401 Filing
B35-I414 Business Communications
B35-I603 Intermediate Keyboarding
B35-I802 Introductory Keyboarding

Optional courses:
B35-I535 Introduction to Word Processing
B35-I402 Machine Transcription
B35-I451 Accounting
B35-I534 Advanced Keyboarding

COURSE DESCRIPTIONS
B35-I303 BUSINESS MATHEMATICS
This course is designed to provide a foundation in the fundamentals of basic business mathematics and operation of an electronic calculator.

B35-I304 OFFICE PROCEDURES
The student is involved in learning the duties and responsibilities of an office worker and developing good grooming and working habits. Topics include the importance of good human relationships in the business office; sources of information; modern communication systems; postal services; banking services; and job search skills. Strong emphasis is placed on practical work, including the opportunity to work in a model office. This course is designed to promote active student participation and interest.

B35-I401 FILING
This course is designed to provide training in the theory and practical application of alphabetic card filing, alphabetic correspondence filing, geographic correspondence filing, numeric correspondence filing, simple course correspondence filing, and charge out and follow up procedures.

B35-I402 MACHINE TRANSCRIPTION
This course is designed to familiarize the student with the proper procedures for using the machine transcription equipment. The student will learn to produce mailable copy.

B35-I414 BUSINESS COMMUNICATIONS
This course is a comprehensive communications course that includes training in listening and reading skills, in word usage and the principles of grammar; in number, abbreviation and capitalization style; in punctuation usage; and in the principles of writing some types of business correspondence.

B35-I451 ACCOUNTING
This course is designed to familiarize the student with some basic accounting tasks, e.g. maintain petty cash fund and record, use a one-write system, perform selected business banking functions and maintain records to trial balance for a service firm.

B35-I534 ADVANCED KEYBOARDING
This course is designed to continue development of speed and accuracy; to develop skill in organizing tasks, coordinating information and decision-making through in-basket type projects. A speed of 50 words per minute is to be achieved on five minute timings.

B35-I535 INTRODUCTION TO WORD PROCESSING
This course is designed to familiarize the student with the basic operations of word processing on a personal computer. The following topics are covered: keyboarding, formatting, editing, printing of one-page and multiple-page documents and merging forms with variables.

B35-I603 INTERMEDIATE KEYBOARDING
This course is designed to develop keyboarding speed and accuracy and to develop skill in and an understanding of the production of business correspondence, reports, tables, forms, etc. Speed is developed to at least 45 words per minute on five minute timings.

B35-I802 INTRODUCTORY KEYBOARDING
This course is designed to provide training in correct keyboarding techniques. The student will learn to format material on a page using horizontal, vertical, spread and block centering; to format open-style tables; and to format business letters and personal business letters in full block style. The student will work towards developing a minimum speed of 25 words per minute on five-minute timings.
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 your knowledge and skills in the areas of general business and the area that you select from the specializations of marketing, accounting or secretarial. The program will assure you that you have knowledge in business skills and educational methods.

ENTRANCE REQUIREMENTS
The following criteria are used in selecting students:

1. satisfactory standing in twenty (20) credits which satisfy the Manitoba Education and Training description of the high school program, with

2. five (5) of these credits held at the 3XY level, so that these five include,
   a) a standing in English 300
   b) a standing in Mathematics 300 or 301
   c) a minimum of three (3) courses at the 300 level.
   d) a 60% average in 300 level courses.

3. all applicants will be interviewed by the admissions committee. The college will notify you of time, date and location.

4. letters of recommendation, high school scholastic record, and employment records are reviewed during the admissions process.

Mature Student Admission. Mature students may submit either a Manitoba Education and Training Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits. Mature students are strongly advised to include formal course work in mathematics and English at the 300 or 301 level as part of their preparation for College. Applicants applying for admission as 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 Department Head, Teacher Education, for review.

EMPLOYMENT POTENTIAL
After successful completion of this program, you will be eligible to teach in the secondary schools in Manitoba. The majority of job opportunities are available in rural areas of the province.

PROGRAM OUTLINE
You may choose one of the three specialities in this area — Secretarial, Accounting or Marketing.

First Year - Red River Community College
Common core for all students
B22-B112 Keyboarding & Basic Formatting
B22-B113 Keyboarding & Advanced Formatting
B22-B120 Data Processing I

B22-B205 Management Accounting Systems
B22-B208 Business Organization & the Consumer
B22-B220 Data Processing II
B22-T111 Seminar & School Experience
B23-W102 Cooperative Business/Industrial Education

Secretarial Specialty
B22-B110 Shorthand

Accounting and Marketing Specialty
B22-M102 Marketing

Second Year - University of Manitoba
43.202 Psychology of Learning & Instruction
81.216 Principles of Business Education
81.217 Business and Industrial Enterprise
63.202 Communication
116.101 Social Foundations of Education
116.301 School Organizations
29.203 Commercial Law
18.120 Principles of Economics
Elective for second teachable or area of specialization in business education.

Third Year - Red River Community College
Common core for all students
B22-E203 Program Development
B22-E204 Educational Testing & Evaluation
B22-E212 Teaching Typewriting & Office Systems Management
B22-E213 Methods of Teaching Basic Business
B22-E220 Methods of Teaching Accounting & Data Processing
B22-B222 Records Management
B22-T211 Student Teaching
Secretarial Specialty
B22-E222 Comparative Shorthand Systems

Accounting Specialty
B22-B210 Intermediate Accounting II

Marketing Specialty
B22-B222 Methods of Teaching Retailing

Fourth Year - University of Manitoba
81.306 Topics in Business Education
81.408 Curriculum Development in Business and Education
81.409 Issues in Business Education
To be selected in consultation with Faculty Advisors in areas of second teachable or in-depth business education

Suggested Teachables
Art
Geography
Biology
German
Chemistry
Computer Science
History/Canadian Studies
Selected Areas Administrative Studies
English
Physics
French
Spanish
German
General Science
Theatre
Ukrainian

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Please note that the Course Descriptions below include Red River Community College courses only. For further information on the University of Manitoba courses, please see the Business Teacher Education program brochure.

COURSE DESCRIPTIONS

B22-B110 SHORTHAND I (Optional)
A course introducing elementary principles and practices in Pitman Shorthand with daily instruction in recording, writing and transcription.

B22-B112 KEYBOARDING & BASIC FORMATTING
Basic fundamentals and techniques in keyboard learning are stressed and speed in straight copy ranges from 30-40 wpm. Production of letters, tables and manuscripts in basic styles is required at specific speeds. Prerequisite: A typing speed of 25 wpm.

B22-B113 ADVANCED FORMATTING
Skill building in straight copy is continued as well as further instruction in more complicated styles of letters, tables and manuscripts. Speed requirements in both areas are increased and straight copy speed is increased to 50-60 wpm. The course also includes modules in word processing and dictaphone. Prerequisite: B22-B112.

B22-B116 FUNDAMENTALS OF ACCOUNTING
A course in double entry bookkeeping routine including special journals, subsidiary ledgers and control accounts, adjustments for and preparation of financial statements.

B22-B120 DATA PROCESSING I
A general overview of the development of business data processing dealing with hardware, software, data communications, internal architecture, and information systems. A series of BASIC programs using loops, decisions and sequential files, and assignments using the basic functions of word processing, data base, spreadsheet and accounting software will be completed on a microcomputer.

B22-B209 INTERMEDIATE ACCOUNTING I
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. Pre-requisite: Grade of C in B22-B116. (Equivalent to 9.201 in Faculty of Management, University of Manitoba.)

B22-B210 INTERMEDIATE ACCOUNTING II (Optional)
Includes an in-depth study of accounting principles and techniques as applied to long term investments, inventories, general problems, flow matching and estimation procedures, and intangible assets. The course also deals with accounting for corporations. Prerequisite: Grade C in B22-B209.

B22-B220 DATA PROCESSING II
An introduction to business data processing including the design of business systems and information systems, the structure of data files, and the utilization of microcomputer word processing, data base, spreadsheet and accounting software for business applications. Prerequisite: 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 course.

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-E209 METHODS OF TEACHING RETAILING (Optional)
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 courses.

B22-E212 TEACHING TYPEWRITING AND OFFICE SYSTEMS MANAGEMENT
Preparation for instruction in typewriting with emphasis on development of resources, evaluation in relation to psychomotor domain. Research will be conducted on office systems and its implication for classroom teaching procedures.
B22-E213 METHODS OF TEACHING BASIC BUSINESS
Preparation to teach basic business, economics and law. Evaluation of various methods, teaching aids and objectives. Microteaching is also a part of this course.

B22-E220 METHODS OF TEACHING DATA PROCESSING
The preparation to teach accounting and data processing using high school curriculum guides and texts to determine the content and resources, and plan instructional techniques and objectives. The use of accounting, data base and spreadsheet microcomputer applications software will be emphasized. Prerequisite: B22-B116 and B22-B120 or equivalents.

B22-E222 COMPARATIVE SHORTHAND SYSTEMS (Optional)
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 (Optional)
This course is designed to give students an introduction to the fundamentals of marketing. It will serve two types of students. The first group will be those students who are marketing majors who will use the course as a foundation upon which further study can be based. The second group will be the accounting majors for whom this will probably be the only marketing course they will take.

B22-T111 SEMINAR AND SCHOOL EXPERIENCE (Optional)
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 in his or her student teaching period.

B22-T211 STUDENT TEACHING
A continuation of B22-T111 with less emphasis on observation and more overall teaching responsibilities including planning, classroom management, evaluation, and extracurricular activities.

B23-W102 COOPERATIVE BUSINESS/INDUSTRIAL EDUCATION
A special course designed to provide educational experiences relevant to Business Teacher Education students in an business environment. The experience will involve as many aspects of the concerned business as possible. The course will be individualized according to a student's background, and a project summarizing the student activities will be a major requirement.
PURPOSE
To develop knowledge and skills to enter the carpentry trade; to convey a sound knowledge of woodworking machines and safe working practices; to familiarize the student with materials and procedures needed to enter related occupations such as cabinet making, furniture making, forming and sales.

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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101; English 100 or 101 is strongly recommended;

- Adult Basic Education 7-10 Program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level and one of Science 130, 101, or 190. Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE
Term 1
T02-C001 Handtools, Theory
T02-C002 Handtools, Practical
T02-C003 Woodworking Machines, Theory
T02-C004 Woodworking Machines, Practical

T02-C005 Concrete Form Construction, Theory
T02-C006 Concrete Form Construction, Practical
T02-C007 General Framing, Theory
T02-C008 General Framing, Practical
T02-C009 Equal Pitch Roofing, Theory
T02-C010 Equal Pitch Roofing, Practical
T02-C011 Stairs, Theory
T02-C012 Stairs, Practical
T02-C013 Finishing, Theory
T02-C014 Finishing, Practical
T02-C015 Cabinet Work, Theory
T02-C016 Cabinet Work, Practical
T02-C019 Surveying, Theory
T02-C020 Surveying, Practical
T02-C021 Estimating, Theory
T02-C022 Estimating, Practical
T02-C023 In-Industry Work Experience
T02-P501 Wood Finishing, Theory
T02-P502 Wood Finishing, Practical
T03-R011 Blue Print Reading And Sketching For Carpentry PE
T13-M512 Carpentry Math
T13-S512 Carpentry Science
T14-C504 Communication

COURSE DESCRIPTIONS
T02-C001 HANDTOOLS, 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 HANDTOOLS, PRACTICAL
Practical use of all tools in project such as woodworking joints, coping mouldings, 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, planer, shaper, mortiser, 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 mouldings, capriole legs, practice with operation of stationary and portable machines.

T02-C005 CONCRETE FORM CONSTRUCTION, THEORY
Footing, foundation walls for single and multiple dwelling units, concrete slabs, sidewalk steps, piles, columns, beams, ceilings and the stripping 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 opening for doors,
windows, stairs, etc., basic principles involving wooden members in masonry buildings, insulation, building papers, vapour 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, basking 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 facia 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, ball usters 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 sidings 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 layout 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 labour subtrades, 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-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-R011 BLUE PRINT READING AND SKETCHING FOR CARPENTRY PE
Drawing interpretation and preparation as applied to the carpentry trade.

T13-M512 CARPENTRY MATH
Fractions, decimals, percent, board measure, area, rectilinear, square root circular measurement, ratio and proportion, volume, cylinder, cones, pyramids.

T13-S512 CARPENTRY SCIENCE
Study of wood -- general information, classification, structure types, seasoning, sawing, grain defects, preserving, plywood and grades. Timber Fasteners -- holding power, types of nails, application. Abrasive -- types, sizing, use, basic elements. Insulation and heat loss fundamentals -- methods of heat transfer and loss from buildings, new method of rating and identifying insulation, different building materials and types of construction, general classes and types, application, vapour barriers, causes of condensation, cures.

T14-C504 COMMUNICATION
A self-paced practical program that develops communications skills from four viewpoints: job-seeker, employee, junior supervisor, small business owner. The course is tailored to fit the needs of individual students and the requirements of the Advisory Boards.
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 self-imposed deadlines.

ENTRANCE REQUIREMENTS
A - 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with English 100 or 101, Mathematics 100 or 101, and Science 100 or 101; or
- Adult Basic Education 7-10 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 recent X-ray, medical, and dental certificates attesting to good health (required after an applicant receives notice of acceptance).

Although a selection committee is not a standing requirement, most applicants will be asked to attend an orientation and interview.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of English 100, 101 or 190; one of Mathematics 100, 101, 190, or Practical Mathematics-Elementary/Junior High Level; and one of Science 100, 101 or 190. Mature students must also meet entrance requirements (B), (C), and (D) 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 Admissions/Registration for review.

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.

PROGRAM COMPETENCIES
Term 1
B09-0N06 Demonstrate Proc/Proc. For Internal Cash Control
B09-0N07 Duties Of Petty Cashier & Petty Cash Fund
B09-0N08 Prepare Bank Reconciliation/Correcting Journal
B09-0N13 Calculate & Record Payroll
B09-0N14 Initiate & Employ A Payroll Application
B09-0N15 Analyze Business Transactions & Affects
B09-0N01 Describe Human Factors In The Work Environment
B09-0N02 Understand Perceptual Systems
B09-0N03 Describe The Dynamics Of Small Groups
B09-0N04 Demonstrate Understanding Of Motivation
B09-0N05 Apply The Principles Of Organization
B09-0N06 Describe Leadership Skills & Leadership Challenges
B09-0N07 Describe A Humanized Work Place (Morale)
B09-0N08 Describe Dynamics Of Change In A Work Environment
B09-0N09 Identify Equal Employment Opportunities
B09-0N10 Identify Personal Attitude & Stress Mgmt.
B09-0N01 Accounting Chef
B09-0N02 Introduction To The Social Sciences
B09-0N03 Nutrition
B09-0N04 Practice: Current Nutrition Guidelines
B09-0N05 High Fibre Complex Carbohydrate Menu Items
B09-0N06 Low Sodium, Low Fat Menu Items
B09-0N07 Complete Protein Vegetarian Entree
B09-0N08 Describe Elements Essential To Food Products
B09-0N09 Explain Basic Sani. Principles & Procedures
B09-0N10 Explain Basic Kitchen Safety Rules And Procedures
B09-0N11 Explain Safe & Efficient Use Of Kitchen Equipment
B09-0N12 Use Kitchen Knife Safety Anci Efficiently
B09-0N13 Explain Standard Rec, Meas.& Calculate Conversions
B09-0N14 Demonstrate Food Preparation Skills
B09-0N15 Identify Elements Essential To Food Products
B09-0N16 Explain Seasonings, Flavorings, Herbs, Spices
B09-0N17 Explain The Preparation Of Basic Stocks
B09-0N18 Prepare Sauces
B09-0N19 Prepare Soups
B09-0N20 Cook Veg., Rice, Pasta & Dumplings
B09-0N21 Cook Meat, Fish & Poultry
B09-0N22 Debone, Cut & Portion Meat, Fish & Poultry
B09-0N23 Describe Preparation Of Typical Breakfast Items
B09-0N24 Describe The Use Of Dairy Products
B09-0N22 Prepare Coffee & Tea
B09-0N25 Prepare A Selection Of Dishes As Per Menu
B09-0N26 Serve Food & Beverage In Dining Room
B09-0N27 Explain Dining Room Sanitation Principles
B09-0N28 Explain Dining Room Safety Procedures
B09-0N29 Prepare For Service
B09-0N30 Serve Customer
B09-0N31 Prepare Patissierie Items
B09-0N32 Identify Baking Ingredients
B09-0N33 Prepare Yeast & Raised Goods
B09-0N34 Prepare A Variety Of Pastries
B09-0N35 Prepare Cakes, Sweets & Desserts
B09-0N36 Describe Elements Of Cost Control Of Kitchen Mngt
B09-0N37 Control Mechanisms/Record Food Items Sold
B09-0N38 Explain Elements Of Purchasing/Inventory Control
B09-0N39 Identify Purchasing Criteria For Food
B09-0N40 Describe Receiving, Storing & Issuing Procedures

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B33-OF05 Calculate Recipe Costs, Portion Costs, Etc.
B33-OG00 Prepare Garde Manger Items
B33-OG01 Prepare Sandwiches
B33-OG02 Prepare Salads & Dressings
B33-OG03 Prepare Appetizers
B33-OG04 Buffet Preparation & Services
B33-OH00 Explain Mgmt Of Human Resources
B33-OH01 Describe Basic Concepts Of Personnel Mgmt
B33-OH02 Perform Job Analysis/Description/Specification
B33-OH03 Recruit And Select Employees
B33-OH04 Explain Hotel/Rest. Training & Development
B33-OH05 Evaluate Employee Performance
B33-OH06 Explain Factors Affecting Labour Costs
B33-OI00 Design Menu & Kitchen Layout
B33-OI01 Develop Menu
B33-OI02 Design Layouts Of Kitchen Equipment

COURSE DESCRIPTIONS
B11-A218 ACCOUNTING CHEF
This course is designed for the student to give 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.

B13-S502 INTRODUCTION TO THE SOCIAL SCIENCES (HRA)
See B13-S501.

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.

B30-0J00 PRACTICE: CURRENT NUTRITION GUIDELINES
Must be able to practice current nutrition guidelines.

B30-0J01 HIGH FIBRE COMPLEX CARBOHYDRATE MENU ITEMS
Must be able to select and prepare high fibre complex carbohydrate menu items.

B30-0J02 LOW SODIUM, LOW FAT MENU ITEMS
Must be able to select and prepare low sodium, low fat menu items.

B30-0J03 COMPLETE PROTEIN VEGETARIAN ENTREE
Must be able to select and prepare a complete protein vegetarian entree.

B33-BX01 PRACTICAL I
This constitutes a summation of the student’s practical performance.

B33-BX02 PRACTICAL II
This constitutes a summation of the student’s practical performance.

B33-DX01 PRACTICAL PASTRY
This constitutes a summation of the student’s practical performance.

B33-0A01 EXPLAIN BASIC SANITATION, PRINCIPLES & PROCEDURES
Must be able to describe basic sanitation principles and explain appropriate application to food preparation and storage, garbage disposal and equipment maintenance.

B33-0A03 EXPLAIN SAFE & 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.

B33-0A04 USE KITCHEN KNIFE SAFELY AND EFFICIENTLY
Will learn how to use kitchen knives safely and efficiently.

B33-0A05 EXPLAIN STANDARD REC, MEAS.& CALCULATE CONVERSIONS
Will learn how to explain stand rec., measures, and calculate conversions.

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, 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 & 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 & POULTRY
Must be able to cook meat, poultry and fish 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 & PORTION MEAT, FISH & POULTRY
Must be able to prepare and cut a selection of meat, fish and poultry and perform cutting test(s).
B33-OB09 DESCRIBE PREPARATION OF TYPICAL BREAKFAST ITEMS
Must be able to describe the preparation of typical breakfast items.

B33-OB10 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-OB11 PREPARE COFFEE & 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-OD01 EXPLAIN DINING ROOM SANITATION PRINCIPLES
Must be able to describe and explain the principles of basic sanitation expected of all serving personnel.

B33-OD02 EXPLAIN DINING ROOM SAFETY PROCEDURES
Must be able to describe the potential dangers prevalent in restaurants and explain how accidents can be avoided through safe work habits. Handle minor accidents and explain standard emergency procedures.

B33-OD04 PREPARE FOR SERVICE
Must be able to commence shift punctually in Assiniboia Inn to arrange and set the tables, prepare all required supplies and equipment, and ensure that they are all in the designated places prior to service.

B33-OD05 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-OE01 IDENTIFY BAKING INGREDIENTS
Must be able to describe the basic bakery ingredients, indicate their characteristics, uses, function and composition.

B33-OE02 PREPARE YEAST & RAISED GOODS
Must be able to prepare a variety of fermented goods and describe the basic methods used.

B33-OE03 PREPARE A VARIETY OF PASTRIES
Must be able to describe how pastries are made and prepare a basic variety.

B33-OE04 PREPARE CAKES, SWEETS & DESSERTS
Must be able to describe the various methods used to produce and decorate a variety of sweets and desserts.

B33-OF00 DESCRIBE ELEMENTS OF COST CONTROL OF KITCHEN MANAGEMENT
Describe elements of cost control as they apply to kitchen management.

B33-OF01 CONTROL MECHANISMS/RECORD FOOD ITEMS SOLD
Name the control mechanisms commonly used & explain the recording of food items sold.

B33-OF02 EXPLAIN ELEMENTS OF PURCHASING/INVENTORY CONTROL
Explain the elements of purchasing and inventory control.

B33-OE03 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-OE04 DESCRIBE RECEIVING, STORING & ISSUING PROCEDURES
Must be able to describe the common procedures used to receive, store and issue foods.

B33-OF05 CALCULATE RECIPE COSTS, PORTION COSTS, ETC.
Calculate recipe costs, portion costs, yields and selling prices.

B33-OG01 PREPARE SANDWICHES
Must be able to explain the classification of sandwiches and the type of ingredients used. Prepare a variety of sandwiches.

B33-OG02 PREPARE SALADS & 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-OG03 PREPARE APPETIZERS
Must be able to explain the classification, the function and the preparation of appetizers.

B33-OG04 BUFFET PREPARATION & SERVICES
Must be able to describe, identify and prepare a selection of typical foods used for buffets including their presentation and service.

B33-OH00 EXPLAIN MANAGEMENT OF HUMAN RESOURCES
Explain the management of human resources in the hospitality industry.

B33-OH01 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-OH02 PERFORM JOB ANALYSIS/DESCRIPTION/SPECIFICATION
Perform a job analysis and prepare a job description and job specification.

B33-OH03 RECRUIT AND SELECT EMPLOYEES
Must be able to recruit and select employees.

B33-OH04 EXPLAIN HOTEL/RESTAURANT TRAINING & DEVELOPMENT
Explain hotel and restaurant training and development needs; methods and technology.

B33-OH05 EVALUATE EMPLOYEE PERFORMANCE
Evaluate employee performance using appropriate performance appraisal procedures.
B33-0H06 EXPLAIN FACTORS AFFECTING LABOUR COSTS
Explain the various factors that affect total labour costs and describe appropriate cost-control measures.

B33-0I01 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.

B33-0I02 DESIGN LAYOUTS OF KITCHEN EQUIPMENT
Must be able to evaluate and apply the principles of kitchen and cafeteria layout and equipment.
CHILD CARE SERVICES

PURPOSE
To develop the knowledge and skills required to provide quality child care in the community.

PROGRAM
Child Care Services 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 are expected to 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 - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with 300 or 301 courses inclusive. English 300 and Biology 300 or 301 are strongly recommended;
- Adult Basic education 11A, 11B, or 11C;
- or
B - successful completion of the prescribed reading skills test at the minimum competency level required;
- and
C - completion of the additional information sheets and submission of two letters of reference;
- and
D - an orientation session 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.

*Applicants may be required to attend an individual interview with the Selection Committee, as well as the general orientation session.

**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.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits. A specific background in English and biology, as noted in (A) above, is recommended. As well, mature students must meet entrance requirements (B) through (E) and be 20 years of age on or before September 30 in the year of registration.

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 Child Care Services program brochure.

Please note that as of October, 1991 diploma status is required for classification as a Child Care Worker Level II. 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 COMPETENCIES
Year I
Term 1
H05-C104 Personal Development (optional)
H05-C122 Integration Seminar 1
H05-C123 Practicum 1
H05-C221 Integration Seminar 2
H05-C224 Practicum 2
H05-C320 Practicum 3
H05-C322 Integration Seminar 3
H05-OA31 Explain Continuum Of Human Development
H05-OA32 Foster Development Of The Infant
H05-OA33 Foster Development Of The Toddler
H05-OA34 Foster Development Of The Preschool Child
H06-OB31 Respect Children's Culture
H06-OB32 Report Suspected Cases Of Abuse
H06-OC31 Use Basic Writing Skills
H06-OC32 Write Observation Reports
H06-OC33 Interpersonal Skills And Self-Understanding
H06-OD31 Provide Nurturing Care
H06-OD32 Act As Role Model
H06-OD33 Communicate With Children
H06-OD34 Provide Guidance And Discipline
H06-OD35 Guide Routines And Transitions
H06-OD36 Guide Children's Expression Of Emotion
H06-OD37 Foster Social Interaction And Growth
H06-0E31 Prevent Accidents
H06-0E32 Respond To Emergencies
H06-0F31 Follow Health Regulations
H06-0F32 Identify Childhood Diseases And Illness
H06-0F33 Administer Medications
H06-0G31 Identify Activity Areas And Their Components
H06-0G32 Select Equipment And Play Materials
H06-OH31 Explain The Program Development Process
H06-OJ31 Guide Play Indoors And Outdoors
H06-OJ32 Facilitate Play
H06-OK31 Set Out Steps In Planning A Curriculum
H06-OK32 Set Goals And Objectives
H06-OK33 Plan Activities
H06-OL31 Provide Art Experiences
H06-OL32 Provide Literature Activities
H06-OL33 Provide Group Time Activities
H06-OL34 Provide Music Activities
H06-OL35 Provide Drama Activities
H06-OL36 Provide Science Activities
H06-OL37 Provide Outdoor Activities
H05-OM31 Use Materials And Equipment
H06-0N31 Relate To Individual Family Situations
H05-QQ31 Explain The Child Care Profession
H06-QQ32 Demonstrate Employability Skills
**Year 2**

- **H06-C104** Personal Development (optional)
- **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
- **H06-0A35** Foster Development Of The School-Age Child
- **H06-0A36** Analyze Theories Of Development
- **H06-0B33** Support The Abused Child
- **H06-0B34** Support Children's Special Needs
- **H06-0B35** Support Children In Stressful Situations
- **H06-0B36** Advocate For Children
- **H06-0C34** Use Job Related Written Skills
- **H06-0C35** Analyze Personal Behavior
- **H06-0D38** Guide A Variety Of Children's Behavior
- **H06-0D39** Apply Behavior Management Approaches
- **H06-0D41** Evaluate Personal Interaction With Children
- **H06-0F34** Implement A Nutritious Food Program
- **H06-0F35** Consider Children's Dietary Needs
- **H06-0F36** Respond To Physical And Medical Needs
- **H06-0G33** Design A Floor Plan For A Children's Centre
- **H06-0G34** Design An Outdoor Playspace
- **H06-0H32** Assess Program As Related To Children's Needs
- **H06-0H33** Assess Factors That Influence Programs
- **H06-0H34** Adapt A Program Philosophy
- **H06-0H35** Develop A Daily Schedule
- **H06-0H36** Design Program Evaluation Procedures
- **H06-0J33** Analyze Play
- **H06-0J34** Plan For Play
- **H06-0K34** Develop A Weekly Plan
- **H06-0L36** Provide Social Studies Activities
- **H06-0L39** Provide Movement Activities
- **H06-0L41** Provide Nutrition Activities
- **H06-0L42** Provide Infant Activities
- **H06-0L43** Provide School Age Activities
- **H06-0M32** Utilize Resources
- **H06-0N32** Integrate Cultural Factors
- **H06-0N33** Respect Parent's Rights And Opinions
- **H06-0N34** Promote Parent Involvement
- **H06-0N35** Communicate With Parents
- **H06-0N36** Support The Family Unit
- **H06-0P31** Network With Support Agencies
- **H06-0P32** Communicate With School Personnel
- **H06-0Q33** Identify Operational Structure Of The Centre
- **H06-0Q34** Identify The Need For Professional Growth
- **H06-0Q35** Display Professional Behavior
- **H06-0Q36** Identify Current Professional Issues

Please note that because the competencies listed above are self-explanatory, no course descriptions are required for those skill areas. Descriptions are included only for the course numbers listed below.

**COURSE DESCRIPTIONS**

**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 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, guidance of children, 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. The unique needs of infants, school-age and special needs children, and how to plan for these needs within a children's centre, is a major focus of the seminar.

H06-C533 PRACTICUM 5
During this practicum, the student spends 1 1/2 days per week, for a period of ten 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 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.

H06-0A31 EXPLAIN CONTINUUM OF HUMAN DEVELOPMENT
This course component provides an overview of the ongoing process of human development from conception to death. Emphasis is placed on the child's developmental tasks and needs as part of a complex, life-long process.

H06-0A32 FOSTER DEVELOPMENT OF THE INFANT
This course component 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.

H06-0A33 FOSTER DEVELOPMENT OF THE TODDLER
This course component focuses on the development of children from ages 1 to 3 years. It emphasizes the developmental process and the rapid growth in physical, social, emotional and intellectual development.

H06-0A34 FOSTER DEVELOPMENT OF THE PRESCHOOL CHILD
This course component 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.

H06-0A35 FOSTER DEVELOPMENT OF THE SCHOOL-AGE CHILD
This course component focuses on the development of children from ages 6-12. 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.

H06-0A36 ANALYZE THEORIES OF DEVELOPMENT
This course component 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 course component 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 course component 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 worker's to report abuse.

H06-0B33 SUPPORT THE ABUSED CHILD
This course component 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 course component 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.

H06-0B35 SUPPORT CHILDREN IN STRESSFUL SITUATIONS
This course component 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.

H06-0B36 ADVOCATE FOR CHILDREN
This course component 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.

H06-0C31 USE BASIC WRITING SKILLS
This course component 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 course component 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 course component 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 course component 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 course component 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 ROLE MODEL
This course component 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 course component focuses on the importance of positive communication skills for child care workers. It stresses the use of positive direction when speaking with young children.

H06-0D34 PROVIDE GUIDANCE AND DISCIPLINE
This course component 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 course component focuses on the skills necessary to guide children in the routines and transitions common to most children's centres.

H06-0D36 GUIDE CHILDREN'S EXPRESSION OF EMOTION
This course component 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.

H06-0D37 FOSTER SOCIAL INTERACTION AND GROWTH
This course component 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 course component 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 course component 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 course component 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.

H06-0E31 PREVENT ACCIDENTS
This course component focuses on accident prevention in a children's centre. It stresses the knowledge, attitudes, and behavior which can reduce the potential for accidents.

H06-0E32 RESPOND TO EMERGENCIES
This course component 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 course component 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 course component 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.

H06-0F33 ADMINISTER MEDICATIONS
This course component 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.

H06-0F34 IMPLEMENT A NUTRITIOUS FOOD PROGRAM
This course component 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.

H06-0F35 CONSIDER CHILDREN'S DIETARY NEEDS
This course component 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.
H06-0F36 RESPOND TO PHYSICAL AND MEDICAL NEEDS
This course component focuses on the identification and management of the physical and medical needs of children in a children's centre.

H06-0G31 IDENTIFY ACTIVITY AREAS AND THEIR COMPONENTS
This course component 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.

H06-0G32 SELECT EQUIPMENT AND PLAY MATERIALS
This course component identifies necessary indoor and outdoor equipment and play materials and the criteria for the selection of such equipment and play materials. The suitability of handmade play materials is also analyzed.

H06-0G33 DESIGN A FLOOR PLAN FOR A CHILDREN'S CENTRE
This course component 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.

H06-0G34 DESIGN AN OUTDOOR PLAYSPACE
This course component 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.

H06-0H31 EXPLAIN THE PROGRAM DEVELOPMENT PROCESS
This course component 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.

H06-0H32 ASSESS PROGRAM AS RELATED TO CHILDREN'S NEEDS
This course component 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.

H06-0H33 ASSESS FACTORS THAT INFLUENCE PROGRAMS
This course component focuses on factors which influence children's programs. These factors may determine program design, implementation and quality.

H06-0H34 ADAPT A PROGRAM PHILOSOPHY
This course component 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 personal child care philosophy and adaptability to program philosophy.

H06-0H35 DEVELOP A DAILY SCHEDULE
This course component 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.

H06-0H36 DESIGN PROGRAM EVALUATION PROCEDURES
This course component 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, ongoing evaluation tools.

H06-0J31 GUIDE PLAY INDOORS AND OUTDOORS
This course component 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 course component 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 course component 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.

H06-0J34 PLAN FOR PLAY
This course component 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.

H06-0K31 SET OUT STEPS IN PLANNING A CURRICULUM
This course component 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 course component focuses on how to write general goals and specific objectives when planning activities for children.

H06-0K33 PLAN ACTIVITIES
This course component 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 course component 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 course component focuses on developing a cumulative long range plan for a children's centre. Emphasis is placed on building continuity and inter-relating main ideas or topics over an extended period of time.
H06-0L31 PROVIDE ART EXPERIENCES
This course component 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.

H06-0L32 PROVIDE LITERATURE ACTIVITIES
This course component 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.

H06-0L33 PROVIDE GROUP TIME ACTIVITIES
This course component 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.

H06-0L34 PROVIDE MUSIC ACTIVITIES
This course component 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.

H06-0L35 PROVIDE DRAMA ACTIVITIES
This course component 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 ACTIVITIES
This course component 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".

H06-0L37 PROVIDE OUTDOOR ACTIVITIES
This course component focuses on the importance of using the outdoor environment effectively when guiding and providing experiences for children while outdoors.

H06-0L38 PROVIDE SOCIAL STUDIES ACTIVITIES
This course component focuses on the need of 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.

H06-0L39 PROVIDE MOVEMENT ACTIVITIES
This course component 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.

H06-0L41 PROVIDE NUTRITION ACTIVITIES
This course component 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.

H06-0L42 PROVIDE INFANT ACTIVITIES
This course component focuses on adapting and planning activities that would be developmentally appropriate when working specifically with infants.

H06-0L43 PROVIDE SCHOOL AGE ACTIVITIES
This course component focuses on adapting and planning activities that would be developmentally appropriate when working specifically with school age children, 6-12 years.

H06-0M31 USE MATERIALS AND EQUIPMENT
This course component 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 course component 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 course component provides an overview of family theory and focuses on the many facets of family life. Emphasis is placed on the child care workers role in relating to and supporting individual families in the children's centre.

H06-0N32 INTEGRATE CULTURAL FACTORS
This course component focuses on the importance of considering cultural factors when interacting with children and families. It focuses on working with native, immigrant, and refugee families.

H06-0N33 RESPECT PARENT'S RIGHTS AND OPINIONS
This course component reinforces the philosophical context that the primary relationship in the child'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 parent's rights and opinions.

H06-0N34 PROMOTE PARENT INVOLVEMENT
This course component 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 course component 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 course component 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 course component 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.

**H06-0P32 COMMUNICATE WITH SCHOOL PERSONNEL**
This course component 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.

**H06-0Q31 EXPLAIN THE CHILD CARE PROFESSION**
This course component identifies career options and
educational requirements for child care workers. It also focuses
on the types of child care available in Manitoba as well as the
evolution of the present child care system.

**H06-0Q32 DEMONSTRATE EMPLOYABILITY SKILLS**
This course component 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.

**H06-0Q33 IDENTIFY OPERATIONAL STRUCTURE OF THE CENTRE**
This course component 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.

**H06-0Q34 IDENTIFY THE NEED FOR PROFESSIONAL GROWTH**
This course component 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.

**H06-0Q35 DISPLAY PROFESSIONAL BEHAVIOR**
This course component 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.

**H06-0Q36 IDENTIFY CURRENT PROFESSIONAL ISSUES**
This course component focuses on current professional issues
in childcare. It examines the ethics, practices and implications
of various current issues as they relate to child care workers.
CHILD CARE SERVICES INTEGRATED

PURPOSE
To develop the knowledge and skills required to provide quality child care in the community.

PROGRAM
Child Care Services Integrated is a three-year diploma program with a September entry date. This integrated program is designed for applicants who do not meet the entrance requirements for the two-year Child Care Services program. It integrates required academic courses to bring the student to an Adult 12 level with the two-year diploma program. The modified pace allows additional time for meeting individual needs.

The goals of the program are to prepare students to support children and families in group care settings. Graduates are equipped with the knowledge and skills to effectively support children and families in group care settings. Graduates are competent in planning 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 - 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with 100 or 101 courses inclusive; or
- Adult Basic Education 7-10 program completion, with supplementary communications modules; and
B - satisfactory results on a written test, administered by the college, which surveys basic skills in reading and mathematics; and
C - completion of the additional information sheets; and
D - a personal interview with 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.

Mature Student Admission. Mature students may submit G.E.D. standing (scores on each of the five tests must be 41 or higher) in lieu of 7 credits. Successful completion of English 100, 101, 190, or Adult English I and II is recommended as appropriate additional preparation. Mature students must also meet entrance requirements (B) through (E) and be 20 years of age or before September 30 in the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

**Applicants may be required to submit medical certificates (including dental and chest x-ray) verifying general good health and freedom from communicable disease.

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 Child Care Services Integrated program brochure.

Please note that as of October, 1991, diploma status is required for classification as a Child Care Worker Level II. 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 COMPETENCIES

Year 1
H06-C104 Personal Development
H06-D106 Writing Skills I
H06-D107 Speaking Skills I
H06-D108 Reading And Study Skills I
H06-D109 Reading And Study Skills I
H06-D206 Writing Skills II
H06-D208 Reading And Study Skills II
H06-D306 Writing Skills III
H06-OA31 Explain Continuum Of Human Development
H06-OA32 Foster Development Of The Infant
H06-OA33 Foster Development Of The Toddler
H06-OA34 Foster Development Of The Preschool Child
H06-OB31 Respect Children's Culture
H06-OC32 Write Observation Reports
H06-OD31 Provide Nurturing Care
H06-OD31 Prevent Accidents
H06-OD32 Respond To Emergencies
H06-OF31 Follow Health Regulations
H06-OF32 Identify Childhood Diseases And Illness
H06-OF33 Administer Medications
H06-OG31 Identify Activity Areas And Their Components
H06-OH31 Relate To Individual Family Situations
H06-OK31 Explain The Child Care Profession

Year 2
H06-C104 Personal Development (optional)
H06-C122 Integration Seminar 1
H06-C123 Practicum I
H06-C221 Integration Seminar 2
H06-C224 Practicum 2
H06-C320 Practicum 3
H06-C322 Integration Seminar 3
H06-OB32 Report Suspected Cases Of Abuse
H06-OC31 Use Basic Writing Skills
H06-OC33 Interpersonal Skills And Self-Understanding
H06-OD32 Act As Role Model
H06-OD33 Communicate With Children
H06-OD34 Provide Guidance And Discipline
H06-OD35 Guide Routines And Transitions

B - 53
H06-D36 Guide Children's Expression Of Emotion
H06-D37 Foster Social Interaction And Growth
H06-Q32 Select Equipment And Play Materials
H06-H31 Explain The Program Development Process
H06-Q31 Guide Play Indoors And Outdoors
H06-Q32 Facilitate Play
H06-K31 Set Out Steps In Planning A Curriculum
H06-K32 Set Goals And Objectives
H06-K33 Plan Activities
H06-L31 Provide Art Experiences
H06-L32 Provide Literature Activities
H06-L33 Provide Group Time Activities
H06-L34 Provide Music Activities
H06-L35 Provide Drama Activities
H06-L36 Provide Science Activities
H06-L37 Provide Outdoor Activities
H06-M31 Use Materials And Equipment
H06-Q32 Demonstrate Employability Skills

Year 3
H06-C43 Practicum 4
H06-C44 Integration Seminar 4
H06-C45 Integration Seminar 5
H06-C46 Practicum 5
H06-C47 Integration Seminar 6
H06-C48 Practicum 6
H06-A35 Foster Development Of The School-Age Child
H06-A36 Analyze Theories Of Development
H06-B33 Support The Abused Child
H06-B34 Support Children's Special Needs
H06-B35 Support Children In Stressful Situations
H06-B36 Advocate For Children
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-F34 Implement A Nutritious Food Program
H06-F35 Consider Children's Dietary Needs
H06-F36 Respond To Physical And Medical Needs
H06-G33 Design A Floor Plan For A Children's Centre
H06-G34 Design An Outdoor Playspace
H06-H32 Assess Program As Related To Children's Needs
H06-H33 Assess Factors That Influence Programs
H06-H34 Adapt A Program Philosophy
H06-H35 Develop A Daily Schedule
H06-H36 Design Program Evaluation Procedures
H06-J33 Analyze Play
H06-J34 Plan For Play
H06-K34 Develop A Weekly Plan
H06-K35 Develop A Long Range Plan
H06-L38 Provide Social Studies Activities
H06-L39 Provide Movement Activities
H06-L41 Provide Nutrition Activities
H06-L42 Provide Infant Activities
H06-L43 Provide School Age Activities
H06-M32 Utilize Resources
H06-N32 Integrate Cultural Factors
H06-N33 Respect Parent's Rights And Opinions
H06-N34 Promote Parent Involvement
H06-N35 Communicate With Parents

H06-N36 Support The Family Unit
H06-P31 Network With Support Agencies
H06-P32 Communicate With School Personnel
H06-Q33 Identify Operational Structure Of The Centre
H06-Q34 Identify The Need For Professional Growth
H06-Q35 Display Professional Behavior
H06-Q36 Identify Current Professional Issues

Please note that because the competencies listed above are self-explanatory, no course descriptions are included for those skill areas.

For course descriptions common to both Child Care Services and Child Care Services Integrated, please see Child Care Services Course Descriptions, pages 94–95. The course descriptions applicable to the integrated program only are listed below.

**COURSE DESCRIPTIONS**

**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 theory which they have learned to date with their own experiences in a preschool centre. Various group process strategies such as role-plays, 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, guidance of children, 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. The unique needs of infants, school age and special needs children, and how to plan for these needs within a children's centre, is a major focus of the seminar.

H06-C533 PRACTICUM 5
During this practicum, the student spends 1 1/2 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 I
This course begins with a thorough review of basic grammar: subjects and verbs; phrases and clauses; co-ordination 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 I
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 I
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 I
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-D206 WRITING SKILLS II
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 II
This course is a continuation of reading and study skills H06-D108.

H06-D306 WRITING SKILLS III
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.

H06-0A31 EXPLAIN CONTINUUM OF HUMAN DEVELOPMENT
This course component provides an overview of the ongoing process of human development from conception to death. Emphasis is placed on the child's developmental tasks and needs as part of a complex, life-long process.

H06-0A32 FOSTER DEVELOPMENT OF THE INFANT
This course component 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.

H06-0A33 FOSTER DEVELOPMENT OF THE TODDLER
This course component focuses on the development of children from ages 1 to 3 years. It emphasizes the developmental process and the rapid growth in physical, social, emotional and intellectual development.

H06-0A34 FOSTER DEVELOPMENT OF THE PRESCHOOL CHILD
This course component focuses on the development of children
from ages 4 to 6 years. It stresses the new and unique developmental changes as well as the skills they continue to practice.

H06-0A35 FOSTER DEVELOPMENT OF THE SCHOOL-AGE CHILD
This course component focuses on the development of children from ages 6 to 12. 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.

H06-0A36 ANALYZE THEORIES OF DEVELOPMENT
This course component 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 course component 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 course component 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 worker's to report abuse.

H06-0B33 SUPPORT THE ABUSED CHILD
This course component 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 course component 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 workers role to encourage an "inclusive" attitude and environment.

H06-0B35 SUPPORT CHILDREN IN STRESSFUL SITUATIONS
This course component 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.

H06-0B36 ADVOCATE FOR CHILDREN
This course component 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.

H06-0C31 USE BASIC WRITING SKILLS
This course component 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 course component 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 course component 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 course component 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 course component 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 ROLE MODEL
This course component 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 course component focuses on the importance of positive communication skills for child care workers. It stresses the use of positive direction when speaking with young children.

H06-0D34 PROVIDE GUIDANCE AND DISCIPLINE
This course component 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 course component focuses on the skills necessary to guide children in the routines and transitions common to most children's centres.

H06-0D36 GUIDE CHILDREN'S EXPRESSION OF EMOTION
This course component 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.

H06-0D37 FOSTER SOCIAL INTERACTION AND GROWTH
This course component 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 course component 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 course component 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 course component 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.

**H06-0E31 PREVENT ACCIDENTS**
This course component focuses on accident prevention in a children's centre. It stresses the knowledge, attitudes and behavior which can reduce the potential for accidents.

**H06-0E32 RESPOND TO EMERGENCIES**
This course component 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 course component 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 course component 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.

**H06-0F33 ADMINISTER MEDICATIONS**
This course component 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.

**H06-0F34 IMPLEMENT A NUTRITIOUS FOOD PROGRAM**
This course component 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.

**H06-0F35 CONSIDER CHILDREN'S DIETARY NEEDS**
This course component 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.

**H06-0F35 RESPOND TO PHYSICAL AND MEDICAL NEEDS**
This course component focuses on the identification and management of the physical and medical needs of children in a children's centre.

**H06-0G31 IDENTIFY ACTIVITY AREAS AND THEIR COMPONENTS**
This course component 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.

**H06-0G32 SELECT EQUIPMENT AND PLAY MATERIALS**
This course component identifies necessary indoor and outdoor equipment and play materials and the criteria for the selection of such equipment and play materials. The suitability of handmade play materials is also analyzed.

**H06-0G33 DESIGN A FLOOR PLAN FOR A CHILDREN'S CENTRE**
This course component 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.

**H06-0G34 DESIGN AN OUTDOOR PLAYSPACE**
This course component 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.

**H06-0H31 EXPLAIN THE PROGRAM DEVELOPMENT PROCESS**
This course component 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.

**H06-0H32 ASSESS PROGRAM AS RELATED TO CHILDREN'S NEEDS**
This course component 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.

**H06-0H33 ASSESS FACTORS THAT INFLUENCE PROGRAMS**
This course component focuses on factors which influence children's programs. These factors may determine program design, implementation and quality.

**H06-0H34 ADAPT A PROGRAM PHILOSOPHY**
This course component 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 personal child care philosophy and adaptability to program philosophy.

**H06-0H35 DEVELOP A DAILY SCHEDULE**
This course component 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.

**H06-0H36 DESIGN PROGRAM EVALUATION**

**PROCEDURES**

This course component 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.

**H06-0J31 GUIDE PLAY INDOORS AND OUTDOORS**

This course component 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 course component 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 course component 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.

**H06-0J34 PLAN FOR PLAY**

This course component 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.

**H06-0K31 SET OUT STEPS IN PLANNING A CURRICULUM**

This course component 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 course component focuses on how to write general goals and specific objectives when planning activities for children.

**H06-0K33 PLAN ACTIVITIES**

This course component 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 course component 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 course component 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.

**H06-0L31 PROVIDE ART EXPERIENCES**

This course component 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.

**H06-0L32 PROVIDE LITERATURE ACTIVITIES**

This course component 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.

**H06-0L33 PROVIDE GROUP TIME ACTIVITIES**

This course component 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.

**H06-0L34 PROVIDE MUSIC ACTIVITIES**

This course component 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.

**H06-0L35 PROVIDE DRAMA ACTIVITIES**

This course component 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 ACTIVITIES**

This course component 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".

**H06-0L37 PROVIDE SOCIAL STUDIES ACTIVITIES**

This course component focuses on the need of children to learn about themselves and their relationship to the people and the world around them. It stresses the importance of child care workers focusing on appropriate social studies concepts and providing related activities.

**H06-0L38 PROVIDE MOVEMENT ACTIVITIES**

This course component 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.

**H06-0L39 PROVIDE NUTRITION ACTIVITIES**

This course component 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.
H06-0L42 PROVIDE INFANT ACTIVITIES
This course component focuses on adapting and planning activities that would be developmentally appropriate when working specifically with infants.

H06-0L43 PROVIDE SCHOOL AGE ACTIVITIES
This course component focuses on adapting and planning activities that would be developmentally appropriate when working specifically with school age children, 6 to 12 years.

H06-0M31 USE MATERIALS AND EQUIPMENT
This course component 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 course component 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 course component 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.

H06-0N32 INTEGRATE CULTURAL FACTORS
This course component focuses on the importance of considering cultural factors when interacting with children and families. It focuses on working with native, immigrant and refugee families.

H06-0N33 RESPECT PARENT'S RIGHTS AND OPINIONS
This course component reinforces the philosophical context that the primary relationship in the child'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 parent's rights and opinions.

H06-0N34 PROMOTE PARENT INVOLVEMENT
This course component 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 course component 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 course component 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 course component 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.

H06-0P32 COMMUNICATE WITH SCHOOL PERSONNEL
This course component 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.

H06-0Q31 EXPLAIN THE CHILD CARE PROFESSION
This course component identifies career options and educational requirements for child care workers. It also focuses on the types of child care available in Manitoba as well as the evolution of the present child care system.

H06-0Q32 DEMONSTRATE EMPLOYABILITY SKILLS
This course component 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.

H06-0Q33 IDENTIFY OPERATIONAL STRUCTURE OF THE CENTRE
This course component 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.

H06-0Q34 IDENTIFY THE NEED FOR PROFESSIONAL GROWTH
This course component 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.

H06-0Q35 DISPLAY PROFESSIONAL BEHAVIOR
This course component 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.

H06-0Q36 IDENTIFY CURRENT PROFESSIONAL ISSUES
This course component 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.
CIVIL ENGINEERING TECHNOLOGY

PURPOSE
To develop the knowledge and skills required for roadway and municipal-services design and construction, soil mechanics and materials testing and hydraulics.

PROGRAM
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.

Co-operative Education (Co-op Ed) at Red River Community College integrates related on-the-job experience with classroom theory by alternating terms of paid employment and academic study. The college offers Co-operative Education as part of its education strategy. Through this mode of delivery, today's Co-operative Education students have a greater opportunity to become tomorrow's leaders in the engineering field.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Science 301;
- Adult Basic Education Pre-Technology (Adult 12) program completion

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

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or GED. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science as outlined above. Mature students must also 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 Admissions/Registration for review.

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.

COURSE OUTLINE

Term 1
CIV-C162 Engineering Graphics I
CIV-C165 Mechanics I
CIV-C166 Surveying I
CIV-M163 Introduction To Application Software
CIV-M169 Mathematics
CIV-R167 Communications

Term 2
CIV-C262 Engineering Graphics II
CIV-C263 Computer Assisted Drafting I
CIV-C266 Surveying II
CIV-M260 Introductory Calculus I
CIV-R269 Specifications & Reports

Term 3
CIV-W100 Co-operative Work Placement I

Term 4
CIV-C361 Strength of Materials
CIV-C363 Computer Assisted Drafting II
CIV-C364 Engineering Economics
CIV-C365 Mechanics II
CIV-C366 Surveying III
CIV-M360 Calculus II

Term 5
CIV-C461 Photogrammetry
CIV-C462 Roadway Design I
CIV-C468 Soil Mechanics I
CIV-C469 Hydraulics
CIV-M460 Calculus III

Term 6
CIV-W200 Co-operative Work Placement II

Term 7
CIV-C562 Roadway Design II
CIV-C564 Water Supply & Waste Disposal I
CIV-C567 Pavement Mix Design I
CIV-C568 Soil Mechanics II
CIV-C569 Hydrology

Term 8
CIV-C661 Terrain Classification
CIV-C664 Water Supply & Waste Disposal II
CIV-C665 Job Control & Estimating
CIV-C667 Pavement Mix Design II
CIV-C668 Stabilization

COURSE DESCRIPTIONS

CIV-C162 ENGINEERING GRAPHICS I
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 drafting instruments, the interpretation of simple drawings and sketches 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-C165 MECHANICS I
This course includes the following topics:
1) Basic Principles
2) Resultant of Force Systems
3) Equilibrium of Force Systems
4) Centroid of Areas
5) Moment of Inertia.

CIV-C166 SURVEYING I
This course consists of the theory and use of survey measuring instruments, the steel tape, engineer's level and transit and the basic techniques in the use of these instruments.

CIV-C262 ENGINEERING GRAPHICS II
This course is a continuation of CIV-C162 Engineering Graphics, wherein the student's drafting skills and knowledge...
CIV-C263 COMPUTER ASSISTED DRAFTING I
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 industry, changing the methods used to produce drawings. This course provides an introduction to Autocad on IBM compatible computers. The basics of setting up two dimensional drawings, drawing and editing objects, text styles and fonts, dimensioning, blocks and block inserts will be covered.

CIV-C266 SURVEYING II
This course consists of traverses and calculations pertaining thereto: systems of township layout and monumentation; the determination of areas and volumes of earthwork and field procedures.

CIV-C363 COMPUTER ASSISTED DRAFTING II
The emphasis of this course will be the production of civil engineering drawings using Autocad on IBM compatible computer systems. Topics within this framework will include the setup of prototype drawings and associated system variables, layer management, advanced drawing and editing techniques, attributes, 3D drawing and surface mapping.

CIV-C361 STRENGTH OF MATERIALS
The first part of the course deals with problems relating to support and pin reactions in frames and trusses. The second part deals with stress and deformation of materials. CIV-C165 is a prerequisite and CIV-C365 is a corequisite.

CIV-C364 ENGINEERING ECONOMICS
This course is a study of interest, or a study of the time value of money on a personal level and in the daily operations of the business/industrial scene. This course describes what is interest, how it is calculated, how it is applied and how it is used in decision-making. This course will give the student a better perspective of what is involved when people have to make choices in the expenditure of funds, whether it be for the office or out in the field.

CIV-C365 MECHANICS II
This course deals with fluid statics, the stability of gravity and retaining walls, and graphical static solutions to simple frames.

CIV-C366 SURVEYING III
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: construction survey procedures.

CIV-C461 PHOTOGRAMMETRY
This course consists of theory and practical work in: a) the relationships of angles and distances on aerial photographs to angles and distances on the ground, b) flight planning, for aerial photographic missions, c) planimetric mapping of aerial photographs, d) area determination on aerial photographs by the dot grid method, e) the theory and use of parallax measurement.

CIV-C462 ROADWAY DESIGN I
This course consists of the design of simple, compound and reverse curves and spiral curves for various design speeds and sight distances, design of vertical curves to provide stopping sight distance and passing sight distance, design of superelevation for horizontal curves safety features of roadway design and surveys required for roadway design. All design is to standards set by the Roads and Transportation Association of Canada.

CIV-C463 SOIL MECHANICS I
This course consists of the definition and description of basic soil types and structures, soil sampling and sample preparation for testing, determination of Atterberg consistency limits, grain size analysis, soil classification by means of visual identification, triangular charts, AASHTO method and Unified method, computation of volume and weight relationships of soil water mixtures and the computation of density moisture relationship for field control of compactions operations.

CIV-C465 HYDRAULICS
This course gives the student the background to solve problems in fluid statics, closed - conduct flow, and open channel flow.

CIV-C562 ROADWAY DESIGN II
This course involves the calculation for roadway design, preparation of cross-sections, profiles, mass diagram and location plans required for construction, construction methods for earthwork and rock, placing and compaction of fills, construction equipment used, surveys required for construction, quality control for earth-grade construction and pavement thickness design.

CIV-C564 WATER SUPPLY & WASTE DISPOSAL I
This course involves the gathering of information for the design and preparation of detailed plans for the construction of storm and sanitary collection system and of water distribution system. Also includes the fundamentals of water and sewage treatment.

CIV-C566 PAVEMENT MIX DESIGN I
This course involves a study of manufacture of Portland Cement, the five basic types of Portland Cement, evaluation of aggregates, properties of concrete, mixing waters, additives and the purpose of their usage in concretes, mixing, placing, compaction and curing of Portland Cement concrete, construction and inspection procedures for Portland Cement concrete pavements.

CIV-C568 SOIL MECHANICS II
This course consists of the definition and computation of the coefficient of hydraulic conductivity of soil and the test method best suited to each soil type, description of frost action in soils and the prevention of frost damage, interpret consolidation test results to determine load-settlement relationships, and to determination of the shearing resistance and strength of soil.

CIV-C569 HYDROLOGY
This course gives a student the background to solve problems in the design and operation of an engineering project for the control and use of water.
CIV-C661 TERRAIN CLASSIFICATION
This course involves (1) a review of elementary geology and geomorphology on the formation of landforms identifiable on aerial photographs with particular reference to the Canadian landscape and (2) a study of aerial photographs containing these landforms. From the theory and study the student will be required to identify the various landforms, the method of deposition or formation of the landforms, the type of soil or granular material in the landform and surface and possible sub-surface moisture conditions, permeability and permafrost conditions.

CIV-C664 WATER SUPPLY & WASTE DISP. II
This course involves the gathering of information for the design and preparation of detailed plans for the construction of storm and sanitary collection system and of water distribution system. Also include the fundamentals of water and sewage treatment.

CIV-C666 JOB CONTROL & ESTIMATING
Job Control 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. Estimating consists of the pricing of material, labour & indirect costs to determine the final cost of a Municipal Project.

CIV-C667 PAVEMENT MIX DESIGN II
This course consists of the study of asphalt cement and the testing required to determine its suitability as a paving asphalt, evaluation of aggregates for use in asphaltic concrete, design of hot mix asphalt concrete paving mixes using the surface area method and the Marshall Method, construction techniques, construction equipment and inspection procedures for asphalt concrete pavements.

CIV-C668 STABILIZATION
Course includes the following topics: -reasons for soil stabilization -lime stabilization -soil cement -asphalt stabilization -mechanical stabilization -geotechnical fabrics

CIV-M163 INTRODUCTION TO APPLICATION SOFTWARE
Through hands-on experience, this course provides an introduction to MS-DOS commands, WordPerfect word-processing, SuperCalc3 spreadsheet work, and DBASE III Plus data base manipulation. The course setting is in a net-worked IBM-PC lab.

CIV-M169 MATHEMATICS
The course is basically a review of high school mathematics with emphasis being on trigonometry, solution of algebraic equations, exponents, and logarithms.

CIV-M260 INTRODUCTORY CALCULUS I
Explicit and implicit functions of a single variable; limits and derivative concept; differentiation of algebraic functions, trigonometric functions, inverse trigonometric functions, exponential and logarithmic functions; logarithmic differentiation, applications of the derivative, i.e. Tangent and normal lines, related rates, curve sketching, minimum, maximum and inflection points, introduction to integration.

CIV-M360 CALCULUS II
Integration methods and techniques using the power formula, logarithmic and exponential form, trigonometric and inverse trigonometric form, parts, and trigonometric substitution; application of definite integral i.e. area, volume, centroids, moment of inertia, forces.

CIV-M460 CALCULUS III
Advanced applications of the derivative and integral i.e. maxima/minima, arc length, surface area, theorem of pappus; series expansion of functions, and application; differential equations, solution and application; partial derivatives and application; curves and surfaces in space, multiple integrals as applied to area, and volume.

CIV-R167 COMMUNICATIONS
The course covers the organizing and writing of letters, memorandums, and reports on technical courses.

CIV-R269 SPECIFICATIONS AND REPORTS
The report writing part of this course helps the student to 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. Secondly, the student is introduced to construction specifications, and studies divisions 0 and 1 of the National Master specification.
COLLEGE PREPARATION FOR NATIVE STUDENTS

PURPOSE
To assist native students in the development of mathematics, science, communication and assertiveness skills.

PROGRAM
College Preparation for Native Students is a 10 month (or less) program with a September entry date. The program is designed to assist students to develop mathematics, communication and assertiveness skills to pursue further education or training.

ENTRANCE REQUIREMENTS
Successful completion of a reading-skills test with an appropriate score.

EMPLOYMENT POTENTIAL
Former students who have been successful have found that they are more confident and better prepared for skill training at the college.

PROGRAM OUTLINE
S02-A005 Personal & Professional Development Skills
S02-C100 Writing Skills
S02-C111 Reading Skills
S02-C112 Spelling Core
S02-C113 Spelling - Supplement
S02-C120 Computer Awareness Training Core
S02-M108 Mathematics Core
S02-M109 Mathematics - Supplement
S02-S100 Science Core
S02-S113 Science - Supplement
S03-K001 Communications
S03-L001 Mathematics
S03-M001 Science (Physics)
S03-R002 Mathematics 301

COURSE DESCRIPTIONS
S02-A005 WRITING SKILLS
The following skills will be taught through language development, public speaking, working in groups, leadership skills, building self-esteem, career planning, self motivation skills and problem solving.

S02-C100 WRITING SKILLS
Sentence and paragraph construction; expository paragraph writing; usage and mechanics; punctuation and capitalization.

S02-C111 READING SKILLS
Reading speed and comprehension development; vocabulary development; study skills.

S02-C112 SPELLING CORE
Lesson 1 - 14 consist of a list of commonly used and commonly misspelled words in the English language; rules to assist in developing spelling skills.

S02-C113 SPELLING - SUPPLEMENT
Lessons 15 - 22 consist of a review and elaboration of the first 14 spelling lessons; review of spelling rules.

S02-C120 COMPUTER AWARENESS TRAINING CORE
An introduction to the use and knowledge of computers.

S02-M108 MATHEMATICS CORE
Development of problem solving skills using whole numbers, fractions, decimals and percent, ratio and proportion; and measurements.

S02-M109 MATHEMATICS - SUPPLEMENT
Positive and negative numbers; square root; introductory algebra and geometry; and solving problems algebraically.

S02-S100 SCIENCE CORE
Scientific method; metric measurements.

S02-S113 SCIENCE - SUPPLEMENT
Temperature; heat; pressure; density; work; electricity; anatomy and physiology; problem solving.

S03-K001 COMMUNICATIONS
Writing Skills: development of writing, grammar, writing of paragraphs. Reading Skills: speed and comprehension, vocabulary development.

S03-L001 MATHEMATICS
Exponents and Scientific notation; fundamental operations of directed number, fundamental operations of algebra; equations with an unknown; special products and factoring; algebraic fractions; equations; graphic methods; simultaneous equations; trigonometry.

S03-M001 SCIENCE (PHYSICS)
Matter and energy, force measurement, motion, atomic structure, energy and machines, etc.

S03-R002 MATHEMATICS 301
Equations, factoring, exponents, quadratics, solving simultaneous equations and formula manipulation, mensurational and analytic geometry, trigonometry and logarithms.
COLLEGE PREPARATION FOR NURSING

PURPOSE
To acquire the academic skills needed to enter Nursing programs.

PROGRAM
College Preparation for Nursing is a 10 month certificate program with a September 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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation);
- Adult Basic Education 7-10 program completion; and
- completion of the additional information sheets; and
- successful completion of the Level Placement tests for entry-level competencies in mathematics and reading skills; and
- a personal interview with the Selection Committee.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 45 or higher), in lieu of 7 credits. (However, formal credit in mathematics, English and science at the 100, 101, 190, or 911 level is recommended.) Mature student applicants must also meet other requirements as outlined above.

PROGRAM OUTLINE
H11-N120 Human Anatomy And Physiology
H11-S101 Social Science
H11-S201 Social Science
H11-S301 Social Science (3)
S02-C116 Reading & Study Skills (Part-Time)
S03-M003 Science (Biology)
S03-R001 Mathematics 301
S03-S001 Science (Physics) 300
S03-S002 Science (Chemistry) 300
S03-U101 Communications

COURSE DESCRIPTIONS
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-S101 SOCIAL SCIENCE
This subject 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
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.

H11-S301 SOCIAL SCIENCE
This is a continuation of the format utilized in Part II 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.

S02-C116 READING & 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.

S03-M003 SCIENCE (BIOLOGY)
Biology

S03-R001 MATHEMATICS 301
Equations, factoring, exponents, quadratics, solving simultaneous equations and formula manipulation, mensurational and analytic geometry, trigonometry and logarithms.

S03-S001 SCIENCE (PHYSICS) 300
Introduction to chemistry; atomic structure and periodic table; chemical composition and reaction; acids; bases; salts; solutions; organic chemistry.

S03-S002 SCIENCE (CHEMISTRY) 300
Kinetic theory; vectors electro-magnetism; radioactivity and electro-magnetism; universal gravitation.

S03-U101 COMMUNICATIONS
Writing development; spelling development; review of grammar and English usage; sentence construction; writing of paragraphs. Reading development; speed and comprehension; vocabulary development.
PURPOSE
To develop the skills and knowledge required to repair damaged vehicles, including all phases of autobody 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 aspects of metal working and spray painting.

ENTRANCE REQUIREMENTS
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended;
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also be 20 years of age or before September 30 in the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Many graduates have found employment as auto-body 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
T01-A025 Safety
T01-A026 Welding
T01-A027 Hand Tools, Power Tools and Hydraulics
T01-A028 Basic Metal Working
T01-A029 Refinishing
T01-A030 Vehicle Construction - Panel Replacement
T01-A031 Advanced Metal Working & Rust Repair
T01-A032 Frame & Estimating
T01-A033 Major Body & Component Alignment
T01-A034 Hardware, Glass & Trim
T13-M001 Related Maths
T13-S001 Related Science
T14-C001 Communication

COURSE DESCRIPTIONS
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-A027 HAND TOOLS, POWER TOOLS & HYDRAULICS
Students will be able to identify, select, use and maintain hand, power and hydraulic tools required for the repair of motor mechanisms.

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-A029 REFINISHING
Students will be instructed in basic paint preparation systems, products, equipment and application procedures.

T01-A030 VEHICLE CONSTRUCTION - PANEL REPLACEMENT
Students will be able to remove and replace major structural, functional and non-functional parts. Also, students will become familiar as to the different types of body and frame design and construction.

T01-A031 HAND TOOLS, POWER TOOLS & HYDRAULICS
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 & 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 & COMPONENT ALIGNMENT
Students will be instructed in identifying different types of body opening, and/or body panel misalignments and methods of adjusting to obtain proper alignment.

T01-A034 HARDWARE, GLASS & TRIM
This segment involves instruction in replacement of all automobile glass as well as procedures of removing and replacing door components and interior trim.

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-S001 RELATED SCIENCE
In this course, the students are taught the basics of automotive electricity, effects of heat on metal and their properties, hydraulics colour and how these apply to the trade.

T14-C001 COMMUNICATION
The intent of this course of instruction 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.
PURPOSE
To develop the knowledge and personal-selling skills required for the identification and solution of sales problems.

PROGRAM
Commerce/Industry Sales & 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 Term I and II for progression to subsequent terms. Students who pass all courses in Term I but are not continuing to Term II are eligible for a Basic Business Certificate. Similarly, a pass in all Term II courses earns a Basic Sales Certificate for students not entering Term III. Graduates of the complete 10 month program receive a Commercial & Industrial Sales Certificate.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with English 300 or 301 and Mathematics 200 or 201; or
- Adult Basic Education 11B;

Mature Student Admission. Mature student applicants may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have successfully completed one of English 300 or 301 and one of Mathematics 200, 201, 290, or 911, at a minimum. 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Some graduates have found employment with engineering companies, pharmaceutical houses, manufacturers of industrial equipment and suppliers of raw materials. Other graduates are selling and appraising real estate, selling office equipment, working in large retail stores at the merchandising level, and working in newspaper circulation departments.

PROGRAM OUTLINE
Term 1
B13-S508 Human Behavior For Salesmen
B14-C114 Basic Marketing And Customer Behavior
B14-T117 Introduction To Business
B14-M161 Business & 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 Salesmanship
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 Salesmanship
B14-T318 "In Business" Sales Training
B15-S309 Computer Literacy 2

COURSE DESCRIPTIONS
B12-E292 ECONOMICS
This introductory course is concerned with Canada's economic problems and their solutions. The emphasis is on providing a sound basis in economic principles which are then applied in the form of economic reasoning. In addition to supply, demand, elasticity and firms in various types of competition (micro section), the following macro topics are also covered: national income, taxation, monetary and fiscal policy and international trade.

B13-S508 HUMAN BEHAVIOR FOR SALESMEN
See B13-S107

B13-S509 PSYCHOLOGY OF SELLING (C&I)
This course will provide the prospective salesman with systematic insight into customer behavior. It will teach the student how to gain flexibility so as to sell all kinds of customers; how to use persuasive communication strategies to create customer commitment; how to uncover customers' needs and prove customer benefits by showing that your products or service will satisfy those needs; how to motivate customers so as to close sales and get repeat business.

B14-C114 BASIC MARKETING AND CUSTOMER BEHAVIOR
An introductory course into the complexity of human behavior, particularly as it applies to buying behavior on the part of the final consumers. Material for the course is drawn from the social sciences - psychology, sociology, social psychology and economics. The insight provided leads to a better understanding of consumer behavior in the marketplace, a vital element in the external environment of a business system.

B14-D300 MARKETING DECISION SIMULATION
Marketing Decision Simulation provides the student with an opportunity to apply his learned marketing skills in a dynamic and competitive simulated marketing situation. As a company marketing executive in a simulated business environment, the student makes marketing decisions as a member of a team. This effects work with other members of the firm which is competing with other companies in an industry.

B14-T117 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 courses are concerned with. Part one
are developed for skill practice. The theory involved includes basics skills are studied and discussed and role plan situations are developed for skill practice. The theory involved includes continual development of all four skills throughout the term.

**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 C/I 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-M161 BUSINESS AND FINANCIAL MATHEMATICS**
This subject 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, markup, markon, and markdown. 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-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 as 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 T218 where the business game focuses on marketing strategies in a competitive environment.

**B14-P319 ADVERTISING AND PROMOTION**
This course provides a comprehensive study of the purposes, types, creation and control of advertising and other promotions. It develops an understanding of the important elements of advertising and other promotion tools and their relation to marketing. As a practical project students organize in teams to develop and present a complete promotion package in a competitive situation.

**B14-R312 MERCHANDISING**
A study of merchandising methods and retail organization, retail planning and policies, retail organization, pricing strategy, mark up and mark down calculation, planning sales, stock, purchases and profits, retail budgeting and control, retail advertising, display, store layout and site selection. As a practical application of theory, students organize into management teams to develop a proposal for a retail operation in a selected location.

**B14-S211 BASIC SALESMANSHIP**
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 plan situations are developed for skill practice. The theory involved includes review of a variety of elements that are important to selling, consumer behavior, pricing and credit practices, knowledge of company and competitors, product knowledge, promotional aids and telephone selling.

**B14-S311 ADVANCED SALESMANSHIP**
This course builds on the foundation of S211 in the second term. 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-T118 "IN BUSINESS" TRAINING**
No description available.

**B14-T218 ADVANCED "IN BUSINESS" TRAINING**
This course provides more exposure to the business world and its problems. In addition to tours and speakers, the student works one week in the field with a sponsoring company, also he deals with business problems through simulation as he participates, as a member of a business team, in a competitive business game throughout the term. The student is identifying potential areas for future sales careers.

**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 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. Additional knowledge and skills are developed through the simulation techniques in a more advanced competitive business game, conducted in coordination with the marketing course.

**B15-S209 COMPUTER LITERACY 1**
Computer Literacy 1 has been designed to meet the needs of students wishing to become comfortable with computer terminology and functions and to become familiar with using the IBM PC. To achieve this goal, Computer Literacy deals with the evolution of computers, computer hardware, and telecommunications, in addition to the introduction of the use of a word processing software package on the IBM PC.

**B15-S309 COMPUTER LITERACY 2**
Computer Literacy 2 has been designed to meet the needs of students wishing to become aware of the types of computer software in addition to becoming familiar with spreadsheets on the IBM PC.

**B16-E123 SALES COMMUNICATIONS**
The objective is to develop the potential salesperson's communication skills. These skills are speaking, listening, reading, and writing. The environment for the development of these skills is a marketing/sales setting. The course aims at continual development of all four skills throughout the term.
B16-E202 ADVANCED SALES COMMUNICATIONS
This course develops communication skills to a more advanced level. Skills are developed through practice so that they may be used in role-play sellings, case studies and group discussions.
COMMERCIAL BAKING

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 ten-month certificate program with a September entry date. The program is designed to develop the skills required for employment in entry-level baking positions. It is noted for both its cooperative education component and its competency-based-learning (CBL) format.

Cooperative 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 work force 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- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with English 100 or 101, Mathematics 100 or 101, and Science 100 or 101;
or
- Adult Basic Education 7-10 program completion;
and
B- an interview with a special selection committee*;
and
C- submission of recent chest X-ray, medical, and dental certificates attesting to good health (required after an applicant receives notice of acceptance).

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level, one of Science 100, 101 or 190 and one of English 100, 101, 190, or Adult English (I & II).

Mature students must also 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 Admissions/Registration for review.

*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 advance to a position as a competent tradesperson within approximately one year. Job opportunities have been found in both large in-store bakeries and smaller bakery operations.

PROGRAM COMPETENCIES
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 Sani Principles & Procedures
B31-0A02 Basic Bakeshop Safety Rules
B31-0A03 Safe & Efficient Use Of Bakeshop Equip.
B31-0A04 Standardized Recipes & Conversions
B31-0B00 Basic Baking Ingredient Knowledge
B31-0B01 Typical Ingredients Used In Baking
B31-0C00 Prepare Yeast Raised Goods
B31-0C01 Basic Methods To Prepare Yeast Goods
B31-0D00 Prepare Muffin Type Products
B31-0D01 Basic Preparation For Muffin Type Products
B31-0E00 Prepare Pies And Short Pastry
B31-0E01 Methods Used To Produce Pies & Tarts
B31-0E04 Preparation Of Puff Pastry
B31-0F00 Prepare Cakes And Icings
B31-0F01 Identify Mixing Methods For Cakes
B31-0G00 Prepare Cookies
B31-0G01 Methods For Preparing Cookies
B31-0H00 Basic Management Functions
B31-0H01 Purchasing Functions
B31-0H02 Describe Receiving, Storing & Issuing
B31-0H03 Calculate Cost And Selling Prices
B31-0H04 Scheduling Staff And Production
B31-0H05 Explain The Role Of Merchandising
B32-N506 Nutrition

COURSE DESCRIPTIONS
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-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 & 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 & EFFICIENT USE OF BAKESHOP EQUIPMENT
Explain the safe and efficient use of standard commercial baking equipment.

B31-0A04 STANDARDIZED RECIPES & CONVERSIONS
Explain standardized recipes (formulas) and measurement proc. 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 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 ICINGS
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 functions.

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 recoverable 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-N506 NUTRITION
Introduction to aspects of nutrition as they pertain to the hospitality industry.
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 twelve-month certificate program with four entry dates: September, October, January and February. 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 both its cooperative education component and competency-based-learning (CBL) format.

Cooperative 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.

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- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with English 100 or 101, Mathematics 100 or 101, and Science 100 or 101; or
- Adult Basic Education 7-10 program completion; and
B- An interview with a special selection committee; and
C- submission of recent chest X-ray, medical, and dental certificates attesting to good health (required after an applicant receives notice of acceptance).

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level, one of Science 100, 101 or 190, and one of English 100, 101, 190, or Adult English (I & II). Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM COMPETENCIES
B32-AX01 Practical Restaurant Cooking
B32-AX02 Practical Food Preparation
B32-CX01 Practical Cooking Quantity

B32-C206 On-The-Job Training
B32-C207 On-The-Job Training
B32-DX01 Practical Patisserie
B32-N507 Nutrition
B32-0A09 Food Preparation Skills
B32-0A01 Explain Sanitation Principles & Procedures
B32-0A02 Explain Kitchen Safety Rules & Procedures
B32-0A03 Safe & Efficient Use Of Kitchen Equip.
B32-0A04 Use Kitchen Knives Safely & Efficiently
B32-0A05 Measurement Procedures & Conversions
B32-0A06 Preparation Of Typical Breakfast Items
B32-0A07 Describe Use Of Dairy Products
B32-0A08 Prepare Coffee & Tea
B32-0A09 Preparation Of Basic Stocks
B32-0A10 Prepare Soups
B32-0A11 Prepare Sauces
B32-0A12 Cook Vegetables, Rice & Pasta
B32-0A13 Cook Meat, Poultry & Fish
B32-0A14 Debone & Cut Meat, Fish & Poultry
B32-0A15 Prepare Salad & Salad Dressings
B32-0A16 Prepare Appetizers
B32-0A17 Buffet Preparation & Service
B32-0B00 Describe Elements Of Cost Control
B32-0B01 Common Mechanism Control & Records Of Food Sold
B32-0B02 Recipe Costs & Yields & Selling Prices
B32-0C00 Elements Of Purchasing & Inventory Control
B32-0C01 Elements Of Purchasing Functions
B32-0C02 Purchasing For Food & Non-Alcoholic Beverages
B32-0C03 Receiving, Storing & Issuing Procedures
B32-0D00 Prepare Patisserie Items
B32-0D01 Identify Baking Ingredients
B32-0D02 Prepare Yeast & Raised Goods
B32-0D03 Prepare A Variety Of Pastries
B32-0D04 Prepare Cakes, Sweets & Desserts
B32-0E00 Design Menu & Kitchen Layout
B32-0E01 Develop Menu
B32-0F00 Practice Healthy Food Choices
B32-0F01 Evaluate Nutrition Claims
B32-0F02 Plan A Nutritionally Balanced Menu
B32-0F03 Determine A Healthy Weight
B32-0F04 Interpret Food Regulations
T14-C502 Communication

B32-AX01 PRACTICAL RESTAURANT COOKING
This constitutes a summation of the student's practical performance.

B32-AX02 PRACTICAL FOOD PREPARATION
This constitutes a summation of the student's practical performance.

B32-CX01 PRACTICAL COOKING QUANTITY
This constitutes a summation of the student's practical performance.

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 ed co-ordinator.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B32-C207</td>
<td>ON-THE-JOB TRAINING</td>
<td>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.</td>
</tr>
<tr>
<td>B32-DXO1</td>
<td>PRACTICAL PATISSERIE</td>
<td>This constitutes a summation of the student’s practical performance.</td>
</tr>
<tr>
<td>B32-N507</td>
<td>NUTRITION</td>
<td>Introduction to aspects of nutrition as they pertain to the hospitality industry.</td>
</tr>
<tr>
<td>B32-0A00</td>
<td>FOOD PREPARATION SKILLS</td>
<td>This consists of compacs 1 - 17.</td>
</tr>
<tr>
<td>B32-0A01</td>
<td>EXPLAIN SANITATION PRINCIPLES &amp; PROCEDURES</td>
<td>Explain basic sanitation principles and procedures.</td>
</tr>
<tr>
<td>B32-0A02</td>
<td>EXPLAIN KITCHEN SAFETY RULES &amp; PROCEDURES</td>
<td>Explain basic kitchen safety rules and procedures.</td>
</tr>
<tr>
<td>B32-0A03</td>
<td>SAFE &amp; EFFICIENT USE OF KITCHEN EQUIP.</td>
<td>Explain the safe and efficient use of standard commercial kitchen equipment.</td>
</tr>
<tr>
<td>B32-0A04</td>
<td>USE KITCHEN KNIVES SAFELY &amp; EFFICIENTLY</td>
<td>Must be able to, using a French knife, perform basic cutting and sharpening techniques safely and efficiently.</td>
</tr>
<tr>
<td>B32-0A05</td>
<td>MEASUREMENT PROCEDURES &amp; CONVERSIONS</td>
<td>Explain standardized recipes, measurement procedures and calculate conversions.</td>
</tr>
<tr>
<td>B32-0A06</td>
<td>PREPARATION OF TYPICAL BREAKFAST ITEMS</td>
<td>Describe the preparation of typical breakfast items.</td>
</tr>
<tr>
<td>B32-0A07</td>
<td>DESCRIBE USE OF DAIRY PRODUCTS</td>
<td>Describe the use of Dairy Products.</td>
</tr>
<tr>
<td>B32-0A08</td>
<td>PREPARE COFFEE AND TEA</td>
<td>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.</td>
</tr>
<tr>
<td>B32-0A09</td>
<td>PREPARATION OF BASIC STOCKS</td>
<td>Explain the preparation of basic stocks.</td>
</tr>
<tr>
<td>B32-0A10</td>
<td>PREPARE SOUPS</td>
<td>Must be able to, provided with recipes, prepare a variety of soups and apply appropriate garnishes.</td>
</tr>
<tr>
<td>B32-0A11</td>
<td>PREPARE SAUCES</td>
<td>Must be able to, provided with recipes, prepare Brown, Veloute, Bechamel, Tomato and Hollandaise Sauces and four small sauces (as specified by your instructor).</td>
</tr>
<tr>
<td>B32-0A12</td>
<td>COOK VEGETABLES, RICE &amp; PASTA</td>
<td>Must be able to, based on the classification of vegetables and the types of rice and pasta, explain, select and apply appropriate cooking methods with attention to sanitation principles and safety procedures.</td>
</tr>
<tr>
<td>B32-0A13</td>
<td>COOK MEAT, POULTRY AND FISH</td>
<td>Must be able to cook meat, poultry and fish 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.</td>
</tr>
<tr>
<td>B32-0A14</td>
<td>DEBONE &amp; CUT MEAT, FISH AND POULTRY</td>
<td>Debone, cut and portion meat, fish and poultry.</td>
</tr>
<tr>
<td>B32-0A15</td>
<td>PREPARE SALAD &amp; SALAD DRESSINGS</td>
<td>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.</td>
</tr>
<tr>
<td>B32-0A16</td>
<td>PREPARE APPETIZERS</td>
<td>Must be able to explain the classification, the function and the preparation of appetizers.</td>
</tr>
<tr>
<td>B32-0A17</td>
<td>BUFFET PREPARATION AND SERVICE</td>
<td>Must be able to describe, identify and prepare a selection of typical foods used for buffets including their presentation and service.</td>
</tr>
<tr>
<td>B32-0B00</td>
<td>DESCRIBE ELEMENTS OF COST CONTROL</td>
<td>Describe elements of cost control as they apply to kitchen management. This consists of compacs 1 - 2.</td>
</tr>
<tr>
<td>B32-0B01</td>
<td>COMMON MECHANISM CONTROL &amp; RECORDS OF FOOD SOLD</td>
<td>Name the control mechanisms commonly used and explain the recording of food items sold.</td>
</tr>
<tr>
<td>B32-0B02</td>
<td>RECIPE COSTS &amp; YIELDS AND SELLING PRICES</td>
<td>Calculate recipe costs, portion costs, yields and selling prices.</td>
</tr>
<tr>
<td>B32-0C00</td>
<td>ELEMENTS OF PURCHASING &amp; INVENTORY CONTROL</td>
<td>Describe elements of purchasing and inventory control. This consists of compacs 1 - 3.</td>
</tr>
<tr>
<td>B32-0C01</td>
<td>ELEMENTS OF PURCHASING FUNCTIONS</td>
<td>Explain the basic elements of purchasing functions.</td>
</tr>
<tr>
<td>B32-0C02</td>
<td>PURCHASING FOR FOOD &amp; NON-ALCOHOLIC BEVERAGES</td>
<td>Identify purchasing criteria for food and non-alcoholic beverage products.</td>
</tr>
<tr>
<td>B32-0C03</td>
<td>RECEIVING, STORING AND ISSUING PROCEDURES</td>
<td>Describe receiving, storing and issuing procedures.</td>
</tr>
<tr>
<td>B32-0D00</td>
<td>PREPARE PATISSERIE ITEMS</td>
<td>This consists of compacs 1 - 4.</td>
</tr>
</tbody>
</table>
B32-0D01 IDENTIFY BAKING INGREDIENTS
Must be able to describe the basic bakery ingredients, indicate their characteristics, uses, function and composition.

B32-0D02 PREPARE YEAST & RAISED GOODS
Must be able to prepare a variety of fermented goods and describe the basic methods used.

B32-0D03 PREPARE A VARIETY OF PASTRIES
Must be able to describe how pastries are made and prepare a basic variety.

B32-0D04 PREPARE CAKES, SWEETS & DESSERTS
Must be able to describe the various methods used to produce and decorate a variety of sweets and desserts.

B32-0E00 DESIGN MENU AND KITCHEN LAYOUT
This consists of compact 1.

B32-0E01 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.

B32-0F00 PRACTICE HEALTHY FOOD CHOICES
Must be able to practice healthy food choices.

B32-0F01 EVALUATE NUTRITION CLAIMS
Must be able to evaluate nutrition claims.

B32-0F02 PLAN A NUTRITIONALLY BALANCED MENU
Must be able to plan a nutritionally balanced menu.

B32-0F03 DETERMINE A HEALTHY WEIGHT
Must be able to determine a healthy weight.

B32-0F04 INTERPRET FOOD REGULATIONS
Must be able to interpret food regulations.

T14-C502 COMMUNICATION
A program similar to T14-C504 but only 20 hours duration.
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 - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with one of English 300 or 301 and one of Mathematics 300* or 301;
   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.

Mature Student Admission. Mature student applicants may submit either the Manitoba Education Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics and English as outlined in (A) above. Mature students must also meet entrance requirement (B) 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE

Term 1
B11-A191 Introductory Accounting A
B13-M611 Introduction To Business
B15-C101 Data Processing I
B15-M102 Maths Of Finance
B16-E129 Communications I

Term 2
B11-A291 Introductory Accounting B
B13-S543 Human Behavior In Organizations
B15-C201 Data Processing II
B15-C508 Microcomputers
B16-E289 Advanced Communication

Term 3
B11-A392 Introductory Accounting C
B12-E276 Economic Principles I
B15-C301 Data Processing III
B15-C303 Operating Systems
B15-C306 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 II
B15-C502 PLI Programming
B15-C507 Business Applications
B15-C607 Data Base

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

COURSE DESCRIPTIONS
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, control procedures for cash and receivables payrolls.

B11-A291 INTRODUCTORY ACCOUNTING B
Accounting for inventories and their valuation, procedures and techniques in the treatment of plant and equipment transactions, accounting principles and concepts, accounting for partnerships, departmentalization.

B11-A392 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-A681 MANAGERIAL ACCOUNTING
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.

B12-E276 ECONOMIC PRINCIPLES I
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-E377 ECONOMIC PRINCIPLES II
This is a course in macro-economic principles. Studies will include national income and its determination, the monetary
system, inflation and unemployment, with special emphasis on monetary and fiscal policy.

B13-M611 INTRODUCTION TO BUSINESS
A broad analysis of business concepts, functional internal characteristics of a business and the interrelationships among business, government and the consumer.

B13-S543 HUMAN BEHAVIOR IN ORGANIZATIONS
This course is about people at work. It focuses upon the many psychological and social pressures that people experience when they interact with each other. Through lectures, films and case studies, an attempt is made to understand the human relationships that can help us accomplish our goals in all types of organizations.

B15-C101 DATA PROCESSING I
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 II
Data Processing II 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 III
The first half of the term is a continuation of the work begun in "Data Processing II", that is, COBOL and "Structured concepts" are continued. Some of the topics covered include Variable Length Records, "GO-TO-LESS" programming, Indexed Files, etc. "Forms Management" concepts are also covered. For this Hewlett-Packard's "VIEW PLUS" software is used in conjunction with COBOL. The second half of the term is given over to BASIC. Concepts associated with the topic such as Basic Statements, Basic Commands, File Processing, Random Number Generation, etc., are covered using Hewlett Packard's Business Basic Interpreter.

B15-C303 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 operating system,
2) a minicomputer operating system and,
3) a microcomputer operating system. Students learn JCL and receive "hands-on" instruction using;
1) IBM's OS-JCL (mainframe),
2) HP's MPE-XL JCL (minicomputer) and,
3) IBM's PC-DOS (microcomputer).

B15-C308 SYSTEMS ANALYSIS
This is the first in a series of two courses in Systems Analysis and Design offered in Terms III and IV 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. 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-C401 RPG PROGRAMMING
This course will provide the student with a sound understanding of the Report Program Generator language. This language is different from procedure-oriented languages in that specification forms are used to invoke the built-in logic to facilitate processing data. The emphasis is practical and applied to the business environment. All specification forms are covered. Topics covered include the use of tables and arrays as well as sequential and indexed sequential file processing concepts. The course uses the lecture/lab approach to present the material. Several programming assignments are written by the student to reinforce learning the language specifications and programming techniques.

B15-C405 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 3 COBOL programs to simulate database processing:
1) to create a simple linked-list structure.
2) to maintain a tree structure using the child and twin pointer technique.
3) 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 III and IV of the Computer Analyst Programmer program. This, the second course, 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/data base 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-C502 PL/I PROGRAMMING
PL/I is a structured high level programming language. Elementary as well as advanced concepts are covered. The objective of the course is to enable students to become proficient in all aspects of PL/I programming with particular emphasis on business
applications. Topics covered include all structured control statements, built-in functions, multi-dimensional array processing, subroutines, function procedures, structures, various input/output processing and file processing. The course uses the lecture/lab approach to present the material. Several programming assignments are written by the student to reinforce learning the language specifications and programming techniques.

B15-C507 BUSINESS APPLICATIONS
The purpose of this course is to provide the student with an understanding of the most common business computer applications. The following are covered: Accounting-payroll, A/R, cash receipts, A/P, fixed assets, G/L, financial statements. Sales/marketing-invoicing, order filling, sales analysis, market penetration. Inventory control-forecasting and control, purchasing and receiving. Manufacturing-work-in-process and scheduling, labour distribution and job-costing.

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, SuperCalc 5, and graphic software BPS GRAPHICS are currently being studied.

B15-C601 EDIT PROJECT
This course is a lab course in which the student is required to complete the on-line/edit program. Assigned in Term V in the Business Applications program, 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 student is required to use COBOL along with VIEW PLUS (Hewlett Packard's Forms Management software).

B15-C607 DATA BASE
The objective of this course is to introduce Computer Analyst/Programmer students to commercially available data base management systems. Specifically, the data base products covered are: hierarchical-IMS (IBM); network IMAGE and QUERY 3000 (Hewlett-Packard); relational-R:Base 50000 (Microrim).

B15-C608 4TH GENERATION SOFTWARE
This course instructs students in the latest 4th generation methodologies. The COGNOS "POWER HOUSE" system 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: QDD 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 the times. Highlighted are current trends and current hardware developments in the industry today. Also covered is an introduction to Data Communications and ANSI C Language.
PURPOSE
To develop a broad general background in electronics with
specialty training in computer hardware and software, including
troubleshooting, maintenance and servicing.

PROGRAM
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 and computer
systems to peripheral devices and the troubleshooting
environment.

Computer Instrumentation, Electrical and Electronic Engineering
Technology programs have a common first year of training.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent
  secondary school preparation) with Mathematics 300, English
  300 or 301, and Physics 300* or Physical Science 301;
  or
- Adult Basic Education Pre-Technology (Adult 12) Program
  completion

Mature Student Admission. Mature students may submit either
the Manitoba Education and Training Mature Student Grade 12
Diploma or G.E.D. 12 standing in lieu of 20 credits; however,
they must have specific credits in mathematics, English, and
science* as outlined above. Mature students must also 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 Admissions/Registration for review.

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

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.

PROGRAM OUTLINE
Term 1
ELE-E101 Electric Circuits
ELE-E102 Electrical Instruments
ELE-E104 Personal Computers I
ELE-E106 Drafting
ELE-M102 Mathematics
ELE-P109 Physics
ELE-R100 Report Writing

Term 2
ELE-E201 Electric Circuits
ELE-E202 Electrical Instruments
ELE-E204 Personal Computers II
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

Term 4
ELE-C421 Electronic Circuits
ELE-C423 Digital Design
ELE-C424 Computer Systems I
ELE-C425 Microprocessors I
ELE-C427 Electronic Devices
ELE-M422 Calculus

Term 5
ELE-C521 Circuits & Transmission Lines
ELE-C524 Computer Systems II
ELE-C525 Microprocessors II
ELE-C527 Electronic Devices
ELE-C528 Computer Peripherals
ELE-C529 Linear Control Systems
ELE-M522 Calculus

Term 6
ELE-C621 Data Communications
ELE-C624 Computer Systems III
ELE-C625 Microprocessors III
ELE-C626 Manufacturing Techniques
ELE-C627 Electronic Devices
ELE-C629 Trouble Shooting Microprocessor Systems
ELE-R620 Report Writing

COURSE DESCRIPTIONS
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 of 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
This course will deal with general topics of the "Classic" computer
systems, with emphasis on: Data types, Buffered block parallel
and bit serial Input/Output, Polled versus Interrupt driven I/O,
Input/Output devices and formats, disk hardware and software
with respect to disk formats, files and linear versus hierarchical
directory structures, a preparation of disks for a Disk Operating
System. At the end of this course, the above topics are integrated
to introduce the elements of a ROM monitor such as "BIOS" and
a DOS such as "MS DOS".

ELE-C425 MICROPROCESSORS I
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 & 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 II
This course will provide a more detailed view of the internals of a current DOS and include application specific topics of the currently most prevalent applications such as: MS- DOS, CAD (S), Data Base and Spread Sheets, Word Processors and Windowing subsystems; with emphasis on the installation, configuration, and maintenance of these.

ELE-C525 MICROPROCESSORS II
This course is a continuation of the course Microprocessors I (ELE-C425). Parallel I/O is introduced with the programming continuing to be in assembly language. Control applications, interrupts, electrical characteristics, timing and some common interfacing requirements are covered.

ELE-C527 ELECTRONIC DEVICES
This course is a continuation of ELE-C427. Five hours per week of lectures and labs are devoted to the IC operational amplifier in comparator, negative feedback and active filter circuits. Some other ICs 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.

ELE-C529 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-C621 DATA COMMUNICATIONS
This 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.

ELE-C624 COMPUTER SYSTEMS III
This course will deal with more advanced system types, their structure, installation, preparation and maintenance, and their target applications, specifically: UNIX (XENIX and/or QNX) multitasking a multi-user operating system as well as a relational look at database systems. Additionally, various advanced topics will be presented, such as: Bit Slice architecture, Site preparation and installation, and an introduction to RISC and/or Parallel Processing.

ELE-C625 MICROPROCESSORS III
This course is a continuation of the course Microprocessors II (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 microprocessor, 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 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-wrapping techniques. The course introduces Printed Circuit Artwork Design and Layout.

ELE-C627 ELECTRONIC DEVICES
This course is a continuation of ELE-C527. It consists of a three-hour lab and two hours of lecture per week. Power control, trigger devices and associated theory and applications are investigated. Practical aspects are also covered. Some other devices relevant to the technology are also investigated.

ELE-C629 TROUBLE SHOOTING 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% devoted to lab work.

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
ELE-E102 Basic Electrical Instruments is an applied Ohm's Law Laboratory course for the ELE-E101 Electric Circuits 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-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-E104 PERSONAL COMPUTERS I
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 programs. 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-E201 ELECTRIC CIRCUITS
Continuation of Electric Circuits ELE-E101. Fundamental concepts of sinusoidal voltage and current, time and phasor domains; instantaneous average and effective values. Resistor, inductor and capacitor in AC sinusoidal circuit; impedance and admittance. Problem solving methods for simple AC circuits. Analysis of more complex AC electric circuits using network theorems, network conversions, mesh and nodal methods. Single phase AC power: average, reactive and apparent, power factor; measurement of power in a single phase AC circuit using a wattmeter.

ELE-E202 ELECTRICAL INSTRUMENTS
This course is a continuation of ELE-E102 Basic Electrical Instruments and is the lab course for ELE-E201 Electric Circuits. 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 II
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. The three hours per week of formal class time is spent in the PC room or a classroom working on one of a series of tutorials/assignments which are keyed closely to the text and supplemented with material more relevant to applications in the Electronics, Electrical, Computer and Instrumentation 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% 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 Z80 microprocessor. This course lays the foundation for the more advanced microprocessor training contained in the second year of all Electrical, Electronic, Instrumentation and Computer 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 behaviour of small signal amplifiers. It is primarily a lecture and lab-related program.

ELE-M102 MATH
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.

ELE-M202 CALCULUS

ELE-M302 CALCULUS
Integral calculus. Work with trigonometry identities and equations: reciprocal, pythagorean, angle sum, double and half angle relations. Integrate algebraic, log, exponential, trigonometric quantities. Use substitution and by-part techniques. Find areas, average and RMS values, and work with integrals with current, charge and voltage.

ELE-M422 CALCULUS
Applied Calculus for Computer Technology - McLaurin and Taylor series, differential equations with emphasis on Laplace transform methods. Applications include: computation of trigonometric and logarithmic functions by series, transients in series circuits and using TUTSIM software to simulate natural and controlled systems.
ELE-M522 CALCULUS
Applied Calculus for Computer Technology - Fourier series and MathCAD software. Applications include harmonic analysis by integration and software, waveform filtering simulation by FFT on software, AC circuits by matrices on software.

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, significant figures, 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.

ELE-P209 PHYSICS
An intermediate level course in 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.

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, SIL, radiant and luminous intensity, response of the eye, illumination and luminous intensity, sources of light and photoelectric effect.

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-R620 REPORT WRITING
Review of report writing, oral presentations, and job search techniques; planning, writing and presenting a formal technical report.
CREATIVE COMMUNICATIONS

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

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.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with one of English 300 or 301; 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 (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 Admissions/Registration Office at 632-2327 to confirm the exact date.

Mature Student Admission. Mature student applicants may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma with English 300 or 301, or G.E.D. 12 in lieu of 20 high school credits. Mature applicants must also complete requirements (B) through (E) outlined 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 Admissions/Registration for review.

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 labour market.

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 reporters for daily and weekly newspapers; copywriters and media buyers for advertising agencies, radio stations, and television stations; and public relations personnel for various companies and government agencies.

PROGRAM OUTLINE
Term 1
B10-C110 Public Relations: Introduction
B10-C111 Creative Writing: Fiction
B10-C112 Journalism: Introduction
B10-C113 Composition & English Grammar
B10-C114 Advertising: Introduction
B10-C115 Literary Structure & Styles
B18-W120 Word Processing: Introduction

Term 2
B01-A309 Layout & Design
B10-C216 Current Events
B10-C218 Radio: Introduction
B10-C220 Public Relations: Process
B10-C221 Creative Writing: Drama
B10-C222 Journalism: Style And Practice
B10-C224 Advertising: Electronic Media

Term 3
B10-C319 Television: Introduction
B10-C325 Canadian Literature
B10-C330 Public Relations: Management
B10-C331 Creative Writing: Style
B10-C332 Journalism: Media And The Law
B10-C334 Advertising: Print Media
B10-C410 Business Communications

Term 4
B10-C217 Oral Communication
B10-C420 Independent Professional Project I
B10-C429 Television: Production
B10-C430 Radio: Production
B12-E415 Applied Economics
Electives: one course required
B10-C440 Public Relations: Practicum I
B10-C442 Journalism: Practicum I TV And Radio News
B10-C444 Advertising: Practicum I

Term 5
Required courses:
B10-C510 Field Work I
B10-C520 Independent Professional Project II
B10-C537 Television: Workshop
B10-C544 Radio: Fine Tuning For The Ear
Elective Group A: one course required
B10-C550 Public Relations: Practicum II
B10-C552 Journalism: Practicum II The Newsroom
B10-C554 Advertising: Practicum II
Elective Group B: two courses required
B02-P516 Photographic I
B10-C509 Media Buying I
B10-C512 Freelance Writing I
B10-C513 Cultural Arts I
B10-C514 Theatre Arts I
B13-S527 Psychology

Term 6
Required courses:
B10-C609 Independent Professional Project III
B10-C610 Field Work II
B10-C644 Radio: You're On The Air
B10-C649 Television: Broadcasting
Elective Group A: one course required
B10-C659 Public Relations: Practicum III
B10-C664 Advertising: Practicum III
B10-C663 Journalism: Practicum III Developing Print
Elective Group B: two courses required
B13-S617 Sociology
B02-P526 Advanced Photojournalism II
B10-C612 Media Buying II
B10-C624 Theatre Arts II
B10-C622 Freelance Writing II
B10-C623 Culural Arts II
B10-C855 Manitoba Literature

COURSE DESCRIPTIONS
B01-A309 LAYOUT & DESIGN
This course involves looking at the basic principles of design and applying them in practical exercises. Composition of typographic and illustrative elements, copyfitting, photo cropping and scaling, along with reproduction methods and materials are explored. The goal 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.

B02-P516 PHOTOJOURNALISM I (optional)
This introductory course provides the student with the theory and practical skills to make photographs to compliment 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, the processing of the record, the enlarging and developing of the print, the lighting for photography and the techniques for improving photographs.

B02-P526 ADVANCED PHOTOJOURNALISM II (optional)
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.

B10-C216 CURRENT EVENTS
This introductory course provides the student with a basic understanding of the history of public relations as it relates 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-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 playbacks in order to analyze and evaluate speaking styles.

B10-C218 RADIO: INTRODUCTION
This course is designed to introduce 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 students own radio potential through studio work.

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 MBO techniques.

B10-C221 CREATIVE WRITING: DRAMA
In this creative writing course the student is encouraged to develop the creative imagination through writing exercises in dramatic writing. The student practices writing for the stage, radio and television.

B10-C222 JOURNALISM: STYLE AND PRACTICE
Students put book learning and class lectures from the previous term to practice by covering civic politics, news conferences, and writing feature profiles on prominent local personalities. The course emphasizes 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-C319 TELEVISION: INTRODUCTION
This course is designed to introduce the student to the various components of television production. Emphasis is placed on the student learning through hands-on experience with portable, studio and editing video tape equipment.

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 news 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 I
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 course 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 affect radio.

B10-C440 PUBLIC RELATIONS: PRACTICUM I
Term 4 focuses on the study of numerous communication tools used in the contemporary practice of public relations. The student becomes acquainted with writing and production techniques related to the creation of such tools as brochures, A/V 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 I 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 course dovetail with assignments in the radio and television courses.

B10-C444 ADVERTISING: PRACTICUM I
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 I (optional)
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 I
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 I (optional)
Freelance Writing I 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 I (optional)
The first term of this optional course develops the student's 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 student is 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 I (optional)
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-C520 INDEPENDENT PROFESSIONAL PROJECT II
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 II
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 II 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 II
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-C557 INDEPENDENT PROFESSIONAL PROJECT III
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-C560 FIELD WORK II
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-C562 MEDIA BUYING II (optional)
This course involves practical exercises for the planning and buying of media, culminating with the delivery of a major buy for an assigned actual local client.
B10-C614 THEATRE ARTS II (optional)
This course is designed to build upon the practical experience the student was exposed to in Theatre Arts I. 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-C622 FREELANCE WRITING II (optional)
Freelance Writing II is an extension of Freelance Writing I. The major focus is on writing style, manuscript presentation and broader market contact.

B10-C623 CULTURAL ARTS II (optional)
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 (optional)
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 EFP 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 III
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 III 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 III (optional)
In this course the student works for an assigned actual local client. Creative Communications 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.

B12-E415 APPLIED ECONOMICS
This course guides students in using economic concepts and reasoning in everyday 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.

B13-S527 PSYCHOLOGY (optional)
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-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.

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.
DENTAL ASSISTING - LEVEL I

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 graduate also will be able to perform limited laboratory work and receptionist duties.

PROGRAM
Dental Assisting-Level I is a 30-week certificate program with a September entry date. The program has been fully accredited by the Canadian Dental Association, after a thorough inspection by an accreditation team.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with one of Biology 300 or 301, Chemistry 300, Physical Science 301, or Physics 300, at a minimum. (Biology is recommended. Preparation in mathematics at the 200 or 201 level is strongly suggested);

or

- Adult Basic Education 11C or 11A program completion;

and

B - successful completion of the prescribed reading test at the minimum acceptable proficiency level;

and

C - recent medical, chest X-ray, and dental certificates plus immunization record 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.)

Mature Student Admission. Mature students may submit the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credit in at least one science at the 300 or 301 level. Mature students must also 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Graduates have found employment in private dental offices, large clinics, hospital dental clinics or in government public health programs.

PROGRAM OUTLINE
B15-S108 Introduction to Data Processing (CHAIRSIDE DENTAL ASSISTANT)
F01-B000 Physical Education
H07-C101 Life Sciences
H07-C103 Supervised Clinical Experience
H07-C106 Dental Practice Management
H07-C109 Medical Emergencies
H07-C110 Accounting
H07-C111 Interpersonal Relations
H07-C112 Preventive Dentistry
H07-C113 Four-Handed Dentistry - Theory
H07-C114 Four-Handed Dentistry - Practical
H07-C115 Dental Equipment - Theory
H07-C116 Dental Equipment - Practical
H07-C117 Operative Dentistry - Theory
H07-C118 Operative Dentistry - Practical
H07-C119 Rubber Dam - Theory
H07-C120 Rubber Dam - Preclinical
H07-C121 Rubber Dam - Clinical
H07-C122 Diagnosis - Theory
H07-C123 Diagnosis - Practical
H07-C124 Radiology - Theory
H07-C125 Radiology - Preclinical
H07-C126 Radiology - Clinical
H07-C127 Microbiology and Infection Control - Theory
H07-C128 Microbiology and Infection Control - Practical
H07-C129 Prosthodontics - Theory
H07-C130 Prosthodontics - Practical
H07-C131 Endodontics - Theory
H07-C132 Endodontics - Practical
H07-C133 Oral Surgery
H07-C134 Periodontics
H07-C135 Orthodontics
H07-C136 Pediatric Dentistry
H11-S101 Social Science

COURSE DESCRIPTIONS
B15-S108 INTRODUCTION TO DATA PROCESSING General computer literacy and the WordPerfect word processing software.
F01-B000 PHYSICAL EDUCATION
Physical education credit classes provide instruction in archery, badminton, golf, gymnastics, swimming, tennis, trampolining, volleyball, etc. with emphasis on basic skills. Advanced classes are also available for the more skilled. These classes provide an in-depth study of strategy in theory and practical. Extensive use of video-tape will be made in advanced classes.

H07-C101 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-C103 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. Consists of seven weeks in a variety of dental experiences.

H07-C106 DENTAL PRACTICE MANAGEMENT
This course prepares the student to function in the communications and organizational aspects of dental practice. The course contains three parts: Communications, Accounting (Financial Record-Keeping), and Dental Practice Management. Topics include letter-writing, resume preparation, interview skill, basic accounting procedures, appointment and inventory control and dental office records among others.

H07-C109 MEDICAL EMERGENCIES
Students will learn basic rules to follow for medical emergencies. Students will also obtain CPR and St. John Ambulance First Aid certificates.
H07-C110 ACCOUNTING
Students will study and practice basic principles of accounting.

H07-C111 INTERPERSONAL RELATIONS
Students will study and practice communication skills for various situations which are common in a dental office.

H07-C112 PREVENTIVE DENTISTRY
Students will study causes and prevention of dental diseases.

H07-C113 FOUR-HANDED DENTISTRY - THEORY
Students will study the principles of four-handed dentistry. Students will practice passing and receiving of dental instruments.

H07-C114 FOUR-HANDED DENTISTRY - PRACTICAL
Students will practice passing and receiving dental instruments.

H07-C115 DENTAL EQUIPMENT - THEORY
Students will study the operation of various dental equipment.

H07-C116 DENTAL EQUIPMENT - PRACTICAL
Students will operate various dental equipment.

H07-C117 OPERATIVE DENTISTRY - THEORY
Students will study various restorative dental procedures. Students will also study instrumentation used for each procedure.

H07-C118 OPERATIVE DENTISTRY - PRACTICAL
Students will learn mixing procedures for materials used in various restorative procedures.

H07-C119 RUBBER DAM THEORY
Students will study the purpose and technique of rubber dam application.

H07-C120 RUBBER DAM - PRECLINICAL
Students will develop required skills by placing rubber dam on mannekins.

H07-C121 RUBBER DAM - CLINICAL
Students will complete rubber dam requirements by placing rubber dam on fellow classmates.

H07-C122 DIAGNOSIS - THEORY
Students will learn various methods/techniques used in diagnosing oral conditions.

H07-C123 DIAGNOSIS - PRACTICAL
Students will learn mixing procedures of materials used in diagnosis.

H07-C124 RADIOLOGY - THEORY
Students will study the purpose and techniques of obtaining intra-oral radiographs.

H07-C125 RADIOLOGY - PRECLINICAL
Students will learn the placement of x-ray films by practising on classmates. The films are not exposed during the pre-clinical classes.

H07-C126 RADIOLOGY - CLINICAL
Students will place and expose radiographs using DXTR as the patient. Students must also mount these radiographs. Each student is rotated through radiology to learn and perform the developing of radiographs.

H07-C127 MICROBIOLOGY AND INFECTION CONTROL - THEORY
Students will learn basic microbial life and methods used to destroy the micro-organisms.

H07-C128 MICROBIOLOGY AND INFECTION CONTROL - PRACTICAL
Students will operate various sterilizers and various disinfecting techniques.

H07-C129 PROSTHODONTICS - THEORY
Students will learn of various prosthesis used in dentistry.

H07-C130 PROSTHODONTICS - PRACTICAL
Students will mix materials used in preparation for prosthesis.

H07-C131 ENDODONTICS - THEORY
Students will learn causes and treatment of pulpal injuries.

H07-C132 ENDODONTICS - PRACTICAL
Students will learn basic skills for assisting with root canal therapy.

H07-C133 ORAL SURGERY
Students will learn various surgical procedures performed in dentistry.

H07-C134 PERIODONTICS
Students will learn causes and treatments of periodontal disease.

H07-C135 ORTHODONTICS
Students will learn causes and treatments of ortho which involves the straightening of teeth.

H07-C136 PEDIATRIC DENTISTRY
Students will learn the similarities and differences between treating adults and children.

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.
DENTAL ASSISTING - LEVEL II

PURPOSE
To 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 dam, placement of sealants and taking of impressions.

PROGRAM
Dental Assisting-Level II is a ten-week certificate program with an April entry date. The program has been fully accredited by the Canadian Dental Association after a thorough inspection by an accreditation team.

ENTRANCE REQUIREMENTS
A - Dental Assisting-Phase I Certificate from Red River Community College or from an equivalent program accredited by the Canadian Dental Association; and
B - current First Aid and C.P.R. Basic Rescuer certificates; and
C - successful completion of the prescribed reading skills test; and
D - recent certificates of good medical and dental health and an immunization record (to be submitted after notification of acceptance is received).

Mature Student Admission. All Applicants, regardless of age, must meet the specific entrance requirements, as noted above.

EMPLOYMENT POTENTIAL
Because graduates of this program are capable of accepting increased responsibilities, both job opportunities and remuneration generally are greater. Graduates have found employment in private dental offices, large clinics, hospital dental clinics and in government public health programs.

PROGRAM OUTLINE
H07-E204 Dental Public Health Education
H07-E210 Polishing & Fluoride Theory
H07-E212 Sealants Theory
H07-E213 Impressions Theory
H07-E215 Polish - Preclinical
H07-E216 Impressions - Preclinical
H07-E219 Sealants - Preclinical
H07-E220 Polish - Clinical
H07-E222 Sealants - Clinical
H07-E224 Oral Health Theory
H07-E225 Nutrition
H07-E226 Impressions - Clinical
H10-G031 Job Search
H11-S201 Social Science

COURSE DESCRIPTIONS
H07-E204 DENTAL PUBLIC HEALTH EDUCATION
The student will study and apply concepts of dental health education to different population groups.

H07-E210 POLISHING & FLUORIDE THEORY
The student will study the purpose and technique of rubber cup polishing and application of topical fluoride.

H07-E212 SEALANTS THEORY
The student will study the purpose and techniques of applying pit and fissure sealants.

H07-E213 IMPRESSIONS THEORY
The student will study the purpose and techniques of obtaining impressions for study models.

H07-E215 POLISH-PRECUNICAL
Students practice polishing of teeth on a mannequin to develop necessary skills.

H07-E216 IMPRESSIONS - PRECLINICAL
Students take impressions on classmates.

H07-E219 SEALANTS - PRECLINICAL
Students practice placement of sealants on mannequins to develop necessary skills.

H07-E220 POLISH - CLINICAL
Students polish patients' teeth dam on each other.

H07-E222 SEALANTS - CLINICAL
Students apply sealants on approved patients.

H07-E224 ORAL HEALTH THEORY
Students will study and understand the importance of proper personal oral hygiene procedures as well as be able to identify unhealthy oral soft structures.

H07-E225 NUTRITION
Students will study the importance of nutrition and its relation to good oral health.

H07-E226 IMPRESSIONS - CLINICAL
Students will take impressions on classmates under the supervision of a licensed dentist.

H10-G031 JOB SEARCH
The student will learn to write a personal resume, as well as fill out mock applications.

H11-S201 SOCIAL SCIENCE
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: H11-S101.
DEVELOPMENTAL SERVICES WORKER

PURPOSE
To develop the knowledge and skills required to provide quality care to people with a mental handicap, 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 - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) including English 300 or 301, and Mathematics 300 or 301 or Accounting 302;
- Adult Basic Education 11A, 11B or 11C;
and
B - successful completion of the prescribed reading skills test at the minimum competency level required;
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 experience. Due to government regulations of agencies

Mature Student Admission. Mature student applicants may submit the Manitoba Education and Training Diploma or G.E.D. 12 standing in lieu of 20 credits. A specific background in English and Mathematics, as noted in (A) above, is recommended. As well, mature students must meet entrance requirements (B) through (E) 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 Admissions/Registration for review.

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 I
H11-D101 Social & Historical Perspectives in Developmental Services
H11-D102 Health Care
H11-D103 Professional Development
H11-D104 Interpersonal Communications
H11-D112 Practicum I
H11-D113 Practicum II
H11-D204 Teaching Strategies
H11-S101 Social Science
H11-S201 Social Science
H11-S301 Social Science

Year 2
F01-E001 Activity for Life II
H11-D201 Social & Historical Perspectives in Developmental Services
H11-D202 Health Care
H11-D203 Professional Development
H11-D205 Family Dynamics & Resources
H11-D206 Planning & Review
H11-D207 Advocacy
H11-D208 Communication & Counselling
H11-D209 Management
H11-D210 Sexuality
H11-D211 Service Systems: Issues & Applications
H11-D212 Practicum III
H11-D213 Practicum IV
H11-D214 Aging & Developmental Disabilities (optional)
H11-D215 Serving Persons with Disabilities (optional)

COURSE DESCRIPTIONS
F01-D001 ACTIVITY FOR LIFE I
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.

F01-E001 ACTIVITY FOR LIFE II
A continuation of Activity for Life I, F01-D001.

H11-D101 SOCIAL & HISTORICAL PERSPECTIVES IN DEVELOPMENTAL SERVICES
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. The student will examine their own values and attitudes towards labeled individuals in an effort to guard against future prejudice and discrimination.

H11-D102 HEALTH CARE
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. Personal care techniques, first aid, and emergency procedures are also given priority.

H11-D103 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 behaviours as well as gain an understanding of the variety
of services available for individuals who have a mental handicap.

H11-D104 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.

H11-D112 PRACTICUM I
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 I course work. Either Practicum I or II must be a residential placement.

H11-D113 PRACTICUM II
The student will work in one agency to practice the theoretical skills learned in Year I. Specific assignments will be given to ensure that the student develops the skills and fulfills the expectations of Year I course work. Either Practicum I or II must be a residential placement.

H11-D201 SOCIAL & HISTORICAL PERSPECTIVES IN DEVELOPMENTAL SERVICES
This subject is a continuation of Values and Attitudes (H11-D101). It deals with the concept of normalization and how to apply it in the lives of people who have a mental handicap. Respect for the individual and their rights to make choices is stressed, as is respect for their families. The course is meant to present positive values and attitudes towards the community inclusion of people who have a mental handicap.

H11-D202 HEALTH CARE
This course is a continuation of Health Care (H11-D102). It deals with alterations from normal physical, mental and emotional health, with emphasis on the kinds of conditions that are typically associated with mental retardation. The purposes and administration of various medications will be stressed as well ensuring that proper medical care is provided.

H11-D203 PROFESSIONAL DEVELOPMENT
This course is an expansion of Professional Development (H11-D103). Its classroom component includes an overview of the bureaucracy and use of the system, how to present oneself professionally, and deal with reality. This course continues throughout the practicum placements and provides a forum for discussion and practicum project presentation.

H11-D204 TEACHING STRATEGIES
This course is an overview of strategies which will assist in teaching persons with a mental handicap. The course looks at learning theory, analysis of routines, the use of assessment tools, various teaching strategies, how to evaluate teaching effectiveness, sensitivity to the individual learner and an overview of behavioral programs.

H11-D205 FAMILY DYNAMICS AND RESOURCES
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.

H11-D206 PLANNING & REVIEW
This course introduces a comprehensive method of planning for persons who have a mental handicap. The stress is placed on who is involved in the family process, recognizing the abilities of the person and promoting and evaluating experiences based on what is appropriate for the individual involved.

H11-D207 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 family and the individual to advocate for themselves.

H11-D208 COMMUNICATION AND COUNSELLING
This course is a continuation of the first year course, Interpersonal Communications. The emphasis here is on being effective communicators and counselors, and includes the ability to recognize and respond to an individual's life situation, communicating with family, and responding safely to crisis situations.

H11-D209 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.

H11-D210 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.

H11-D211 SERVICE SYSTEMS: ISSUES AND APPLICATIONS
This course is an overview of service systems for people who have a mental handicap. It is designed to give the student specific information in the areas of residential/leisure, employment/occupation, and educational services. Current issues are discussed and specific applications to services are studied.

H11-D212 PRACTICUM III
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.

H11-D214 AGING & DEVELOPMENTAL DISABILITIES
This course is designed to give the student a greater insight into aging as it affects persons with developmental disabilities. The course will include a short segment of experience in the community. Both classroom and community segments will focus on aging as it affects the general population, and how this may differ for persons with developmental disabilities.

H11-D215 SERVING PERSONS WITH SEVERE DISABILITIES
This course is a broad look at resources and services for persons with more challenging needs. Topics to be studied include augmentative communication, resource bases, and attendant care. Students will take a brief look at specific service issues that affect these individuals. A short segment of community experience will be included.

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
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: H11-S101.

H11-S301 SOCIAL SCIENCE
This is a continuation of the format utilized in Part II 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.
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 ten-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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended;
or
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level and one of Science 100, 101, or 190. Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE
T01-D011 Introductory Mechanics Theory
T01-D012 Introductory Mechanics Practical
T01-D013 Standard Transmissions Theory
T01-D014 Standard Transmissions Overhaul Practical
T01-D015 Rear Axles Theory
T01-D016 Rear Axles Practical
T01-D017 Brake Systems Theory
T01-D018 Brake Systems Practical
T01-D019 Automatic Transmission Theory
T01-D020 Automatic Transmission Practical
T01-D023 Gas Engine Overhaul Theory
T01-D024 Gas Engine Overhaul Practical
T01-D025 Diesel Engine Overhaul Theory
T01-D026 Diesel Engine Overhaul Practical
T01-D027 Diesel Engine Tune-Up Theory
T01-D028 Diesel Engine Tune-Up Practical
T01-D029 Hydraulic Components Theory
T01-D030 Hydraulic Components Practical
T01-D031 Electrical Systems Theory
T01-D032 Electrical Systems Practical
T01-D033 Fuel Systems Theory
T01-D034 Fuel Systems Practical
T01-D036 Industrial Training Practical
T01-D135 Steering Systems Theory
T01-D136 Steering Systems Practical
T01-D137 Suspension & Components Theory
T01-D138 Suspension & Components Practical
T04-G510 Related Gas Welding
T04-M510 Related Machine Shop
T13-M506 Motor Vehicle Mechanic Technician P/E Math
T13-S506 Power Mechanics Science
T14-C504 Communication

COURSE DESCRIPTIONS
T01-D011 INTRODUCTORY MECHANICS THEORY
Demonstrate the ability to identify and use correctly the hand tools utilized in the I.D. mechanics trade.

T01-D012 INTRODUCTORY MECHANICS PRACTICAL
Student will learn first hand the involvement of on-the-job working conditions required in a live repair shop.

T01-D013 STD TRANSMISSIONS THEORY
Construction, principle of operation, synchronizers, splitters and air shift, variable speed diesels, four-wheel-drive transfer case, farm tractor transmission, reversing transmissions, transmission overhaul.

T01-D014 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-D015 REAR AXLES THEORY
Types and principle of operation, single speed H.D. Eaton rear axles, traction equalizers, power dividers, electric and air shift systems.

T01-D016 REAR AXLES PRACTICAL
Overhaul of singlespeed H.D. Eaton rear axles, traction equalizers, power dividers, electric and air shift systems.

T01-D017 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-D018 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-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-D023 GAS ENGINE OVERHAUL THEORY**
Theory of gas engine cycles, types, components, lubrication and cooling systems.

**T01-D024 GAS ENGINE OVERHAUL PRACTICAL**
Repair of gas engine cycles, types, components, lubrication and cooling systems.

**T01-D025 DIESEL ENGINE OVERHAUL THEORY**
Theory of servicing diesel cylinder block assembly, cylinder head and valve train.

**T01-D026 DIESEL ENGINE OVERHAUL PRACTICAL**
Repairs and servicing of diesel cylinder block assembly, cylinder head and valve train.

**T01-D027 DIESEL ENGINE TUNE-UP THEORY**
Fundamentals of mechanical tune-up, electrical tune-up, trouble shooting, dynamometer testing, overhaul and servicing.

**T01-D028 DIESEL ENGINES TUNE-UP PRACTICAL**
The student will be able to diagnose engine noise, set valves fuel, and injector on different types of diesel engines.

**T01-D029 HYDRAULIC COMPONENTS THEORY**
Theory of operation and repair of the more common mobile hydraulic systems.

**T01-D030 HYDRAULIC COMPONENTS PRACTICAL**
Operation and repair of the more common mobile hydraulic systems.

**T01-D031 ELECTRICAL SYSTEMS THEORY**
Fundamentals of storage, testing, charging and care of batteries, DC and AC generators and regulators, ignition systems, transistor units.

**T01-D032 ELECTRICAL SYSTEMS PRACTICAL**
Storage, testing, charging and care of batteries; DC and AC generators and regulators, ignition systems, transistor units.

**T01-D033 FUEL SYSTEMS THEORY**
Fundamentals of carburation types and methods of supercharging, principles of compression ignition engine, and inspection and complete servicing of pumps and nozzles.

**T01-D034 FUEL SYSTEMS PRACTICAL**
Carburation, types and methods of supercharging, principles of compression ignition engine, and inspection and complete servicing of pumps and nozzles.

**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-D135 STEERING SYSTEMS THEORY**
Classroom theory would consist of basic steering geometry, component materials, caster, camber, understanding terminology and trouble shooting front end problems such as pulling, shimming and hoppin.

**T01-D136 STEERING SYSTEMS PRACTICAL**
The student will remove and overhaul steering boxes, as well as doing front end alignment, toe-in, etc.

**T01-D137 SUSPENSION & 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 Hendricks suspension.

**T01-D138 SUSPENSION 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.

**T04-G510 RELATED GAS WELDING**
Safety in setting up and using oxy-acetylene 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 of 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-M510 RELATED MACHINE SHOP**
Basic metals, metal layout and measuring tools, metal working equipment and safety.

**T13-M508 MOTOR VEHICLE MECHANIC TECHNICIAN P/E 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 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-S508 POWER MECHANICS SCIENCE**
Electricity and magnetism, Atomic theory, static electricity, condensers, circuits, batteries, transformers, DC motors, DC and AC generators, hydraulics, pressure Pascal's principle, brakes and brake fluids, kinetic energy, centripetal force, matter, properties of solids, liquids, and gases. Heat —
temperature scales, expansion due to heat, heat transfer, machines — simple machines, work power, gear trains, gear ratios.

T14-C504 COMMUNICATION
A self-paced practical program that develops communications skills from four viewpoints: job-seeker, employee, junior supervisor, small business owner. The program is tailored to fit the needs of individual students and the requirements of the advisory boards.
DISTANCE EDUCATION

PURPOSE
To provide an alternative learning method for those who are not able, or do not wish, to attend classes at the college.

PROGRAM
Distance Education offerings are either correspondence or teleconference courses.

Correspondence courses are available on a continuous basis and students may enroll at any time. Instructional materials are mailed to students. Assignments are sent to the college, marked by an instructor and returned to the student.

Teleconference courses include the same features as correspondence courses, but also employ telephone instruction and telephone tutoring. The instructional component has the instructor and a group of students on the telephone at the same time. The tutorial sessions are done one-to-one. Teleconference courses are offered on a scheduled basis as demand warrants.

ENTRANCE REQUIREMENTS

Correspondence Courses

**Adult Basic Education**

S02-C100 Communications.
Prerequisite: Manitoba Grade 9 or equivalent and the ability to read and write English.

S02-M108 Mathematics
Prerequisite: Manitoba Grade 9 or equivalent and the ability to read and write English.

S02-S100 Physical Science.
Prerequisite: Manitoba Grade 9 or equivalent and the ability to read and write English.

S03-L001 Mathematics (Adult 11A)
Prerequisite: Manitoba Grade 10 or equivalent and the ability to read and write English.

**Business**

B11-A161 Introductory Accounting (Part I)
Prerequisite: Preference will be given to applicants with Mathematics 300 or 301 (or equivalent). Mature student standing also will be considered.

B11-A261 Introductory Accounting (Part II)
Prerequisite: Successful completion of Introductory Accounting (B11-A161) or equivalent.

B11-A361 Introductory Accounting (Part III)
Prerequisite: Successful completion of Introductory Accounting (B11-A261) or equivalent.

Administratively Write - Business Correspondence and Report Writing
Prerequisite: None.

**Social Science**

H11-S101 Social Science (Term I) Introductory Social Science
Prerequisite: High school graduation preferred. Mature standing also will be considered.

H11-S201 Social Science (Term II) Child Growth & Development
Prerequisite: Successful completion of Social Science (H11-S101) or equivalent.

H11-S301 Social Science (Term III) Adult Growth & Development
Prerequisite: Successful completion of Social Science (H11-S201) or equivalent.

**Child Care Studies**

H06-C200 Pre-School Child I
Prerequisite: High school graduation preferred. Mature student standing also will be considered.

H06-C232 Introduction to Curriculum: Creative Experiences in Art
Prerequisite: Successful completion of Pre-School Child I (H06-200).

T14-R624 Observation and Report Writing
Prerequisite: None.

**Teleconference Courses**

**Library Training Program**

S06-D110 Introduction to Library Training
Prerequisite: None.

S06-D111 Basic Library Management
Prerequisite: S06-D110.

S06-D112 Information Services
Prerequisite: S06-D110.

S06-D113 Circulation
Prerequisite: S06-D110.

S06-D114 Cataloguing
Prerequisite: S06-D110.

S06-D116 Collection Development: Reader Guidance and Programming for Children
Prerequisite: S06-D110.

**Management Development**

S06-D102 Effective Supervision
Prerequisite: None.

S06-D101 Human Relations
Prerequisite: None.

**Activities Program**

S06-A002 Introduction to Gerontology
Prerequisite: None.

S06-A004 Communication Skills
Prerequisite: S06-A002.

S06-A005 Program Planning
Prerequisite: S06-A002.
COURSE DESCRIPTIONS

B11-A161 INTRODUCTORY ACCOUNTING (Part I)
Upon successful completion of this course, students should have a thorough knowledge of double-entry bookkeeping, the end-of-period adjusting and closing processes and the preparation of the income statement and balance sheet from a worksheet as they relate to a sole proprietorship. In addition, students should be well versed in accounting for a merchandising firm, cash and accounts receivable. Students will have received an introduction to accounting systems. Students who receive a passing grade in the final examination will be entitled to credit in one of a variety of specified programs.

B11-A261 FINANCIAL ACCOUNTING (Part II)
This course provides the student with an opportunity to acquire a good working knowledge of: accounting for inventory on both a periodic and perpetual basis; the four main methods of pricing inventory on hand; estimating inventories; the costing, depreciation, disposal and exchange of plant assets; accounting for the repair, replacement and betterment of plant assets; accounting for intangible assets; payroll accounting; accounting for partnerships, departmental and responsibility accounting; and accounting for current and long-term liabilities. Students will have received an introduction to the topics of accounting for national resources and the topic of joint costs.

B11-A361 INTRODUCTORY ACCOUNTING (Part III)
This course provides the student with an opportunity to acquire a good working knowledge of: accounting for current and long-term liabilities (unsecured notes, mortgage notes and leases); accounting for establishing and operating a corporation (including various types of stocks and dividends, treasury stock, stockholders’ equity and statement of retained earnings); cost and equity approaches to acquisitions; basic consolidations; accounting for bonds payable and investments in bonds; manufacturing accounting (general accounting system); accounting for segments and departments of a business; responsibility accounting; joint costs.

H06-C200 PRE-SCHOOL CHILD I
This course provides an introduction to concepts of child development. The approach is multidisciplinary, drawing on studies in anthropology, psychology, sociology, biology and medicine. The content is presented in eight modules or parts with corresponding assignments. On completion of all assignments, a final exam must be written. Because the course content corresponds to that of the day and evening programs, successful completion of this course will entitle students to credit in the Child Care Services program.

H06-C230 INTRODUCTION TO CURRICULUM: CREATIVE EXPERIENCES IN ART
This course combines an introduction to curriculum planning with creative experiences in art for pre-school children. Introduction to Curriculum focuses on understanding the relationship between philosophy and curriculum with emphasis on the planning of learning activities in all curriculum areas. Creative Experiences in Art focuses on the importance of creative self-expression for pre-school children with emphasis on planning the art environment and experiences appropriate to the developmental levels of children. The course is presented in a 10-module study guide with corresponding assignments and text readings. On completion of all assignments, a final exam must be written. Because the content of this program duplicates that of the day and evening programs, successful completion of this course will entitle students to credit in the Child Care Services program.

H11-S101 SOCIAL SCIENCE (Term I) INTRODUCTORY SOCIAL SCIENCE
This introductory level course is a multidisciplinary approach to key aspects of human behaviour in contemporary society. It is intended for vocationally-oriented students who should gain greater insight into such topics as motivation, emotion, perception, personality, problem solving, family patterns, societal expectations and interpersonal relationships. Successful completion of this course will entitle students to credit in one of a variety of specified programs.

H11-S201 SOCIAL SCIENCE (Term II) CHILD GROWTH & DEVELOPMENT
This course traces the psychological, social and physical development of the individual from conception to late childhood. Topics include inherited influences, pre-natal factors, principles of growth and development, developmental tasks, environmental effects, major theorists’ views (Piaget, Erickson, Freud), behavioral patterns and need fulfillment. Particular emphasis is placed on the interaction of maturational processes and environmental influences in the development of the child as a unique individual.

H11-S301 SOCIAL SCIENCE (Term III) ADULT GROWTH & DEVELOPMENT
This course is a continuation of the life cycle study from puberty through adolescence, early adulthood, middle age, old age and life ending. Again, emphasis is placed on the interaction between the environment and maturational processes in the ongoing development of the individual. The physical, social and psychological landmarks of each stage of the life cycle are examined in detail.

S02-C100 COMMUNICATIONS
Grammar; usage and mechanics; sentence and paragraph construction; expository paragraph writing.

S02-M108 MATHEMATICS
Development of problem-solving skills using whole numbers, fractions, decimals and percent; ratio and proportion; positive and negative numbers; square root; introductory algebra and geometry.

S02-S100 PHYSICAL SCIENCE
Basic scientific concepts; measurement of forces; temperature; heat; pressure; density; work; electricity; systems of measurements; anatomy and physiology; problem-solving.

S03-L001 MATHEMATICS (Adult 111A)
This course will provide the student with an opportunity to develop a mastery of mathematical concepts equivalent to public school Mathematics 200. The course is designed to give the student an orientation to the applied and technical aspects of mathematics. It includes the use of the calculator and deals with concepts from the following areas: introduction to algebra,
equations, word problems, fractions and graphs, geometry, introduction to trigonometry, solution of right angles, systems of equations and quadratic equations. The student is required to write a final examination. Students require a scientific calculator.

S06-A002 INTRODUCTION TO GERONTOLOGY
This course examines the aging process and covers demography of aging, psycho-social aging, personal and societal attitudes, physical aging, theories of aging, introduction to a variety of facilities and current issues in regard to gerontology.

S06-A004 COMMUNICATION SKILLS
This course examines and develops interpersonal communication skills. The format includes both theory and skill training using role playing, lecturettes, simulations and presentations.

S06-A005 PROGRAM PLANNING
This course will focuses on providing the student with the different concepts and methods involved in accessing, planning, organizing, implementing and evaluating programs within therapeutic and community based settings.

S06-D101 HUMAN RELATIONS
Human Relations is designed to assist individuals and organizations to achieve their goals and objectives through improved relationships. Very often, achieving one's goals and objectives depends on the quality of the relationships one establishes with individuals and organizations. This course concentrates on acquiring techniques to enhance the relationships between individuals and organizations.

S06-D102 EFFECTIVE SUPERVISION
This course helps students develop supervisory/managerial skills. The focus is on the acquisition of knowledge and skills necessary to be an effective supervisor/manager and how these skills can lead to good decision making and conflict resolution.

S06-D110 INTRODUCTION TO LIBRARY TRAINING
This introductory course describes the purpose and format of the Library Training Program. It focuses on the use of the program materials and the basic study skills needed to use the materials. Students will develop a familiarity with basic library terminology and materials and an understanding of the relationships among and between circulation, acquisition and organizational procedures.

S06-D111 BASIC LIBRARY MANAGEMENT
This course is intended to develop the organizational and managerial skills the trainee will need in operating in a small library environment. Students will focus on budgeting, planning, public relations, staffing and the recruitment of volunteers.

S06-D112 INFORMATION SERVICES
This course covers the various aspects of reference service including types of services, the techniques of interviewing the patron, the strategies involved in searching for answers to reference questions, reference ethics, how to use and evaluate reference materials and interlibrary loans.

S06-D113 CIRCULATION
This course covers the various library functions associated with library circulation; patron registration, the charging and discharging of library materials, overdues, holds, closed reserve, shelf reading, inventory, etc. Both manual and automated circulation systems will be discussed, as well as the problems of security and vandalism. As part of the program, the student will develop a Circulation Procedures Manual.

S06-D114 CATALOGUING
This course includes modules on the choice of main and added entries, choice of course headings, assigning call numbers using Dewey Decimal Classification and the basic description of library items and filing.

S06-D116 COLLECTION DEVELOPMENT: READER GUIDANCE AND PROGRAMMING FOR CHILDREN
This course covers the selection and evaluation of fiction and non-fiction materials for children, including non-book materials. Programming and library service to children is covered.

ADMINISTRATIVELY WRITE - BUSINESS CORRESPONDENCE AND REPORT WRITING
By the end of this course, students will be able to organize information for optimum impact; identify primary information and focus readers' attention on it; write business correspondence, short and long reports, short proposals, procedures and instructions and resumes; and perform other business-oriented writing tasks.

T14-R624 OBSERVATION AND REPORT WRITING
By the end of this course, students will be able to observe and record children's activities; write clear, concise short reports, summaries and analyzes; differentiate between and write in both the objective and subjective modes; and write effective dialogue and action description.
ELECTRICAL

PURPOSE
To develop performance skills in house wiring, commercial and industrial wiring and controls, and motor repair.

PROGRAM
Electrical is a ten-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, D.C. and A.C. machines and transformers.

ENTRANCE REQUIREMENTS
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with Mathematics 200* and Science 100 or 101; or
- Adult Basic Education 11A
- Mature Student Admission. Mature student applicants may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of Mathematics 200*, 301, 290 academic, or 911 and one of Science 100, 101, 190. As well, 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, Admissions/Registration for review.

* Mathematics 301 will be accepted in lieu of Mathematics 200.

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 Extension Division, prior to entering skill training.

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.

PROGRAM OUTLINE
Term 1
T11-E001 Fundamentals Of Electricity
T11-E003 D. Machines And Controls
T11-E005 Electrical Laboratory
T11-E007 Residential Blueprint Reading
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-E059 Commercial Blueprint Reading
T11-E061 Commercial Wiring
T11-E062 Solid State
T11-E063 Electric Motor Repair (Theory)
T11-E065 Electric Motor Repair (Practical)
T13-M517 Electrical P/E Math
T13-S717 Lighting Fundamentals
T14-C502 Communication

COURSE DESCRIPTIONS
T11-E001 FUNDAMENTALS OF ELECTRICITY

T11-E003 DC MACHINES AND CONTROLS
Characteristics of DC motors and generators, types, applications and control methods used.

T11-E005 ELECTRICAL LABORATORY
To connect electrical equipment to DC and AC source to prove theories taught in E-001.

T11-E007 RESIDENTIAL BLUEPRINT READING
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 positive attitude in students.
4. To introduce electrical contractors to possible apprentice candidates.
5. To make electrical contractors aware of College programs and students with a view of 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-E059 COMMERCIAL BLUEPRINT READING
Blueprint reading and applied code in commercial type occupancies. Electrical code calculations.
T11-E061 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-E065 ELECTRIC MOTOR REPAIR (PRACTICAL)
Analyzing of motor faults, stripping, rewinding and bearing renewal, if necessary testing.

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-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 luminaries required for a specific work place.

T14-C502 COMMUNICATION
A program similar to T14-C504 but only 20 hours duration.
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
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.

Electrical, Instrumentation, Computer, and Electronic Engineering Technology programs have a common first year of training.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Science 301;
  *Physics 300 is strongly recommended as a more appropriate background for technology.
- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science* as outlined above. Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE

Year 1

Term 1
- ELE-E101 Electric Circuits
- ELE-E102 Electrical Instruments
- ELE-E104 Personal Computers I
- ELE-E106 Drafting
- ELE-M102 Math
- ELE-P109 Physics
- ELE-R100 Report Writing

Term 2
- ELE-E201 Electric Circuits
- ELE-E202 Electrical Instruments
- ELE-E204 Personal Computers II
- ELE-E207 Basic Electronics
- ELE-M202 Calculus

- ELE-P209 Physics
- ELE-R200 Report Writing

Year 2

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

Term 4
- ELE-E401 Electrical Circuits
- ELE-E402 Electrical Measurements
- ELE-E405 Programmable Logic Controllers
- ELE-E406 Electrical Practices & Design
- ELE-E407 Instrumentation Electronics
- ELE-E408 Electrical Machines
- ELE-M402 Calculus

Term 5
- ELE-E501 Electrical Circuits
- ELE-E502 Electrical Measurements
- ELE-E505 Data Acquisition And Communication
- ELE-E506 Electrical Practices & Design
- ELE-E507 Power Electronics
- ELE-E508 Electrical Machines
- ELE-M502 Calculus

Term 6
- ELE-E602 Electrical Measurements
- ELE-E606 Switchgear & Protection
- ELE-E607 Power Electronics
- ELE-E608 Electrical Machines
- ELE-E609 Linear Control Systems
- ELE-R600 Report Writing

COURSE DESCRIPTIONS

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
ELE-E102 Basic Electrical Instruments is an applied Ohm's Law laboratory course for the ELE-E101 Electric Circuits 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 I
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 programs. 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
Continuation of Electric Circuits ELE-E101. Fundamental concepts of sinusoidal voltage and current, time and phasor domains; instantaneous average and effective values. Resistor, inductor and capacitor in AC sinusoidal circuit; impedance and admittance. Problem solving methods for simple AC circuits. Analysis of more complex AC electric circuits using network theorems, network conversions, mesh and nodal methods. Single phase AC power: average, reactive and apparent, power factor; measurement of power in a single phase AC circuit using a wattmeter.

ELE-E202 ELECTRICAL INSTRUMENTS
This course is a continuation of ELE-E102 Basic Electrical Instruments and is the lab course for ELE-E201 Electric Circuits. 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 II
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. The three hours per week of class time is spent in the PC room 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 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% 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 Z80 microprocessor. This course lays the foundation for the more advanced microprocessor training contained in the second year of all Electrical, Electronic, Instrumentation and Computer 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 a 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 - 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 port registers; timer registers; stack operation and interrupt operation.
ELE-E408 ELECTRICAL PRACTICES & 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 I. 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
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 is covered. Operating characteristics of the various machines (i.e. shunt series and compound) are examined in detail.

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 & 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 I. 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; comparators 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-E602 ELECTRICAL MEASUREMENTS
This course consists of 5 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 & 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 fifth term 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-M102 MATH
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.

ELE-M202 CALCULUS

ELE-M302 CALCULUS
Integral calculus. Work with trigonometry identities and equations: reciprocal, pythagorean, angle sum, double and half angle relations. Integrate algebraic, logarithm, exponential, trigonometric quantities. Use substitution and by-part techniques. Find areas, average and RMS values, and work with integrals with current, charge and voltage.

ELE-M402 CALCULUS
Applied Calculus for Electrical Technology - differential equations with emphasis on LaPlace transform methods. Applications include: transients in series circuits and simulation of natural and controlled systems using TUTSIM software.

ELE-M502 CALCULUS
Applied Calculus for Electrical Technology - Fourier series and MathCAD software. Applications include harmonic analysis by integration and software, waveform filtering simulation by FFT on software, AC circuits by matrices on software.

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, significant figures, 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.

ELE-P209 PHYSICS
An intermediate level course in 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.

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, SI, radiant and luminous intensity, response of the eye, illumination and luminous intensity, sources of light and photoelectric effect.

ELE-R100 REPORT WRITING
Streamlining the student's 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.
ELECTRONIC ENGINEERING TECHNOLOGY

PURPOSE
To develop the knowledge and skills required to test, repair and develop a wide variety of electronic equipment.

PROGRAM
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.

Electronic, Instrumentation, Electrical and Computer Engineering Technology programs have a common first year of training.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Science 301;
  * Physics 300 is strongly recommended as a more appropriate background for technology.

  or

- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science* as outlined above. Mature students must also 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 Admissions/Registration for review.

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. Some graduates who have acquired substantial experience now work as plant supervisors.

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

PROGRAM OUTLINE

Year 1

Term 1
ELE-E101 Electric Circuits
ELE-E102 Electrical Instruments
ELE-E104 Personal Computers I
ELE-E106 Drafting
ELE-M102 Math
ELE-P109 Physics
ELE-R100 Report Writing

Term 2
ELE-E201 Electric Circuits
ELE-E202 Electrical Instruments
ELE-E204 Personal Computers II
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 & Fields
ELE-E515 Microprocessors
ELE-E517 Electronic Devices
ELE-E519 Linear Control Systems
ELE-M512 Calculus
ELE-M513 Statistics & Quality Control

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

COURSE DESCRIPTIONS

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
ELE-E102 Basic Electrical Instruments is an applied Ohm's Law Laboratory course for the ELE-E101 Electric Circuits 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, VTM, DC Bridge, and potentiometer.

ELE-E104 PERSONAL COMPUTERS
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 programs. 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
Continuation of Electric Circuits ELE-E101. Fundamental concepts of sinusoidal voltage and current, time and phasor domains; instantaneous average and effective values. Resistor, inductor and capacitor in AC sinusoidal circuit; impedance and admittance. Problem solving methods for simple AC circuits. Analysis of more complex AC electric circuits using network theorems, network conversions, mesh and nodal methods. Single phase AC power: average, reactive and apparent, power factor; measurement of power in a single phase AC circuit using a wattmeter.

ELE-E202 ELECTRICAL INSTRUMENTS
This course is a continuation of ELE-E102 Basic Electrical Instruments and is the lab course for ELE-E201 Electric Circuits. 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 II
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. The three hours per week of formal class time is spent in the PC room 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 Technology areas.

ELE-E207 BASIC ELECTRONICS
This course is a first course in Solid State electronics. Upon the completion of this program 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% 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 Z80 microprocessor. This course lays the foundation for the more advanced microprocessor training contained in the second year of all Electrical, Electronic, Instrumentation and Computer 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 behaviour of small signal amplifiers. It is primarily a lecture and lab related course.

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.

ELE-E415 MICROPROCESSORS
This is an application oriented course based on the Low Power Schottky TTL and CMOS families, the Z80 CPU system architecture and Z80 peripheral devices. The course is a continuation of the Introductory Logic and Introductory Microprocessor course of Term III and is intended as a preparatory course for the Digital courses in Terms 5 and 6. Approximately 50% 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-wrapping 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 Technology discipline. The course
consists of six hours of instruction per week, split between labs and lecture. The course discusses the frequency response and design of circuits using basic active devices, such as transistors and FET's. The course also discusses feedback theory in preamplifiers as well as the characteristics and applications of the operational amplifier.

**ELE-E511 HIGH FREQUENCY CIRCUITS**
High Frequency Circuits is a course on the theory and practical aspects of electronic communication fundamentals.

**ELE-E512 CIRCUITS AND FIELDS**
Electronic Circuits and Fields provide a strong background to the technologist on the fundamentals of transmission lines and waveguides.

**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 Z80 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. 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-E611 DATA COMMUNICATIONS**
Data Communications focuses on advanced electronic communication techniques with an emphasis on modern digital communications systems.

**ELE-E615 DIGITAL CONTROL SYSTEMS**
This is a project-oriented course based on the Z80 CPU and the Z80 peripheral devices. Each project group must submit a proposal requesting department approval of labour and material cost that may be incurred during the development and construction of a Z80 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 class instructor will act as monitor and counselor 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 with the Report Writing course, must be submitted on completion of the project.

**ELE-E615 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 that was introduced in the fourth term.

**ELE-E617 ELECTRONIC DEVICES**
This course is a continuation of Term 5 Electronic Devices. 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-M102 MATH**
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.

**ELE-M202 CALCULUS**

**ELE-M302 CALCULUS**
Integral Calculus. Work with trigonometry identities and equations: reciprocal, pythagorean, angle sum, double and half angle relations. Integrate algebraic, logarithmic, exponential, trigonometric quantities. Use substitution and by-part techniques. Find areas, average and RMS values, and work with integrals with current, charge and voltage.

**ELE-M412 CALCULUS**
Applied Calculus for Electronic Technology - McLaurin and Taylor series, differential equations with emphasis on LaPlace transform methods. Applications include: computation of trigonometric and logarithmic functions by series, transients in series circuits and simulation of natural and controlled systems using TUTSIM software.

**ELE-M512 CALCULUS**
Applied Calculus for Electronic Technology - Fourier series and MathCAD software. Applications include harmonic analysis by integration and software, waveform filtering simulation by FFT on software, AC circuits by matrices on software.

**ELE-M513 STATISTICS & QUALITY CONTROL**
The course is an introduction to fundamental concepts of
quality control. Sufficient theory is presented to ensure a sound understanding of the basic principles. Probability and statistical techniques are reduced to simple mathematics or presented in the form of tables and charts.

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, significant figures, 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.

ELE-P209 PHYSICS
An intermediate level course in 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.

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., radiant and luminous intensity, response of the eye, illumination and luminous intensity, sources of light and photoelectric effect.

ELE-R100 REPORT WRITING
Streamlining the student's 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-R610 REPORT WRITING
Review of report writing, oral presentations and job search techniques; planning, writing and presenting a formal technical report.
ENGINEERING DESIGN AND DRAFTING TECHNOLOGY

PURPOSE
To develop the knowledge and skills required in the field of architectural and mechanical design and drafting.

PROGRAM
Engineering Design and Drafting Technology is a two-year diploma program with a September entry date. The program is designed to develop skills in the design and preparation of working drawings for the presentation of technical information.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300 or Physical Science 301. * Physics 300 is strongly recommended as a more appropriate background for technology;
- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science* as outlined above. Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE
Year 1
Term 1
CIV-C162 Engineering Graphics
CIV-C165 Mechanics
CIV-C166 Surveying
CIV-M163 Introduction To Application Software
CIV-M169 Mathematics
CIV-R167 Communications

Term 2
CIV-D261 Architectural Technology I
CIV-D262 Architectural Environment I
CIV-D263 Manufacturing Technology I
CIV-D264 Building Science I
CIV-D265 Strength Of Materials
CIV-D266 Manufacturing Materials & Processes
CIV-M268 Calculus

Term 3
CIV-D361 Architectural Technology II
CIV-D362 Architectural Environment II
CIV-D363 Manufacturing Technology II
CIV-D364 Building Science II
CIV-D365 Theory Of Structures
CIV-D368 Computer Assist Drafting I

Year 2
Term 4
CIV-D461 Architectural Technology III
CIV-D463 Manufacturing Technology III
CIV-D464 Mechanical Systems I
CIV-D465 Structural Design I
CIV-D466 Materials & Specifications I
CIV-D468 Computer Assist Drafting II

Term 5
CIV-D561 Architectural Technology IV
CIV-D564 Mechanical Systems II
CIV-D565 Structural Design II
CIV-D566 Construction Systems
CIV-D568 Computer Assist Drafting III
CIV-R568 Specifications & Reports

Term 6
CIV-D661 Architectural - Final
CIV-D664 Mechanical Systems III
CIV-D665 Structural Design III
CIV-D666 Materials & Specifications II
CIV-D668 Job Control & Estimating
CIV-R667 Report Writing

COURSE DESCRIPTIONS
CIV-C162 ENGINEERING GRAPHICS
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 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-D261 ARCHITECTURAL TECHNOLOGY I
Architectural Technology I is an introduction to architectural methods. It commences with a series of exercises designed to assist in the practice of lettering and linework. The term project is concerned with the development of an oversized double garage utilizing the use of a reinforced concrete slab on grade and single wood framing techniques.

CIV-D262 ARCHITECTURAL ENVIRONMENT I
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. The course material is mainly theoretical in nature and is considered as building science in scope; colour theory is also introduced in this course.
CIV-D263 MANUFACTURING TECHNOLOGY I
This course has the function of providing the student with an overview of drawing office practices; standard practices as applied to manufacturing standard components including fasteners, gears, cams, linkages and other machine elements; weldments; basic machines and their applications. The course comprises a series of lectures, case studies and production of working drawings for machined and welded components.

CIV-D264 BUILDING SCIENCE I
This is an introductory course planned to provide the student with a review of basic principles, and occupant requirements for controlled environments; with an understanding of the interplay through building envelopes by both interior and exterior environments. The course comprises a series of lectures with the student required to perform related calculations, probability studies and case studies.

CIV-D265 STRENGTH OF MATERIALS
The first part of the course deals with problems relating to support and pin reactions in frames and trusses. The second part deals with stress and deformation of materials.

CIV-D266 MANUFACTURING MATERIALS & PROCESS
This course provides the student with an introduction to basic metallurgy; qualities and properties of materials; production of basic materials; alloys; heat treatment processes; selection of materials for specific purposes; plastics; other non-metallic materials; material manipulation; manufacturing machines, their form and function; measurement methods; and surface treatments. The course comprises a series of lectures, case studies and the preparation of a report on new materials and/or processes.

CIV-D361 ARCHITECTURAL TECHNOLOGY II
Architectural Technology II is concerned mainly with light wood frame construction employed in the single family residence. The selected architectural project introduces the student to framing details, foundation details, window and door systems, roof truss system including a series of related residential topics.

CIV-D362 ARCHITECTURAL ENVIRONMENT II
The principles established in course CIV D262 Architectural Environment I are further explored in Architectural Environment II wherein engineering calculations and case studies are employed as a means of applying the previously studied theory. Selected term papers are required to permit the integration of the theory and engineering calculations. The major topics being sound control (acoustics) electrical illumination and Colour Theory.

CIV-D363 MANUFACTURING TECHNOLOGY II
In this course the student is presented with data on basic machine design. This includes basic jig and fixture design applications; transmission design for belt, chain and gear drives; the utilization of couplings, clutches, brakes, speed reducers and bearings through the selection of components from manufacturers catalogues and application to given design problems. The student is expected to produce all related calculations and working drawings of solutions to design problems and case studies.

CIV-D364 BUILDING SCIENCE II
This course is an introduction to the principles for evaluating air conditioning systems; the requirements for a HVAC system; building function requirements; insulation, vapour barriers and air sealing methods; air conditioning load determination methods. The course comprises a series of lectures, case studies and determination of HVAC loads.

CIV-D365 THEORY OF STRUCTURES
This course consists of: defining structural loads, applying structural loads and procedures to beams as per code, calculating degree of indeterminacy for beams, analyzing indeterminate beams using Three Moment Equation, Concrete Beam Coefficients, and Moment Distribution, recording results on Shear Force and Bending Moment Diagrams, calculating deflections.

CIV-D368 COMPUTER ASSIST DRAFTING I
Introduction to graphic computers and computer-aided-drafting, involving Geometric entities, input modes, coordinate types, drawing creation and manipulation, dimensioning, cell libraries (creation and usage), layers, bookkeeping functions, and output (plotting). Production of drawings using Calcomp (Terak) hardware, and a software package, named MINN-DRAFT.

CIV-D461 ARCHITECTURAL TECHNOLOGY III
This course commences with an introductory perspective drawing exercise using the single family residence designed in Architectural Technology II. Aspects of basic shade and shadow techniques to create depth of field are employed in producing a rendered perspective of the residence. The second part of the course deals with an introduction to load bearing masonry wall systems and light industrial steel roof system utilized in typical single storey warehouse structures. The project involves the production of basic working drawings within an architectural context.

CIV-D463 MANUFACTURING TECHNOLOGY III
This course introduces the student to the materials, equipment and systems commonly used in industrial processing plants, such as pipes, valves, pumps, control devices and related components. The student is introduced to standard drawing office practices for the production of both multi-view and isometric working drawings of given processing plants. The student is further introduced to hydraulic and pneumatic systems and components. From the given data the student will produce schematic drawings of hydraulic designs utilizing standardized flow systems. A report on the operation and sequencing of the designed system must accompany the drawings.

CIV-D464 MECHANICAL SYSTEMS I
This course is an introduction to the equipment and systems used in creating interior environments within the wide range of structures already constructed and being developed. It covers the relationship of the mechanical-architectural interface, fuels: all-air, all-water, and chilled water systems, refrigeration theory and related equipment; heat recovery systems and alternative energy systems. The course comprises lectures and case studies.
CIV-D465 STRUCTURAL DESIGN I
Timber design.

CIV-D466 MATERIALS & SPECIFICATIONS I
This is an introductory course concerned with two major topics; Specifications and Concrete Materials Properties. Specification introduction deals with such topics as contract law, liabilities and contracts, specification types and construction participants while Concrete Materials Properties deals with the manufacturing of cements, types of cements, factors affecting the properties of concrete, placing, finishing and curing of concrete plus a number of related practice procedures.

CIV-D468 COMPUTER ASSIST DRAFTING II
The first half of this trimester 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 software, named Design Pro. This will include use of menu options, directories, drafting mode, user work area, digitizers, function codes, grid and scale, keyboard coordinate entries, graphics commands, layers and pens, measures and drafting aids, introduction to 3-D, text editor, editing drawings, figures (cells), text, dimensioning and plotting. Production of drawings related to engineering disciplines using Calcomp (Terak) hardware.

CIV-D561 ARCHITECTURAL TECHNOLOGY IV
This course concerns the planning and design of a selected project, limited in size and scope to allow full development of design and working drawings in an architectural content. The project permits the incorporation of construction materials selection and implementation, specifically in detail development. The selected project usually is a highrise structure; multiple residential, commercial or mixed use occupancy.

CIV-D564 MECHANICAL SYSTEMS II
In this course the student is introduced to the design of water supply and distribution systems and equipment, waste and sewage handling systems and equipment. The course requires the student to develop suitable designs for given structures, including both calculated data and working drawings. The student must include within the design project compliance with the Manitoba Building and plumbing codes.

CIV-D565 STRUCTURAL DESIGN II
Steel design.

CIV-D566 CONSTRUCTION SYSTEMS
This is an introductory course concerned mainly with two major topics; formwork practice and reinforced concrete systems. The course concerns practices, principles and systems involved for forming of foundation walls, columns, girders, beams and flat slab work in the first instance, expanding into formwork required and systems employed for multistorey, heavy construction, flat plate, wallfle and rib systems, etc.

CIV-D568 COMPUTER ASSIST DRAFTING III
This topic, during this third trimester of this course, will involve the student in using Computer Assisted Design and Drafting methods in the production of a variety of engineering drawings.

CIV-D661 ARCHITECTURAL - FINAL.
The final architectural project involves the development of a building program in response to general directives. Planning methods are explored with use of bubble and functional relationship diagrams, leading to plan layouts. Design drawings are produced in respect to the developed program, followed by framing layouts and working drawings.

CIV-D664 MECHANICAL SYSTEMS III
In this course the student will be introduced to the design of HVAC systems. The course includes the utilization of all relevant standards and building codes in the development of HVAC systems for a given building. The student will complete the determination of all loads, select the necessary equipment and produce a complete set of working drawings for a given building.

CIV-D665 STRUCTURAL DESIGN III
Reinforcement Concrete Design.

CIV-D666 MATERIALS & SPECIFICATIONS II
This course is a continuation of CIV-D466 in respect to specifications and materials studies. The study of Specification writing and application is completed during this course and is applied directly to the final architectural project which is developed in course CIV-D661. The study of the properties and application of building materials such as concrete, masonry units, plaster, drywall systems, partition systems, finishing materials, ceiling systems and other materials and systems as per the program outline.

CIV-D668 JOB CONTROL & ESTIMATING
Job Control 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. Estimating consists of the pricing of material, labour and indirect costs to determine the final cost of constructing a building.

CIV-M163 INTRODUCTION TO APPLICATION SOFTWARE
Through hands-on experience, this course provides an introduction to MS-DOS commands, WordPerfect word processing, SuperCalc3 spreadsheet work, and DBASE III PLUS data base manipulation. The course setting is in a networked IBM-PC lab.

CIV-M169 MATHEMATICS
The course is basically a review of high school mathematics with emphasis being on trigonometry, solution of algebraic equations, exponents and logarithms.

CIV-M268 CALCULUS
Explicit and implicit functions of a single variable, limits, and derivative concept; differentiation of algebraic functions, trigonometric functions, inverse trigonometric functions, exponential and logarithmic functions; applications of the derivative; introduction to integration.

CIV-R167 COMMUNICATIONS
The course covers the organizing and writing of letter, memorandums, and reports on technical courses.

CIV-R566 SPECIFICATIONS & REPORTS
The course covers the writing of technical instructions, proposals, and long investigation reports, the presentation of oral briefings and the preparation of job search documentation.
CIV-R667 REPORT WRITING
The course helps the student to polish the communication skills gained in Terms 1 and 5. Emphasis is on producing the long report and giving oral presentation.
ENGLISH AS A SECOND LANGUAGE (ESL)

PURPOSE
To develop practical English speaking, listening, reading and writing skills.

COURSE
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 six 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, reading and spelling laboratories.

EMPLOYMENT OPPORTUNITIES
Many former students have found that ESL courses have opened up new employment opportunities for them. Others, who have successfully completed the Advanced course, 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.

ENTRANCE REQUIREMENTS
All applicants will be tested to determine placement at an appropriate level of language development.

COURSE OUTLINES
Basic Level (Levels 1-5)
S05-E422 Writing Skills
S05-E423 Reading Skills
S05-E424 Grammar Skills
S05-E425 Speaking & Listening Skills

Intermediate Level (Level 6)
S05-E426 Listening Skills
S05-E427 Speaking Skills
S05-E428 Reading & Vocabulary Skills
S05-E429 Spelling Skills
S05-E430 Grammar Skills
S05-E431 Writing Skills
S05-E432 Settlement Information
S05-E433 Occupational Orientation

Advanced Level (Level 7)
S05-E400 Listening Skills
S05-E401 Reading & Vocabulary Skills
S05-E402 Spelling, Pronunciation & Dictation Skills
S05-E403 Conversation Skills
S05-E404 Grammar Skills
S05-E405 Writing Skills
S05-E406 Preparation for T.O.E.F.L.
S05-E420 Occupational Orientation
S05-E421 Settlement Information

SUBJECT DESCRIPTIONS
Basic Level
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 or she will be able to perform practical reading tasks which include reading wanted 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 or 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 fall 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; and 9) transportation/weather.

Intermediate Level
S05-E426 LISTENING SKILLS
The student will be able to understand news broadcasts, short lectures, and taped passages. He or she will demonstrate understanding by paraphrasing and/or answering questions based on what has been heard.

S05-E427 SPEAKING SKILLS
The student will be able to use idioms appropriately, make a presentation to the class, and debate controversial issues.

S05-E428 READING AND VOCABULARY SKILLS
The student's reading and vocabulary levels will be raised by at least two grade levels above the level at which he or she started.

S05-E429 SPELLING SKILLS
The student will be able to spell correctly, many commonly-used words in the English language.

S05-E430 GRAMMAR SKILLS
The student will be able to identify correct grammar usage and adapt formal grammar skills to communicative and writing situations.

S05-E431 WRITING SKILLS
The student will be able to write simple, compound, and complex sentences. He or she will be able to demonstrate his or her ability to use these sentences in a paragraph.

S05-E432 SETTLEMENT INFORMATION
The student will discuss, participate in, and explore various activities related to the current settlement needs of individual students.

S05-E433 OCCUPATIONAL ORIENTATION
The student will be able to accurately complete an application form and write a standard resume and covering letter. He or she will be able to apply for a job and effectively participate in a selection interview.
Advanced Level
S05-E400 LISTENING SKILLS
The student will be able to understand a radio news report, a short lecture or a passage that is read to him or her. He or she will demonstrate understanding by answering (with at least 80% accuracy) questions based on what has been heard.

S05-E401 READING & VOCABULARY SKILLS
The student’s reading and vocabulary levels will be raised by at least two grade levels above the level at which he or she started.

S05-E402 SPELLING PRONUNCIATION AND DICTATION SKILLS
The student will be able to spell correctly the most commonly-used words in the English language (approximately 3000 words). The student will be able to speak in a way that is understandable to a listener whose first language is English. The student will be able to write down (with few errors) a short passage that is dictated to him or her.

S05-E403 CONVERSATION SKILLS
The student will demonstrate ability to carry on a conversation by discussing and answering questions about a news item or other piece of information that he or she has just listened to.

S05-E404 GRAMMAR
The student’s understanding of English grammar will be sufficient for him or her to achieve the required score on the test of English as a foreign language (T.O.E.F.L.). He or she will demonstrate ability to use correct English constructions in written work.

S05-E405 WRITING SKILLS
The student will be able to write expository paragraphs. The facts and/or ideas will be presented in logical order and will be expressed in correct sentences. Punctuation marks and capital letters will be used correctly.

S05-E406 PREPARATION FOR T.O.E.F.L.
The student will be able to achieve the required score on the Test of English as a Foreign Language.

S05-E420 OCCUPATIONAL ORIENTATION
The student will learn vocabulary applicable to employment in general and to his or her chosen occupation; study vocabulary, abbreviations and types of information found in want ads; study application forms and appropriate ways of completing the forms; study various types of resumes and specific uses of each; produce a usable resume; produce a cover letter which can be adapted to accompany the resume during job search; study various interview skills/techniques; listen to various employment-related topics such as Human Rights/Unemployment Insurance; answer comprehensive questions about the various topics in Human Rights/Unemployment Insurance.

S05-E421 SETTLEMENT INFORMATION
Discuss participation in and explore various topics, concerns, and activities related to current settlement needs of individual students.

For further information please contact the Language Training Centre at 957-1026.
HEALTH RECORD TECHNICIAN

PURPOSE
To develop the knowledge and skills needed for the collection, retention, analysis and dissemination of health-care information required for patient care, 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 for the collection, analysis and dissemination of health information and has been fully accredited by the Canadian College of Health Record Administrators.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with one of English 300 or 301 and at least one of Biology 300 or 301 or Chemistry 300 or 301; 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 may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have credits in English and science, as noted in (A) above. Mature students must also complete entrance requirements (B) and (C) 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 Admissions/Registration for review.

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 hospital health record departments. Some graduates work in clinics, paramedical and government agencies. Others are employed as sole-charge technicians in rural health care facilities.

Graduates are eligible to write the national certification exam of the Canadian College of Health Record Administrators.

B12-L367 Legal Aspects Of Health Records

TERM 3
B13-M610 Organization And Management
B13-R704 Statistics
B15-S310 Microcomputer Database
B19-C783 Medical Coding II
B19-E753 Communications III
B19-N751 Medical Transcription
B19-P303 Hospital Practicum

COURSE DESCRIPTIONS
B12-L367 LEGAL ASPECTS OF HEALTH RECORDS
An introduction to the legal system with emphasis on the importance of medical records as a legal document and the legal procedures involved in court disclosure of medical records.

B13-M610 ORGANIZATION AND MANAGEMENT
An introduction to Management Principles for supervisors and staff in health care delivery system and descriptive study of the structure of the health care system.

B13-R704 STATISTICS
Prerequisite: A fundamental knowledge of basic arithmetic. A basic electronic calculator with memory and square root is recommended. The objectives are to focus on the principles of statistics as they apply and are applied to the medical sciences. Statistics and health sciences go together very well: (1) identifying the problem and (2) deciding on a course of action. Medical records form a part of the first step - data collection. The Health Record Technician can assist medical research staff and administration in their effort to evaluate, research and plan. The intent is to provide a basic knowledge of statistics for this purpose.

B13-S504 PSYCHOLOGY
An introduction to humanistic psychology allows the student through various exercises and group participation to use his own insights and experiences to discover and validate these introductory concepts. The application of humanistic psychology to personal, interpersonal and organizational behavior.

B15-S310 MICROCOMPUTER DATABASE
This course is designed to familiarize students with the basic principles of information processing and the database package - RBASE 5000. * Instruction is 6 hours/week; 1 hour of computer literacy, 5 hours of data base - hands-on the IBM PC. The students study and follow through the development of a data base as illustrated in the text book. As they are progressing they are developing a Medical database as assignments.

B18-W535 WORD PROCESSING - PRACTICAL
This course is designed to familiarize the student with the basic operations of word processing on a personal computer. The following topics are covered: keyboarding, formatting, editing, printing of one-page and multiple-page documents and merging forms with variables.
B19-C762 MEDICAL CODING I
An introduction to coding principles and the various systems for the classifications of diseases, conditions and operations in health care institutions and agencies. Special emphasis is placed on ICD-9CM coding which is currently used by all hospitals in Manitoba.

B19-C763 MEDICAL CODING II
A continuation of B19-C762 designed to develop proficiency in ICD-9CM coding. The value and content of indices, registers and abstracting of health information is included.

B19-E751 COMMUNICATIONS I
This course is designed to provide a foundation in the fundamentals of grammar, vocabulary enrichments and spelling.

B19-E752 COMMUNICATIONS II
This course is designed to provide a foundation in the fundamentals of punctuation; the use of capitals, abbreviations, and figures; proper sentence and paragraph writing; effective job applications; and the proper organization preparation of research materials in report form. It will also provide further spelling and vocabulary enrichment.

B19-E753 COMMUNICATIONS III
Application of learned theory with part emphasis on letter writing, memos, job descriptions and informal reports including the practicum essay.

B19-M751 MEDICAL TERMINOLOGY I
Prerequisite: The ability of spell accurately. An introduction to the technical language of medical science through the study of combining forms, roots, stems, prefixes, suffixes, derivatives, synonyms, homonyms, common disease terms and specialty classifications.

B19-M752 MEDICAL TERMINOLOGY II
A continuation of the technical language of medicine through the study of abbreviations, laboratory tests, drugs and drug classifications and the study of diseases relevant to each system of the body.

B19-N751 MEDICAL TRANSCRIPTION
A course designed to develop the practical skills necessary for accuracy and speed in the transcription of dictated medical and surgical reports and to gain knowledge of the format and procedures utilized in health care facilities. Prerequisites: B19-M751, H03-L101, B19-T751, B19-E751.

B19-R741 HEALTH RECORDS SCIENCE I
An introduction to the development of the health records field and study of the fundamental standards for health records, numbering and filling systems, analysis and maintenance of health records, indices and retrieval of records, microfilming, retention of health records. Emphasis on the professional organizations in health records, especially the Canadian Health Record Association (CHRA) and the Code of Practice for health records personnel.

B19-R752 HEALTH RECORDS SCIENCE II
The compilation of health statistics and computation of ratios; emphasis on confidentiality and legal aspects of medical records; the problem-oriented medical record; medical audit. Prerequisites: B19-R741, B19-M751, H03-L101, B13-R704.

H03-L113 ANATOMY AND PHYSIOLOGY I
Introduction to Human Anatomy and Physiology. The study of the individual cell and organisms, basic primary tissue and structure. The study of the skeleton, skeletal muscles, their relation to movement, posture and function.

H03-L213 ANATOMY AND PHYSIOLOGY II
The cardiovascular system, structure and function. The lymphatic system and its relation to immunity. The respiratory system, and gaseous exchange. The nervous system and the brain structure and function. The special senses.
HOTEL AND RESTAURANT ADMINISTRATION

PURPOSE
To develop a potential for hotel and restaurant management through the study of hospitality-related courses, practical lab training and off-campus work experience.

PROGRAM
Hotel and Restaurant Administration is a 21-month 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 both its cooperative education component and its competency-based-learning (CBL) format.

Cooperative 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 six continuous terms: four on campus, and two employment terms.

All program skill areas have been identified by the hospitality industry in terms of required competencies, and curriculum has been designed to achieve these competencies.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation). English 300 or 301 and Mathematics 300 or 301 are strongly recommended (Many students have found Accounting 202 and 302 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 Admissions Office);

  and

C - an information session with the Hotel and Restaurant Administration selection committee;

  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 students may submit either the Manitoba Education and Training Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits. Specific credits in English and mathematics as outlined in (A) above are recommended. Mature students must also meet entrance requirements (B), (C), and (D) and be 20 years of age or before September 30 in the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

This is a special selection program. The committee interviews those applicants who have successfully completed entrance requirements (A) and (B). The committee selects applicants who enjoy working with people, have a genuine interest in hospitality industry careers, and have a basic understanding of the type of work involved. Some related industry work experience is a definite asset.

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-H662 Bartending Skills
B09-0A00 Demonstrate Basic Food Preparation Skills
  B09-0A01 Explain Basic Sanitation Principles & Procedures
  B09-0A02 Explain Basic Kitchen Safety Rules & Procedures
  B09-0A03 Explain Safe & Efficient Use Of Kitchen Equipment
  B09-0A04 Use Kitchen Knives Safely & Efficiently
  B09-0A05 Explain Std. Recipes, Measure Proc. & Conversions
B09-0A06 Prepare Stocks
B09-0A07 Prepare Soups
B09-0A08 Prepare Sauces
B09-0A09 Cook Meat, Poultry & Fish
B09-0A10 Cook Vegetables, Rice & Pasta
B09-0A11 Prepare Salads & Dressings

B09-OB00 Serve Lunch, Dinner & Set Menus In The Dining Room
  B09-OB01 Explain Dining Room Sanitation Principles
  B09-OB02 Explain Dining Room Safety Procedures
  B09-OB03 Post Customer Order On Electronic Cash Register
  B09-OB04 Prepare For Service
  B09-OB05 Desc. Types Of D.R. Service & Serve Customers

B09-OC00 Demonstrate Basic Front Office Skills
  B09-OC01 Describe Guest Services
  B09-OC03 Explain Room Management & Control
  B09-OC04 Describe Guest Reception
  B09-OC05 Post Charges Using An Electronic Cash Register
  B09-OC06 Describe Guest Check-Out, City Ledger & Cash Ctrl
B09-OC07 Explain Control/Record Room Reserv & Occupancy
B09-OC08 Describe Night Audit Proc. & Front Office Reports
  B09-0H10 Explain Function & Admin Of Housekeeping Dept
  B09-0H02 Explain Linen Room As Communication/Control Ctr
B09-0H03 Describe Cleaning & Maintenance Services
B09-0H04 Describe Types & Cleaning Of Linen Bedding
B09-0H05 Describe Types/Cleaning Of Floors, Walls & Windows
B09-0H06 Explain Staff Recru.& Train, Supervision & Eval.

B09-OK00 Demonstrate Word Processing Skills
B09-0N00 Operate Accounting System
  B09-0N01 Record Basic Acctg. Entries, Take Trial Balance
  B09-0N02 Prepare Period End Entries & Trial Balances
  B09-0N03 Work Thru Acctg. Cycle For Non-Merchandising Firm
  B09-0N04 Work Thru Acctg. Cycle For Merchandising Firm
Please note that because the competencies listed above are self-explanatory, no course descriptions are required for those skill areas. Descriptions are included only for the course numbers listed below.

B09-H621 INTRODUCTION TO SPREADSHEETS
An introductory course on how to use electronic spreadsheets and their application to the hospitality industry.

B09-H655 ADVANCED FOODS AND SERVICE
This section is divided into two parts. Section one, provides for experiences in Flambe preparation, serving foods French style, serving and presenting wines and for the making of a variety of drinks. Section two, provides for experiences in the preparation of a variety of typical gourmet foods and for developing greater knowledge in kitchen operations.

B09-0A00 DEMONSTRATE BASIC FOOD PREPARATION SKILLS
This consists of compacts 1 - 12.

B09-0A01 EXPLAIN BASIC SANITATION PRINCIPLES & PROCEDURES
Explain basic sanitation principles and procedures.

B09-0A02 EXPLAIN BASIC KITCHEN SAFETY RULES & PROCEDURES
Explain basic kitchen safety rules and procedures.

B09-0A03 EXPLAIN SAFE & EFFICIENT USE OF KITCHEN EQUIPMENT
Explain the safe and efficient use of standard commercial kitchen equipment.

B09-0A04 USE KITCHEN KNIVES SAFELY & EFFICIENTLY
Must be able to, using a French knife, perform basic cutting and sharpening techniques safely and efficiently.

B09-0A05 EXPLAIN STD. RECIPES, MEASURE PROC. & CONVERSIONS
Explain standardized recipes, measurement procedures and calculate conversions.

B09-0A06 PREPARE STOCKS
Explain the preparation of basic stocks.

B09-0A07 PREPARE SOUPS
Must be able to, provided with recipes, prepare a variety of soups and apply appropriate garnishes.

B09-0A08 PREPARE SAUCES
Must be able to, provided with recipes, prepare Brown, Veloute, Bechamel, Tomato and Hollandaise Sauces and four small sauces (as specified by your instructor).

B09-0A09 COOK MEAT, POULTRY & FISH
Must be able to cook meat, poultry and fish 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.

B09-0A10 COOK VEGETABLES, RICE & PASTA
Must be able to, based on the classification of vegetables and the types of rice and pasta, explain, select and apply appropriate cooking methods with attention to sanitation principles and safety procedures.

B09-0A11 PREPARE SALADS & 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.

B09-0S02 BASIC REQUIREMENTS OF EFFECTIVE ADVERTISING
Explain requirements of effective advertising and its role in promotion strategy.

B09-0S03 REQUIREMENTS OF EFFECTIVE PR / PROMOTION STRATEGY
Explain requirements of effective P.R. and its role in promotion strategy.

B09-0S04 REQUIREMENTS OF EFFECTIVE SALES MANAGEMENT
Explain requirements of effective sales management and role of personal selling in promotion strategy.

B16-E161 BUSINESS COMMUNICATIONS
This is an advanced course in the effective use of language with special emphasis on the preparation, writing and editing of all types of business correspondence including letters, memorandums and short reports. The emphasis is on business letters with a human relations approach.
INDUSTRIAL ARTS TEACHER EDUCATION

PURPOSE
To develop teaching and technical skills in the industrial technologies.

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 are used in selecting students:

1. satisfactory standing in 20 credits which satisfy the Manitoba Education and Training description of the high school program, with
2. five of these credits held at the 3XY level, so that these five include,
   a) a standing in English 300
   b) a standing in Mathematics 300 or 301
   c) a minimum of three courses at the 300 level.
   d) a 60% average in 300 level courses.

Anyone who does not meet these education requirements, but is 21 years of age on or before September 30 in the year of registration, may apply as a mature student.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits. Mature students are strongly advised to include formal program work in mathematics and English at the 300 or 301 level as part of their preparation for college. Applicants applying for admission as 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 Department Head, Teacher Education, for review.

EMPLOYMENT POTENTIAL
Graduates are eligible to teach in the junior high and secondary schools in Manitoba. The majority of job opportunities are available in rural areas of the province.

PROGRAM OUTLINE
First Year - Red River Community College
B23-C102 Construction Introduction
B23-E105 General Teaching Methods I
B23-G102 Graphic Communications - Introduction
B23-M102 Manufacturing - Introduction
B23-P102 Power & Energy - Introduction
B23-T102 Seminar & School Experience
B23-W102 Cooperative Business/Industrial Education

Second Year - University of Manitoba
63.202 Communication
43.202 Psychology of Learning & Instruction

81.215 Industrial Education in Technology
   * Minor Area
   * Minor Area
Select one 3 credit hour Foundations Program
37.101 / 37.102 / 37.103
Select one 3 credit hour Administration Program
81.305 Topics in Industrial Education

Third Year - Red River Community College
B22-E204 Educational Testing & Evaluation
B23-C202 Construction-Advanced
B23-E103 Audio Visual Education
B23-E201 Organizing Industrial Education Facilities
B23-E203 Program Development in Education
B23-E205 General Teaching Methods II
B23-G202 Graphic Communications - Advanced
B23-M202 Manufacturing - Advanced
B23-P202 Power & Energy - Advanced
B23-T202 Student Teaching

Fourth Year - University of Manitoba
Technical Programs
81.310 / 81.311 / 81.312 / 81.313
* 3 Programs (Minor Areas)
81.407 Advanced Methods

Suggested Minor Areas
Industrial Arts Support Areas
13.123/228 Applied Mathematics
   7.228 Environment Geology
   77.120 Introduction to Sociology
   18.120 Principles of Economics

Elect either a) or b)
   a) 16.125 Physical Aspects of Environment
   b) 27.111 Environment and Functions of Business
   77.337 Sociology of Work

Industrial Arts Science Option
1.123 General Chemistry
   or
   1.120 Elementary Theoretical Chemistry
   71.123 Biology
   16.121 General Physics
   13.139 Introductory Calculus
   13.140 Calculus for Physics & Mathematical Sciences

Elect one: a), b), c) or d)
   a) 16.124 Physical Science
   b) 16.125 Physical Aspects of the Environment
   c) 7.227 Earth Science
   d) 81.403 Curriculum & Instruction Secondary, I & II.
   (Recommended for persons selecting the science option to meet secondary methods requirement)

Industrial Arts Science Option
17.120 Introduction to Psychology
17.231 Adolescent Psychology
77.120 Introduction to Sociology
77.120 Sociology of Work

Select two additional programs from (12 hrs.) Sociology or Psychology

Other Suggested Minor Areas

Minors in any one of 15 different areas which will serve as a second teaching area in the public school can be developed with your advisor at the University of Manitoba. The academic second teachable areas are:

- Art
- Geography
- Biology
- German
- Chemistry
- Computer Science
- History
- English
- Physics
- French
- Spanish
- General Science
- Theatre
- Ukrainian

Please note that the Program Outline above and the Course Descriptions below include Red River Community College courses only. For further information on the University of Manitoba courses, please see the Industrial Arts Teacher Education program brochure.

COURSE DESCRIPTIONS

B22-E203 PROGRAM DEVELOPMENT IN BUSINESS EDUCATION

Development of an orderly procedure for the identification of concepts and instructional units to be used in teaching. The culminating project will be a program 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.

B23-C102 CONSTRUCTION - INTRODUCTION

Introduction to construction will include a number of construction trades with a great deal of emphasis placed on tools, equipment and safety. Basic building practices will be dealt with, both in laboratory and classroom.

B23-C202 CONSTRUCTION - ADVANCED

The study of building principles, including materials, and building codes. Laboratory activities will include floor and wall construction, basic roof design, interior and exterior finishing. Prerequisite: B23-C102.

B23-E103 AUDIO-VISUAL EDUCATION

Communication principles related to the application of audio visual media to education. Audio visual materials and equipment; their selection, preparation, utilization, and evaluation in industrial education.

B23-E105 GENERAL TEACHING METHODS I


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 on location, size, shape of laboratory and its physical requirements: specifications, purchasing and placement of required equipment and supplies.

B23-E203 PROGRAM DEVELOPMENT IN INDUSTRIAL EDUCATION

Development of an orderly procedure for the identification of concepts and instructional units to be used in teaching. The culminating project will be a program outline involving analysis of content; instructional objectives; resource units and sample tests.

B23-E205 GENERAL TEACHING METHODS II

Prerequisite: B23-E105 General Teaching Methods 1. Continuation of General Teaching Methods 1 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

Exploring the processes and methods used in graphic communications. Areas studied relate to communication theory, general layout and design, drafting, screen process printing, basic photography and relief printing as applied to the teaching of graphic communications related to industrial arts education.

B23-G202 GRAPHIC COMMUNICATIONS - ADVANCED

Continuation of exploring the processes and methods used in graphic communications. Areas studied relate to lithographic, office duplicating, graphic careers, microfilm, and binding, finishing and packaging, as applied to the teaching of graphic communication as related to industrial arts education. Prerequisite: 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 inter-changeable parts.

B23-M202 MANUFACTURING - ADVANCED

An indepth 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: 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, electronics, 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: B23-P102.

B23-T102 SEMINAR AND SCHOOL EXPERIENCE
A period of student involvement in actual classroom practice. Student 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 B23-T102 with less emphasis on observation and more emphasis on actual teaching. The course will also require greater overall teaching responsibilities including planning, classroom management evaluation and extra curricular activities.

B23-W102 COOPERATIVE BUSINESS/INDUSTRIAL EDUCATION
A special course designed to provide educational experiences relevant to Industrial Arts/Business Teacher Education student in an industrial/business environment. The experience will involve as many aspects of the concerned industry/business as possible. The course will be individualized according to a student's background and project summarizing the student activities will be a major requirement.
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 39-week certificate program with 35 hours per week scheduled class time. There are three entry dates to the program: September, December and March. 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
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with Mathematics 200* and one of Physics 200 or Physical Science 201. English 200 or 201 is strongly recommended; or
- Adult Basic Education 11A.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of Mathematics 200*, 301, 290 academic, or 911 and one of Physics 200 or 290 or Physical Science 201. Mature students must also 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 Admissions/Registration for review.

* Mathematics 301 will be accepted in lieu of Mathematics 200.

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.

PROGRAM OUTLINE
T12-I001 DC Fundamentals
T12-I003 AC Fundamentals
T12-I004 Electronic Fundamentals
T12-I016 Electronic Soldering & Desoldering
T12-I017 Computer Basics & Keyboard Skills
T12-I018 Industrial Soldering & Desoldering
T12-I019 Binary and Hexadecimal number systems, sequential and combinational logic, encoders, displays and registers.
T12-I020 Electronics Math I
T12-I070 Microprocessors
T12-I071 Logic Circuits
T12-I072 Microprocessor/Computer/Interfacing
T13-M520 Electronics Math I
T14-C504 Communication

COURSE DESCRIPTIONS
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, SCR's, control devices, amplifiers, power supplies, RC and LC oscillators.

T12-I016 ELECTRONIC SOLDERING & DESOLDERING
The student will learn the following: - soldering and assembly of components on printed circuit boards (PCB) - make touch-up and rework repairs to PCB's - make quality assurance tests on completed work - install and remove surface mount devices (SMD) on training boards - make repairs to laminated circuit boards

T12-I017 COMPUTER BASICS & 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% 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 AND THYRISTOR THEORY AND OPERATION
The UJT as a control device. Thyristor family of PNPN devices.

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
Industrial control circuits including photo sensitive devices, relays, FET's, operational amplifiers and Zener diodes. Students are involved in theory, lab activity and the final report stressing demonstrable 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 CONTROL 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, RS 232-C and other data
transmission methods.

T13-M520 ELECTRONICS MATH I
Algebra, powers of ten, exponents, ratio, trigonometry,
logarithms, simultaneous equations, problem solving (AC and
DC circuits) decibels, network analysis, number system,
Bodean algebra.

T14-C504 COMMUNICATION
A self-paced practical course that develops communications
skills from four viewpoints: job-seeker, employee, junior
supervisor, small business owner. The course is tailored to fit
the needs of individual students and the requirements of the
advisory boards.
INSTITUTIONAL FOOD SERVICE SUPERVISOR

PURPOSE
To develop the skills required to function effectively at a junior supervisory level in the food service department of a health care facility or institution.

PROGRAM
Institutional Food Service Supervisor is a 10 month certificate program with a September entry date. The program was designed in cooperation with the Manitoba Association of Registered Dietitians and has been recognized by the Canadian Food Service Supervisors Association as an approved program.

The program is noted for its competency-based-learning (CBL) format, 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.

Off-campus work experience is an integral part of the program.

ENTRANCE REQUIREMENTS
A -14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with English 200 or 201, Mathematics 200 or 201, and one of Chemistry 200 or 201 or Biology 200 or 201;
or
- Adult Basic Education 11C;
and
B - an interview with a special selection committee;
and
C - submission of recent dental and medical certificates, along with the results of a current chest X-ray, indicating proof of good health. (These documents are not required at the time of initial application but must be submitted once notification of acceptance is received by the applicant.)

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of English 200, 201, 290, or 911; one of Mathematics 200, 201, 290, or 911; and one science at the 200, 201, or 290 level. Mature students must also 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 Admissions/Registration for review.

This is a special selection program. The committee looks for applicants who have a genuine interest in a food service career and a basic understanding of the type of work involved. Some food industry work experience is preferred.

EMPLOYMENT POTENTIAL
The majority of graduates have found employment in health care facilities. Other opportunities may exist in commercial food service operations, such as company cafeterias and catering firms.

PROGRAM COMPETENCIES
Term 1
B09-F102 On-The-Job Training
B09-OD00 Demonstrate Food Preparation Skills
B09-OD01 Explain Basic Sanitation Principles & Procedures
B09-OD02 Explain Basic Kitchen Safety Rules & Procedures
B09-OD03 Explain Safe & Efficient Use Of Kitchen Equipment
B09-OD04 Use Kitchen Knives Safety & Efficiently
B09-OD05 Explain Recipes & Measurement Procedures
B09-OD06 Explain The Preparation Of Basic Stocks
B09-OD07 Prepare Soups
B09-OD08 Prepare Sauces
B09-OD09 Cook Meat, Poultry & Fish
B09-OD10 Cook Vegetables, Rices & Pasta
B09-OD11 Prepare Salads & Dressings
B09-OF00 Supervise Staff
B09-OF01 Describe Role Of Supervisor
B09-OF02 Describe Organizational Structure
B09-OF03 Use Planning Aids
B09-OF04 Train Employees
B09-OF05 Recruit Employees
B09-OF06 Describe Job Performance Appraisal
B09-OF07 Handle Staff Problems
B09-OF08 Explain Staff Meetings
B09-OF09 Plan Staff Schedules
B09-OK00 Demonstrate Word Processing Skills
B09-ON00 Operate Accounting System
B09-ON01 Record Basic Acctg. Entries, Take Trial Balance
B09-ON02 Demonstrate Princ./Proc. For Internal Cash Control
B09-ON03 Duties Of Petty Cashier & Petty Cash Fund
B09-ON04 Prepare Bank Reconciliation/Correcting Journal
B09-ON13 Calculate & Record Payroll
B09-ON14 Initiate & Employ A Payroll Application
B09-ON15 Analyze Business Transactions & Affects
B09-ON20 Define Purpose Of Understanding Human Behavior
B09-ON22 Understand Perceptual Systems
B09-ON23 Describe The Dynamics Of Small Groups
B09-ON24 Demonstrate Understanding Of Motivation
B09-ON25 Apply The Principles Of Organization
B09-ON26 Desc. Leadership Skills & Leadership Challenges
B09-ON27 Describe A Humanized Work Place (Morale)
B09-ON28 Desc. Dynamics Of Change In A Work Environment
B09-ON29 Identify Equal Employment Opportunities
B09-ON30 Appropriately Personal Attitude & Stress Mgmt.
B13-M612 Introduction To Business
B13-S542 Sociology
B14-B116 Business Mathematics
B14-M101 Basic Marketing
B16-E112 Business Communications
B16-E113 Oral Communications
B18-T100 Keyboarding For Information Processors
B32-A000 Apply Nutrition Principles
B32-A001 Use Canada's Food Guide
B32-A002 Describe Energy Requirements
B32-A003 Analyze Body Requirements For Carbohydrates
B32-A004 Analyze Body Requirements For Fats
B32-A005 Analyze Body Requirements For Protein
B32-A006 Analyze Body Requirements For Vitamins
B32-A007 Analyze Body Requirements For Minerals
B32-A008 Analyze Body Requirements For Water
B32-A009 Design Menus For Life Cycle Needs
B32-A010 Recognize Cultural Influences On Food Habits
B32-A011 Analyze Fad Diets
B32-B000 Apply Science Principle To Food Handl.& Processing
B32-B001 Evaluate Food Quality Characteristics
B32-B002 Describe Water As A Food Component
B32-B003 Recognize Property Changes In Food Carbohydrates
B32-B004 Recognize Property Changes In Food Lipids
B32-B005 Recognize Property Changes In Food Protein
B32-B006 Recognize Food Regulations
B32-C000 Manage Food Services
B32-C001 Describe Functions Of Management
B32-C002 Describe Time & Energy Control
B32-C003 Evaluate Kitchen & Cafeteria Design & Equipment
B32-C004 Design Cycle Menus
B32-C005 Describe Standardized Recipes
B32-C006 Order Food Supplies
B32-C007 Evaluate Receiving Procedures
B32-C008 Interpret Storage & Issuing Methods
B32-C009 Identify Production
B32-C010 Identify Distribution
B32-C011 Describe Quality Assurance
B32-E000 Plan Modified Diets
B32-E001 Interview Patient
B32-E002 Use SI In Diet Planning
B32-E003 Explain Diet Order Implementation
B32-E004 Interpret Routine Hospital Diets
B32-E005 Plan G.I. Diets
B32-E006 Plan Weight Control Diets
B32-E007 Plan Diabetic Diets
B32-E008 Plan C-V Diets
B32-E009 Plan Renal Diets
B32-E010 Describe Palliative Care Diets
B32-E011 Describe Tube Feedings & T.P.N.
B32-G000 Practice Cost Controls
B32-G001 Explain Cost Control
B32-G002 Calculate Daily Food Cost
B32-G003 Explain Yield Tests & Precost Menu's
B32-G004 Employ Labour Control Measures

COURSE DESCRIPTIONS

B09-0102 ON-THE-JOB TRAINING
A six-week work experience within an institutional or health care environment, providing an opportunity for the student to apply acquired knowledge and skills. The student will work under the supervision of a registered dietitian or a food service manager/supervisor.

B09-0D00 DEMONSTRATE FOOD PREPARATION SKILLS
This skill area is designed to familiarize the student with sanitation and safety practices applicable to food preparation. During a three-week segment of the second term, this skill area follows a laboratory format in which the principles of food preparation addressed in the COMPACS are applied to the preparation of large quantity recipes.

B09-0D01 EXPLAIN BASIC SANITATION PRINCIPLES & PROCEDURES
The study of basic sanitation principles and their application to food storage and handling as well as to equipment maintenance.

B09-0D02 EXPLAIN BASIC KITCHEN SAFETY RULES & PROCEDURES
An explanation of safety guidelines in an institutional food service department. Practical application is used to demonstrate the comprehension of learning material.

B09-0D03 EXPLAIN SAFE & EFFICIENT USE OF KITCHEN EQUIPMENT
This COMPAC identifies basic food processing and cooking equipment and utensils and explains related safe and efficient operating and handling procedures.

B09-0D04 USE KITCHEN KNIVES SAFELY & EFFICIENTLY
This COMPAC explains the proper use of a French knife, followed by the actual performance of basic cutting and sharpening techniques.

B09-0D05 EXPLAIN RECIPES & MEASUREMENT PROCEDURES
This COMPAC explains standardized recipes and accurate measurement procedures and uses a problem solving approach for measuring conversions.

B09-0D06 EXPLAIN THE PREPARATION OF BASIC STOCKS
An explanation plus actual preparation of beef, chicken, brown and fish stocks.

B09-0D07 PREPARE SOUPS
An explanation plus actual preparation of vegetable, cream, chowder and consomme soups.

B09-0D08 PREPARE SAUCES
An explanation plus actual preparation of mother and secondary sauces.

B09-0D09 COOK MEAT, POULTRY & FISH
An explanation of dry-heat and moist-heat methods appropriate for specified meat cuts, poultry and fish followed by the actual preparation of specified items.

B09-0D10 COOK VEGETABLES, RICE & PASTA
A study of the classification of vegetables, and the types of rice and pasta followed by the application of appropriate cooking methods for selected items.

B09-0D11 PREPARE SALADS & DRESSINGS
An explanation of various types of salads and salad dressings followed by the preparation of selected items.

B09-0F00 SUPERVISE STAFF
Describes the various activities required to perform the management functions of planning, organizing, leading, staffing and controlling at a junior supervisory level. Learning activities based upon supervisory situations in actual work settings are utilized to reinforce key concepts.
B09-0F01 DESCRIBE ROLE OF SUPERVISOR
An analysis of supervision in terms of skills required and role of
the supervisor within an organization.

B09-0F02 DESCRIBE ORGANIZATIONAL STRUCTURE
A study of the organizational structure of institutions and dietary
departments as well as the components of effective delegation
of authority within these structures.

B09-0F03 USE PLANNING AIDS
A study of planning aids and the decision making process in
effective supervision.

B09-0F04 TRAIN EMPLOYEES
This COMPAC deals with the orientation and training
procedures suitable for employees in an institutional food
service setting.

B09-0F05 RECRUIT EMPLOYEES
Appropriate interviewing techniques in the process of staff
recruitment are studied.

B09-0F06 DESCRIBE JOB PERFORMANCE APPRAISAL
This COMPAC describes the purpose and various methods of
job performance appraisals.

B09-0F07 HANDLE STAFF PROBLEMS
An analysis of the supervisor's counselling and disciplinary role
in handling staff problems.

B09-0F08 EXPLAIN STAFF MEETINGS
Through the use of films, written material and practical
exercises, effective staffing meetings are presented and
discussed.

B09-0F09 PLAN STAFF SCHEDULES
A practical approach to planning and preparing staff schedules
for a dietary department

B14-M101 BASIC MARKETING
A study of industrial and consumer marketing with emphasis on
marketing institutions and principles. The 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.

B16-E112 BUSINESS COMMUNICATIONS
This course deals with practical business applications of written
communication skills. You will become familiar with the
principles of effective writing, with business letter and memo
format and with several types of business letters.

B16-E113 ORAL COMMUNICATIONS
This course is designed to increase the students ability to listen
and to speak well. Two hours per week have been scheduled
for lectures and work shops.

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).

B32-A000 APPLY NUTRITION PRINCIPLES
The course is designed to introduce current concepts of basic
nutrition which will enable the student to realistically function as
a health care worker.

B32-A001 USE CANADA'S FOOD GUIDE
This COMPAC describes Canada's Food Guide and illustrates
its use in determining good food choices. A personal nutritional
analysis of current eating habits emphasizes the need for
balanced meal planning.

B32-A002 DESCRIBE ENERGY REQUIREMENTS
This COMPAC describes basal and total energy requirements
of the human body as well as control mechanisms.

B32-A003 ANALYZE BODY REQUIREMENTS FOR
CARBOHYDRATES
An explanation of the utilization and an analysis of body
requirements of carbohydrates.

B32-A004 ANALYZE BODY REQUIREMENTS FOR FATS
An explanation of the utilization and analysis of body
requirements of fat.

B32-A005 ANALYZE BODY REQUIREMENTS FOR PROTEIN
A study of protein in terms of dietary sources, functions in the
human body and daily requirements.

B32-A006 ANALYZE BODY REQUIREMENTS FOR
VITAMINS
An overview of vitamins in terms of utilization by the human
body dietary sources and daily requirements.
B32-A007 ANALYZE BODY REQUIREMENTS FOR MINERALS
A study of dietary sources, utilization and body requirements of specified minerals.

B32-A008 ANALYZE BODY REQUIREMENTS FOR WATER
This COMPAC deals with the requirements for water and analyzes its role in the human body.

B32-A009 DESIGN MENUS FOR LIFE CYCLE NEEDS
This COMPAC deals with the designing of suitable menus to meet the nutritional requirements of adults, older adults, adolescents, athletes, infants, children as well as pregnant and lactating females.

B32-A010 RECOGNIZE CULTURAL INFLUENCES ON FOOD HABITS
Overview of characteristic food patterns of specified culture groups.

B32-A011 ANALYZE FAD DIETS
A variety of fad diets are evaluated according to sound nutritional principles.

B32-B000 APPLY SCIENCE PRINCIPLE TO FOOD HANDING & PROCESSING
A course designed to familiarize the student with the effects of preparation and processing on the physical and chemical structure of foods.

B32-B001 EVALUATE FOOD QUALITY CHARACTERISTICS
A study of the sensory characteristics of food and the subjective evaluation methods for assessing food quality. Emphasis is placed on the application of the evaluation tools in a classroom setting.

B32-B002 DESCRIBE WATER AS A FOOD COMPONENT
The experimental study of water as a component of food and its role in food preparation.

B32-B003 RECOGNIZE PROPERTY CHANGES IN FOOD CARBOHYDRATES
An experimental study of the effects of various cooking additives on certain food carbohydrates.

B32-B004 RECOGNIZE PROPERTY CHANGES IN FOOD LIPIDS
This COMPAC covers certain physical and chemical properties of specified lipids. Individual and group experimental study of lipids in food preparation are performed.

B32-B005 RECOGNIZE PROPERTY CHANGES IN FOOD PROTEIN
A study of physical and chemical property changes in specified proteins in the program of food preparation.

B32-B006 RECOGNIZE FOOD REGULATIONS
This COMPAC takes a look at the application of Canadian Food Regulations as they pertain to food product labels, advertising and the use of additives.

B32-C000 MANAGE FOOD SERVICES
The study of food management skills emphasizing their application to specific functions of a food service operation. Course material includes such topics as sanitation and safety procedures based on federal and provincial regulations and codes, principles of kitchen design and equipment layout as well as energy management. Menu development, standardizing recipes, purchasing, receiving and storage methods, inventories as well as food production and distribution comprise the major components of the course.

B32-C001 DESCRIBE FUNCTIONS OF MANAGEMENT
A description of the major functions of management and an interpretation of their use in a food service department.

B32-C002 DESCRIBE TIME & ENERGY CONTROL
A study of work simplification and energy conservation techniques related to food service.

B32-C003 EVALUATE KITCHEN & CAFETERIA DESIGN & EQUIPMENT
The principles of effective kitchen and cafeteria layout and design are presented followed by the application of these principles in the actual assessment of established cafeterias.

B32-C004 DESIGN CYCLE MENUS
The tools of menu planning are used to design a cycle menu suitable for health care facilities.

B32-C005 DESCRIBE STANDARDIZED RECIPES
Standardized recipes are discussed in terms of advantages, limitations, structure, filing system and quantity adjustments.

B32-C006 ORDER FOOD SUPPLIES
Effective food purchasing systems are presented followed by the actual preparation of a purchase order form.

B32-C007 EVALUATE RECEIVING PROCEDURES
Qualifications of receiving personnel are considered and effective receiving procedures and records are presented.

B32-C008 INTERPRET STORAGE & ISSUING METHODS
This COMPAC covers the storage, issuing and inventory procedures used in health care facilities.

B32-C009 IDENTIFY PRODUCTION
This COMPAC describes the components of food production and overviews state-of-the-art production systems for institutional feeding.

B32-C010 IDENTIFY DISTRIBUTION
A study of the food distribution process within an institutional setting from portioning through to patient and customer feeding.

B32-C011 DESCRIBE QUALITY ASSURANCE
This COMPAC studies quality assurance as it relates to a food service department in a health care facility.

B32-E000 PLAN MODIFIED DIETS
This course is concerned with the dietary management of normal and therapeutic diets based on the guidelines set forth in the Manitoba Association of Registered Dietitians (M.A.R.D.) diet manual.
B32-E001 INTERVIEW PATIENT
This course is designed to familiarize the student with effective interviewing techniques for collecting accurate diet information. Through the use of video taped role playing, provision is made for practical application.

B32-E002 USE SI IN DIET PLANNING
This course interprets the kilojoule and millimole units of measurement in relation to diet prescriptions.

B32-E003 EXPLAIN DIET ORDER IMPLEMENTATION
Describes the basic procedures for implementing and documenting diet order information in a healthcare facility.

B32-E004 INTERPRET ROUTINE HOSPITAL DIETS
An interpretation of the progression of routine hospital diets from fluids to a full diet along with the actual planning of specified menus appropriate for these conditions.

B32-E005 PLAN GASTROINTESTINAL DIETS
This course includes an overview of gastrointestinal disorders as well as the actual planning of specified menus appropriate for these conditions.

B32-E006 PLAN WEIGHT CONTROL DIETS
A description of sound weight control practices is emphasized through the use of a case study approach and the actual planning of appropriate menus.

B32-E007 PLAN DIABETIC DIETS
A description of dietary management for diabetes as well as the actual planning of appropriate menus.

B32-E008 PLAN C-V DIETS
A description of various cardio-vascular diseases as well as the actual planning of specified menus for specified diet orders.

B32-E009 PLAN RENAL DIETS
A description of various malfunctioning conditions related to the kidneys along with the actual planning of appropriate menus for specified diets.

B32-E010 DESCRIBE PALLIATIVE CARE DIETS
A study of nutritional problems related to cancer and diet therapy principles for cancer patients.

B32-E011 DESCRIBE TUBE FEEDINGS & TOTAL PARENTERAL NUTRITION
An overview of tube feedings and total parenteral nutrition.

B32-G000 PRACTICE COST CONTROLS
Implementation of modern costing methods and labour control measures related to the food service industry are utilized throughout the course.

B32-G001 EXPLAIN COST CONTROL
This COMPAC provides a description of various aspects of a cost control system within a food service operation.

B32-G002 CALCULATE DAILY FOOD COST
This COMPAC explains daily food cost formulas using a problem solving approach.

B32-G003 EXPLAIN YIELD TESTS & PRECOST MENUS
This COMPAC explains the application of yield tests and cost factors in the costing process. A problem-solving approach is used in the explanation of recipe costs, potential food costs and sales values for a menu.

B32-G004 EMPLOY LABOUR CONTROL MEASURES
The effects of labour controls are identified and interpreted in relation to staffing, scheduling, work productivity and union contracts within a food service operation.

Please note that because the competencies listed above are self-explanatory, no course descriptions are required for those skill areas. Descriptions are included only for the course numbers listed below.
INSTRUMENTATION ENGINEERING TECHNOLOGY

PURPOSE
To develop the knowledge and skills required to design, construct, troubleshoot and maintain a wide variety of control systems.

PROGRAM
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.

Instrumentation, Electrical, Computer and Electronic Engineering Technology programs have a common first year of training.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Sciences 301;
  * Physics 300 is strongly recommended as a more appropriate background for technology.
- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science* as outlined above. Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE

Year 1
Term 1
ELE-E101 Electric Circuits
ELE-E102 Electrical Instruments
ELE-E104 Personal Computers I
ELE-E106 Drafting
ELE-M102 Math
ELE-P109 Physics
ELE-R100 Report Writing

Term 2
ELE-E201 Electric Circuits
ELE-E202 Electrical Instruments
ELE-E204 Personal Computers II
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-I432 Process Devices
ELE-I435 Programmable Logic Controllers
ELE-I436 Electrical Practices
ELE-I437 Instrumentation Electronics
ELE-I438 Final Control Elements
ELE-I439 Basic Process Control
ELE-M432 Calculus

Term 5
ELE-I532 Process Measurements
ELE-I535 Data Acquisition And Communication
ELE-I536 Electrical Practices
ELE-I537 Power Electronics
ELE-I538 Fluid Mechanics
ELE-I539 Linear Process Control
ELE-KS31 Intro Chemical Instrumentation
ELE-M532 Calculus

Term 6
ELE-I632 Process Measurements
ELE-I637 Power Electronics
ELE-I638 Industrial Controls
ELE-I639 Computer Process Control
ELE-K631 Chemical Instrumentation
ELE-R630 Report Writing

COURSE DESCRIPTIONS

ELE-E101 ELECTRIC CIRCUITS
Basic concepts of electricity and electric circuits. Ohm's law, power, energy and efficiency, Kirchoff'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 ELE-E102
Basic Electrical Instruments is an applied Ohm's Law Laboratory course for the ELE-E101 Electric Circuits 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 I
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 programs. A Typing Tutor course, 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**
Continuation of Electric Circuits ELE-E101. Fundamental concepts of sinusoidal voltage and current, time and phasor domains; instantaneous average and effective values. Resistor, inductor and capacitor in AC sinusoidal circuit; impedance and admittance. Problem-solving methods for simple AC circuits. Analysis of more complex AC electric circuits using network theorems, mesh and nodal methods. Single phase AC power: average, reactive and apparent, power factor; measurement of power in a single phase AC circuit using a wattmeter.

**ELE-E202 ELECTRICAL INSTRUMENTS**
This course is a continuation of ELE-E102 Basic Electrical Instruments and is the lab course for ELE-E201 Electric Circuits. 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 II**
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. The three hours per week of formal class time is spent in the PC room 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 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% 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 Z80 microprocessor. This course lays the foundation for the more advanced microprocessor training contained in the second year of all Electrical, Electronic, Instrumentation and Computer 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 behaviour of small signal amplifiers. It is primarily a lecture and lab related course and consists of six hours a week.

**ELE-1435 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 port registers; timer registers; stack operation and interrupt operation.

**ELE-1436 ELECTRICAL PRACTICES**
This course is intended to give 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, tapping 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 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, Archimede's Principle, applications for level and density, Bernoulli's Principle and Significance to pressure and velocity, Equation of continuity, Reynold's 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 wires, flumes, rotometers, applications, considerations, turbine flow meters, magnetic flow meters, vortex flow meters, positive displacement meters, metering pumps.

ELE-1539 LINEAR PROCESS CONTROL
Tuning control loops via - Seat of Pants, Ziegler-Nichols, Cohen and Coon Pessen, Alkman using Ultimate Cycling and Process Reaction Curve Techniques, Imporance 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-1632 PROCESS MEASUREMENTS
Temperature scales, filled systems, bimetal devices, chemical indicators, RTD's, wire and film types, semi-conductors, Thermistor characteristics, thermocouples, thermocouple laws, Reading and calibrating temperature instruments, pyrometry, optical and radiation theory, humidity, concept, psychometric 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-1637 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 inverter, AC drives, one quadrant, two quadrant and four quadrant; AC drives, variable voltage, variable frequency slip power recovery, eddy current and cycloconverter.

ELE-1638 INDUSTRIAL CONTROLS

ELE-1639 COMPUTER PROCESS CONTROL

ELE-K531 INTRO CHEMICAL INSTRUMENTATION
Atoms, molecules, periodic table, ions, ionic bonding, covalent bonding, valency, oxidation numbers, chemical equations, balancing, stoicheometry, 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, monochrometers, sample containers, optics, radiation detectors, electronics, nature of absorption, qualitative 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, electro-chemistry, theory, half cells, pH meters, electrode conductivity, theory, application, gas chromatography principles, components, operation, interpretation, sample and column preparation.

ELE-M102 MATH
Pre-Calculus review: linear, quadratic, logarithmic, exponential and simultaneous (linear) equations. Some factoring, graphing, formula manipulation, functional notation, complex numbers. Right triangle, trig., radians, and problem-solving. Emphasis is on doing and in the process of orderly developments.

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, trigonometric and inverse trigonometric, logarithmics and exponentials. Tangents, normals, motion, related rates, maximum/minimum, small changes and Newton's Roots.

ELE-M302 CALCULUS
Integral calculus. Work with trigonometric identities and equations: reciprocal, Pythagorean, angle sum, double and half angle relations. Integrate algebraic, log, exponential, trigonometric quantities. Use substitution and by-part techniques. Find areas, average and RMS values, and work with integrals with current, charge and voltage.

ELE-M432 CALCULUS
Applied Calculus for Instrumentation Technology - differential equations with emphasis on LaPlace transform methods. Applications include: transients in series circuits and uncontrolled first order systems and simulation of natural and controlled systems using TUTSIM software.

ELE-M532 CALCULUS
1) Use of dynamic system simulation software, TUTSIM for process control systems (introduction) - fluid tank level, single, cascaded, uncontrolled, controlled (proportional with bias, proportional-integral). 2) Use of MathCAD mathematical software - Fourier series, Fourier transform (introduction).

ELE-P209 PHYSICS
An intermediate level course in 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/N, radiant and luminous intensity, response of the eye, illumination and luminous intensity, sources of light and photoelectric effect.

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-R630 REPORT WRITING
Review of report writing, oral presentations and job search techniques; planning, writing and presenting a formal technical report.

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, significant figures, 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 labs.
LEGAL ASSISTANT

PURPOSE
To develop the knowledge and skills required to perform basic legal procedures, investigations and examinations, under the direction of a lawyer.

PROGRAM
Legal Assistant is a two-year diploma program with a September entry date. (Part-time students may be considered for entry on a limited basis as space becomes available.) The program is designed to provide students with specific knowledge of the procedural aspects of legal practice, basic knowledge of related substantive aspects of law, general knowledge of law office management and the required clerical skills.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with one of English 300 or 301 and one of Mathematics 200 or 301; or
- Adult Basic Education 11B;
and
B - successful completion of entrance testing which includes an assessment of reading ability;
and
C - an interview with the Legal Assistant Selection Committee

Mature Student Admission. Mature student applicants may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing in lieu of 20 credits; however, they must have specific credits in one of English 300 or 301 and one of Mathematics 200, 290 (academic), or 301, at a minimum. Mature students must also complete requirements (B) through (D) 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 Admissions/Registration for review.

This is a special selection program. Students are selected on the basis of academic preparation, motivation, and suitability for the kinds of legal careers in the labour market.

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 Admissions/Registration Office at 632-2327 in regard to the deadline date for a specific program.

EMPLOYMENT POTENTIAL
Although the demand for legal assistants is a relatively recent professional development in Manitoba, the future for this type of work appears promising. The degree of responsibility that a graduate will assume, and the salary that he or she will receive, will vary, depending on the calibre of the graduate. Graduates have found employment primarily in law offices. However, job opportunities may be available in various other areas, such as government agencies and legal departments of large corporations.

PROGRAM OUTLINE
Term 1
B17-C742 Contracts I
B17-E751 Communications
B17-I731 Introduction To The Legal System
B17-L741 Litigation I
B17-R741 Real Estate I

B17-V721 Legal Vocabulary I
B18-T701 Legal Typing I

Term 2
B17-B742 Corporate Law
B17-C732 Legal Research
B17-E753 Legal Letter Writing
B17-L742 Litigation II
B17-R742 Real Estate II
B17-0721 Law Office Management I
B18-W733 Word Processing/Legal Application

Term 3
B17-A451 Accounting
B17-C743 Contracts II
B17-F753 Family Law
B17-L743 Litigation III
B17-R743 Real Estate III
B17-W753 Wills And Estates I
B18-D723 Machine Transcription
B18-W734 Advanced Word Processing/Legal Application

Term 4
B17-A734 Legal Accounting/Computer Applications
B17-B744 Commercial Law
B17-C734 Criminal Law
B17-L744 Litigation IV
B17-O723 Law Office Management
B17-R744 Real Estate IV
B17-W754 Wills & Estates II

COURSE DESCRIPTIONS
B17-A451 ACCOUNTING
An in-depth study of basic accounting principles as applied to journaling, posting, financial statements, adjustments, petty cash and bank reconciliation.

B17-A734 LEGAL ACCOUNTING/COMPUTER APPLICATIONS
This course includes the one-write accounting system for law offices. In addition, students will learn computer applications in accounting.

B17-B742 CORPORATE LAW
This course is designed to introduce the student to the corporation as a legal entity, together with providing the fundamental knowledge of its internal and external workings. Procedural emphasis is on the method of incorporation and routine corporate housekeeping thereafter.

B17-B744 COMMERCIAL LAW
This course introduces the student to commercial concepts, in particular commercial financing, Personal Property Security Act, commercial leases, bankruptcy and receiverships and acquisitions.

B17-C732 LEGAL RESEARCH
This course introduces the student to the primary and secondary sources of law and the material available to summarize and aid in finding legal reports. Familiarization with computerized legal research techniques is included in the course.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B17-C734</td>
<td>CRIMINAL LAW</td>
<td>This course introduces the student to principles of criminal law as well as criminal procedure, using the criminal code and the various acts and appeal procedures relevant to criminal law.</td>
</tr>
<tr>
<td>B17-C742</td>
<td>CONTRACTS I</td>
<td>This course gives the student a basic understanding of the law of contract.</td>
</tr>
<tr>
<td>B17-C743</td>
<td>CONTRACTS II</td>
<td>This course examines special forms of contractual obligations such as bailment, insurance, employment, contracts and financial contractual obligations.</td>
</tr>
<tr>
<td>B17-E751</td>
<td>COMMUNICATIONS</td>
<td>Grammar, sentence structure &amp; basic punctuation form the syllabus for this course, preparatory to legal letter writing.</td>
</tr>
<tr>
<td>B17-E753</td>
<td>LEGAL LETTER WRITING</td>
<td>This course includes composing correspondence for various situations that a legal assistant will encounter in the daily routine in a legal office, as well as reports and memoranda of law.</td>
</tr>
<tr>
<td>B17-F753</td>
<td>FAMILY LAW</td>
<td>This course is designed to introduce the student to the concepts of divorce practice and to provide a fundamental knowledge of the procedures involved in preparing petitions and relevant documentation.</td>
</tr>
<tr>
<td>B17-E751</td>
<td>INTRODUCTION TO THE LEGAL SYSTEM</td>
<td>This course is designed to introduce the student to the Canadian legal system and to provide a background for subsequent studies in legal procedure.</td>
</tr>
<tr>
<td>B17-L741</td>
<td>LITIGATION I</td>
<td>This course is designed to introduce the field of civil litigation from a theoretical study of the law of torts to the daily workings of a litigation file.</td>
</tr>
<tr>
<td>B17-L742</td>
<td>LITIGATION II</td>
<td>This course covers civil appeals, collection procedures and a comparison of non-judgment debts.</td>
</tr>
<tr>
<td>B17-L743</td>
<td>LITIGATION III</td>
<td>This course continues from Litigation II, it covers the areas of costs and billings; civil appeals, particular applications; and a study of the Seizures Act and the Builder's Lien Act.</td>
</tr>
<tr>
<td>B17-L744</td>
<td>LITIGATION IV</td>
<td>This course continues from Litigation III and covers procedures following judgement - taxing costs, collections, garnishee, writ of attachment, the role of the receiver, injunctions and replevin.</td>
</tr>
<tr>
<td>B17-D723</td>
<td>LAW OFFICE MANAGEMENT I</td>
<td>Weekly seminars cover topics relating to legal office procedures and management techniques. In addition, students will gain practical experience through on-job training in a law office during the latter part of the course.</td>
</tr>
<tr>
<td>B18-W733</td>
<td>MACHINE TRANSCRIPTION</td>
<td>This course is designed to familiarize students with machine recorders and transcribers; to give the student practical experience in dictating letters, memos and instructions and to teach students to transcribe from recorded dictation tapes.</td>
</tr>
<tr>
<td>B18-T701</td>
<td>ADVANCED WORD PROCESSING/LEGAL APPLICATIONS</td>
<td>This course teaches students how to operate a word processor, utilizing legal applications, legal forms and documentation.</td>
</tr>
</tbody>
</table>
LIBRARY TECHNICIAN

PURPOSE
To develop basic public service and technical skills which will enable the graduate to serve as a competent library employee.

PROGRAM
Library Technician is a 10 month certificate program with a September entry date. The program is designed to prepare the graduate to work as a middle-level library employee whose knowledge of library techniques is superior to that of a clerk, but without the theoretical background or course knowledge of a librarian. The student will gain a general knowledge of library systems, a practical background in basic, day-to-day library procedures, and an understanding of the relationships of the different procedures throughout the library.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with English 300. A Computer Awareness program is strongly recommended; or
- Adult Basic Education 11B;
and
B - successful completion of the reading skills assessment test at the minimum required competency level;
and
C - proof of typing speed of not less than 35 wpm on a recent test;
and
D - an interview with the Library Technician Selection Committee.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits but applicants must also have specific credit in English 300. Mature student applicants are advised that an introductory computer program would be to their benefit. As well, mature students must meet entrance requirements (B), (C), and (D) above and be 20 years of age or before September 30 in the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

This is a special selection program. The Selection Committee chooses candidates on the basis of educational background and potential suitability for a library career. Applicants are encouraged to do some research on libraries and library technicians before attending the interview.

EMPLOYMENT POTENTIAL
Graduates have found employment in schools, public libraries, and in academic, hospital or government libraries.

Library Technician graduates are also eligible to enroll for the equivalent of an additional 10 months in a program leading to a Diploma in Library Technology. The diploma program provides the graduate with the opportunity to continue training in specific-interest and career-related courses.

PROGRAM OUTLINE
Term 1
B01-A131 Audio-Visual Materials Equipment And Production

B05-L111 Cataloguing
B05-L112 Reference And Public Service
B05-L113 Acquisitions & Processing Of Materials
B05-L114 Library Practicum
B05-L115 Work Practice
B15-S104 Introduction To Data Processing

Term 2
B05-L211 Cataloguing
B05-L212 Reference And Public Service
B05-L214 Acquisition & Organization Of Materials
B05-L215 Work Practice
B13-S521 Psychology I (optional)
B15-S211 Spreadsheets

Term 3
B05-L311 Cataloguing
B05-L312 Administration Of Libraries
B05-L315 Work Practice
B05-L316 Issues In Canadian Society
B13-S531 Psychology II (optional)
B16-E251 Intro To Canadian Literature
B16-E351 Canadian Literature
B16-E556 Children's Literature (optional)
B16-E556 Children's Literature (optional)

COURSE DESCRIPTIONS
B01-A131 AUDIO-VISUAL MATERIALS EQUIPMENT AND PRODUCTION
An introduction to the use and production of audio and visual materials such as transparencies, slides, audiotapes, videotapes, posters and display boards, etc. Also, an introduction to the operation of various types of equipment, including projectors (movie, slide, overhead, etc.), video and audio recorders, micro-form readers, and production equipment such as thermopy machines, etc.

B05-L111 CATALOGUING
An introduction to descriptive cataloguing of monographs (ISBD format), choosing appropriate access points, preferred form of personal name, cross-references for names, and name authorities. The course also includes filing according to ALA 1980 Filing Rules.

B05-L112 REFERENCE AND PUBLIC SERVICE
The fundamentals of library public service functions and reference work. Students will be introduced to the contents and uses of the major types of reference tools, with emphasis, where possible, on Canadian sources.

B05-L113 ACQUISITIONS & PROCESSING OF MATERIALS
An introduction to selection, verification and ordering procedures for book materials, and an examination of the organization and functions of the Acquisitions Department. This course includes the acquisition procedures for out-of-print books and French language materials, as well as procedures for handling gifts and exchanges, inventory, weeding and library supplies.

B05-L114 LIBRARY PRACTICUM
An overview of the organization and staffing of libraries, and an introduction to library terminology and library associations. Shelving and circulation are also covered.
B05-L115 WORK PRACTICE
A one week on-the-job training session in a local academic, public, school, or special library.

B05-L211 CATALOGUING
A further look at bibliographic description with respect to adding analytical entries to a record, as well as the description of non-book materials and serials. Students will be introduced to procedures for manual and automated copy cataloguing as well as MARC coding of machine-readable bibliographic records.

B05-L212 REFERENCE AND PUBLIC SERVICE
This course covers the theory and practices of interlibrary loan and provides experience in the use of computers in reference work.

B05-L214 ACQUISITION & ORGANIZATION OF MATERIALS
Acquisition and organization of French and foreign language materials and pamphlets, newspaper clippings, government publications and serials. Processing, maintenance (care and storage) and repair of library materials.

B05-L215 WORK PRACTICE
A two-week on-the-job training session in a local academic, public, school, or special library.

B05-L311 CATALOGUING
An introduction to the principles and procedures of course cataloguing and classification. Maintenance of course authority files and cross references will also be included.

B05-L312 ADMINISTRATION OF LIBRARIES
An introduction to the organization, policies and services of academic, public, school, and special libraries, and the governmental and administrative structure of libraries in Manitoba. Library staffing practices with emphasis on the role of the library technician will also be examined, as well as some issues that libraries face today.

B05-L315 WORK PRACTICE
A two-week training session in a local academic, public, school, or special library.

B05-L316 ISSUES IN CANADIAN SOCIETY
A survey of the major issues that are affecting Canadians today, with special emphasis on sources of information about Canada.

B13-S521 PSYCHOLOGY I
An introductory course supplemented by various exercises and group participation in an attempt to validate the introduced concepts. Some application of learning to personal, interpersonal and organizational situations.

B13-S531 PSYCHOLOGY II
Continuation of B13-S521.

B15-S104 INTRODUCTION TO DATA PROCESSING (LIB.TECH.)
This course is designed to introduce the student to basic computer concepts and provide hands-on experience with the MS-DOS Operating System and with the WordPerfect word processing package.

B15-S211 SPREADSHEETING (LIBRARY TECHNICIAN)
The course is designed to familiarize students with the basic principles of spreadsheeting. The college’s IBM-PC’s will be used with SuperCalc spreadsheet software.

B16-E251 INTRO TO CANADIAN LITERATURE
This course is designed to introduce students to works by Canadian and other 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. Introduction to Canadian Literature acts as a prelude to the course Canadian Literature, which is an intensive overview of literature in Canada.

B16-E351 CANADIAN LITERATURE
Students will study the work of various Canadian authors. Emphasis will be given to the techniques used by these authors to present the Canadian idea.

B16-E556 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 story-telling as well as leading children in discussion and interpretation of the literature.

B16-E656 CHILDREN’S LITERATURE
This course expands on the content of B16-E556 with special emphasis on contemporary children’s literature and Canadian writers. Also gives an overview of children’s literature as influenced by the media. The practicum includes story-telling and puppetry.
# 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
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with one of Mathematics 200* or 201. *Standing in Physics 200 or Physical Science 201 is strongly recommended;

- Adult Basic Education 11A

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of Mathematics 200*, 201, 280 academic, or 911. Formal credit in one of Physics 200 or 280 or Physical Science 201 is recommended. Mature students must also 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 Admissions/Registration for review.

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

## EMPLOYMENT POTENTIAL
Job opportunities have been found as junior draftspersons 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

### Term 1
- T03-M101 Fundamentals Of Delineation
- T03-M102 Applied Machine Drafting I
- T03-M103 Computer-Aided Drafting I
- T13-M524 Drafting Math

### Term 2
- T03-M201 Strength Of Materials
- T03-M202 Applied Machine Drafting II
- T03-M203 Computer-Aided Drafting II

### Term 3
- T03-M301 Mechanics
- T03-M302 Applied Fabrication Drafting
- T03-M303 Computer-Aided Drafting III
- T14-R504 Communications

## COURSE DESCRIPTIONS

### T03-M101 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-M102 APPLIED MACHINE DRAFTING I
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. Advanced dimensioning and tolerancing. First and second auxiliaries.

### T03-M103 COMPUTER-AIDED DRAFTING I
Introduction of AutoCAD computer-aided drafting system. Topics included are geometric entities, input modes, coordinate types, drawing creation, drawing editing and manipulation, block creation and use, layer concept and output to printer and plotter.

### T03-M201 STRENGTH OF MATERIALS
Consists of instruction in and solution of problems in strength of materials as it applies to the field of machine drafting. Includes stress-strain relationship, bolted and welded joints and shear and moments in beams.

### T03-M202 APPLIED MACHINE DRAFTING II
Production of advanced working drawings of machine components, mechanical assemblies, gears and cams.

### T03-M203 COMPUTER-AIDED DRAFTING II
Instruction in advanced commands of AutoCAD drafting system including moving and duplicating objects, array, modifying and maneuvering, notes and specifications, blocks, library creation and attributes.

### T03-M301 MECHANICS
Consists of instruction and solution of problems in torque, work and power as they apply to the field of drafting.

### T03-M302 APPLIED FABRICATION DRAFTING
Production of working drawings in the areas of welding, structural piping and sheet/plate metal fabrication.

### T03-M303 COMPUTER-AIDED DRAFTING III
Use of AutoCAD to produce advanced discipline-related working drawings. AutoCAD 3D and Introduction to AutoLISP programming.

### T13-M524 DRAFTING MATH
Solution of engineering related problems using algebra, geometry and trigonometry.

### T14-R504 COMMUNICATIONS
The course of instruction 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.
MACHINE SHOP PRACTICE

PURPOSE
To develop the knowledge and skills to safely and efficiently operate machine tools and machine-shop equipment, interpret mechanical drawings and sketches, and to weld, braze and solder.

PROGRAM
Machine Shop Practice is a 10 month certificate program with a September entry date. The program is designed to develop the knowledge and skills to set up and operate lathes, milling machines, shapers, grinding machines and drilling machines to produce a product according to specifications; to interpret mechanical drawings and sketches; to perform manual-arc and oxy-acetylene welding processes; and brazing and soldering.

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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended;
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D., standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190 or Practical Mathematics - Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Many graduates have found 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. Other graduates have found that the knowledge and skills gained through this program have provided a sound basis for related occupations, such as mechanical draftsman, mechanical technician, estimator and industrial salesperson.

For further information on apprenticeship and possible transfer of credit, please see the Machine Shop Practice program brochure.

PROGRAM OUTLINE
T03-R031 Blue Print Reading And Sketching For Machinists P/E
T04-A520 Arc Welding
T04-GS10 Related Gas Welding
T04-M010 In-Plant Training
T04-M012 Bench Work
T04-M014 General Operation & Control Of Machine Tools, Theory/Practice
T04-M018 Power Saws
T04-M020 Lathe Operation And Theory
T04-M022 Milling Machine Operation & Theory
T04-M026 Grinding Machine Operation & Theory
T04-M062 Shaper, Planner, Slotter Theory & Practice
T13-M511 Machine Shop Math
T13-SS11 Machine Shop P/E Science
T14-C502 Communication

COURSE DESCRIPTIONS
T03-R031 BLUE PRINT READING AND SKETCHING FOR MACHINISTS P/E
Drawing interpretation as applied to the machinist trade.

T04-A520 ARC WELDING
Theory and practice pertaining to identification, selection and safe operation of weld shop equipment such as electric weld power sources, grinders, shears, etc. Identification and application of flux coated weld electrodes machine setting (voltage, amperage, polarity) for various electrode applications. Practice in striking and maintaining electrode arc. Running beads on steel plate using different electrodes. Welding butt, tee and lap joints in various positions (flat, vertical, up/down, etc.) to obtain satisfactory joint as to penetration, inclusion, undercut, build-up, etc.

T04-GS10 RELATED GAS WELDING
Safety in setting up and using oxy-acetylene equipment. Identifying and setting torch for carburizing, neutralizing and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. Identification selecting weld rod 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-M010 IN-PLANT TRAINING
The student will be attached to a shop to experience the atmosphere of the real world of work.

T04-M012 BENCH WORK
Practical shop work pertaining to selection use and care of hand and bench tools such as files, punches, chisels, lay out tools, taps, and dies. Pitting and assembling.

T04-M014 GENERAL OPERATION & CONTROL OF MACHINE TOOLS, THEORY/PRACTICE
Theory and practice pertaining to the safety, care and maintenance of the engine lathe, drilling machines, (sensitive and radial arm) shaper, planer, milling machine, precision grinding machines, power saws, etc. Types of machines, principles of operation, features and advantages of their use, control systems and power systems. General machine shop practices.

T04-M018 POWER SAWS

T04-M020 LATHE OPERATION AND THEORY
Theory and practice pertaining to engine lathe operating. Lathe principles and types. Work holding methods, work set-up techniques, parallel, tapered cylindrical turning, thread cutting, boring, drilling reaming,
use of face plate. Cutting tool types, tool geometry, tool grinding. Speed and feed calculation, lathe gearing for feed and thread outlining thread calculation.

**T04-M022 MILLING MACHINE OPERATION & THEORY**

**T04-M028 GRINDING MACHINE OPERATION & THEORY**
Theory and practice pertaining to grinding machine operation, set-up and care. Types and principles of grinding machines; surface, cylindrical, universal, tool and cutter, and centreless grinding machines. Principles of abrasive wheels, types of abrasives, wheel shapes and their purposes. Wheel identification through standard marking system, manufacture of abrasive wheels. Safety in grinding machine operation.

**T04-M062 SHAPER, PLANER, SLOTTER THEORY & PRACTICE**
Theory and practical shop work involving work set-up, operation and care of shapers, planers and slotters. Cutting tool geometry and application. Cutting speeds and feeds. Horizontal, vertical, and angular surface machinery.

**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: Phythagora's theorem, solution of right triangles, applications, length, area, volume and weight calculations, general problem solving, taper and surface speed calculations.

**T13-S511 MACHINE SHOP P/E SCIENCE**
Metallurgy, expansion, heat, stress and strain, forces and moments and torque, beams, work power, horse power and gear drive systems, belt and pulley systems, centroids.

**T14-C502 COMMUNICATION**
A course similar to T14-C504 but only 20 hours duration.
MAJOR APPLIANCE SERVICE TECHNICIAN

PURPOSE
To develop sufficient knowledge and skills to diagnose and service a wide range of domestic appliances including electric ranges, microwave ovens, washers, dryers, household refrigeration units, and some types of gas appliances. The graduate will also have knowledge of the fundamentals of electricity, elementary circuitry, AC motors and service techniques.

PROGRAM
Major Appliance Service Technician is a 10 month certificate program with a September entry date. The program is designed to train students to understand the operation and repair of most domestic appliances such as ranges, dryers, washing machines, refrigerators, gas appliances and microwave ovens.

ENTRANCE REQUIREMENTS
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended; or
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Graduates have found employment with national manufacturers, independent service companies and dealer-operated service departments. With experience, some graduates have become self-employed.

PROGRAM OUTLINE
Term I
T04-G510 Related Gas Welding
T11-A001 Fundamentals Of Electricity
T11-A003 AC Fundamentals
T11-A007 Electrical Code
T11-A009 Elementary Circuitry Theory
T11-A011 Elementary Circuitry Practical
T11-A013 Electric Ranges Theory
T11-A015 Electric Ranges Practical
T11-A017 Microwave Ovens
T11-A019 Electric Dryers Theory
T11-A021 Electric Dryers Practical
T11-A023 Automatic Washing Machines Theory
T11-A025 Automatic Washing Machines Practical
T11-A027 Refrigeration (Household) Theory
T11-A029 Refrigeration (Household) Practical
T11-A031 Domestic Dishwashers
T11-A033 Solid State
T11-A049 In-Industry-M.A.S.
T13-M515 Appliance Servicing Math
T13-S515 Appliance Servicing Science
T14-C546 Communication, Small Business Organization, And Basic Accounting
T15-A301 Appliance Repair-Gas

COURSE DESCRIPTIONS
T04-G510 RELATED GAS WELDING
Safety in setting up and using oxy-acetylene equipment. Identifying and setting torch for carburizing, neutralizing and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. 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.

T11-A001 FUNDAMENTALS OF ELECTRICITY
Voltage-current relation in an electric circuit. Magnetism and effects of the changing magnetic field, measuring instruments, pilot devices.

T11-A003 AC FUNDAMENTALS
Voltage-current relation in AC circuits containing resistance, inductance, capacitance.

T11-A007 ELECTRICAL CODE
Application of the Canadian Electrical Code in the appliance field leading to a limited license.

T11-A009 ELEMENTARY CIRCUITRY THEORY
Theory and practice of circuits containing switches, relays, pilot devices, etc.

T11-A011 ELEMENTARY CIRCUITRY PRACTICAL
Practical wiring of bell circuits, switching methods, relays, pilot devices and alarm systems.

T11-A013 ELECTRIC RANGES THEORY
Theory of disassembling, testing and replacing parts, checking out circuits, diagnosis of faults and repairs required.

T11-A015 ELECTRIC RANGES PRACTICAL
Disassembling, testing and replacing parts, checking out circuits, diagnosis of faults and repairs required.

T11-A017 MICROWAVE OVENS
Application of microwave ovens. Servicing procedures and safety checks of electrical interlocks.

T11-A019 ELECTRIC DRYERS THEORY
Theory of operation of dryers, testing and checking out circuits, diagnosis of faults, emphasis on circuitry and air circulating system.

T11-A021 ELECTRIC DRYERS PRACTICAL
Disassembling, testing and replacing parts, checking out circuits, diagnosis of faults and repairs required.

T11-A023 AUTOMATIC WASHING MACHINES THEORY
Theory of washing machines, testing replacing of parts, checking out circuits and diagnosis of faults. Emphasis on mechanics of the machines.
T11-A025 AUTOMATIC WASHING MACHINES PRACTICAL
Disassembling, testing and replacement of parts, checking out circuits and diagnosis of faults. Emphasis on mechanical operation.

T11-A027 REFRIGERATION (HOUSEHOLD) THEORY
Basic refrigeration cycle. Replacing compressors, controls, repairing leaks, recharging system with refrigerant. Test run equipment, etc. (The students will use service manuals, parts and price lists, shop work orders, make out invoices, etc.)

T11-A029 REFRIGERATION (HOUSEHOLD) PRACTICAL
Testing units electrical system. Testing refrigeration circuits for problems. Repairing of refrigeration systems, order parts. Ship and receive goods. Use shop service manuals and work order procedure.

T11-A031 DOMESTIC DISHWASHERS
Theoretical and practical repair of dishwashers to include; disassembling, testing and replacing of parts, checking out circuits and diagnosing faults. Emphasis on operation and mechanics of the machine.

T11-A033 SOLID STATE
An introduction to electronics and solid state devices, half and full wave rectification, diode applications, transistors and power supplies. Solid state devices, e.g. dimmers, phototubes timers, speed control and testing of devices in appliance applications. Lab hours with introduction to test equipment and their uses.

T11-A049 IN-INDUSTRY-M.A.S. 1.
To provide Major Appliance program pre-employment students with practical on the job experience.
1. To expose students to actual job conditions and industry requirements.
2. To help instill good work habits and a positive attitude in students.
3. To introduce major appliance service companies to possible technician candidates.
4. To make major appliance service companies aware of College programs and students with a view of providing input.

T13-M515 APPLIANCE SERVICING MATH

T13-S515 APPLIANCE SERVICING SCIENCE
Work and power, gas pressure, heat energy, friction and lubricants, strength of materials, water solutions and water treatment, pH scale, psychrometrics, air and its properties, principles of refrigeration, corrosion, basic semi-conductor theory, abrasives and abrasive products.

T14-C546 COMMUNICATION, SMALL BUSINESS ORGANIZATION- AND BASIC ACCOUNTING
Practical Industrial Communication - students develop the written and oral communication skills needed in their roles as job seekers, employees and junior supervisors. Small Business Organization - students gain an overview of the procedures of structuring, financing, locating, and operating a business. Basic Accounting - through solving a variety of accounting problems, students learn the mechanics and application of basic accounting in business.

T15-A301 APPLIANCE REPAIR-GAS
This is a three week course designed to give appliance service students some understanding of gas piping, service, repair and correct methods of connecting and disconnecting gas appliances such as dryers and ranges.
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 five-month certificate program with two entry dates: September and February. 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,* or equivalent, with Mathematics 9 and Science 9. English 9 is strongly recommended; or
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature students may submit other academic equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher) or successful completion of one of Mathematics 090 or Practical Mathematics-Elementary/Junior High Level, and Science 090. Mature students must also 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 Admissions/Registration for review.

* 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 level.

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 journeyman level, graduates have worked in a variety of positions: mason, foreman, estimator, draftsman, 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
Term 1
T02-M001 Introduction, Materials And Tools Used In Masonry
T02-M002 Practical Work
T02-M003 Masonry Bonds, Theory
T02-M005 Definitions, Theory
T02-M007 Walls, Theory
T02-M009 Estimating, Theory
T03-R019 Blue Print Reading And Sketching For Masonry P/E
T13-M502 Masonry Math

COURSE DESCRIPTIONS
T02-M001 INTRODUCTION, MATERIALS AND TOOLS USED IN MASONRY
History of trade, employment conditions and opportunities, objectives of program, masonry materials, concrete, tools, scaffolds and modern power equipment.

T02-M002 PRACTICAL WORK
Slaking lime/ gauging/ materials/ mixing mortar/ adding additives/mortar boards/handling brick trowel and hand tools; scoring mortar/furrowing (with hand; overhead)/Cross joints and butting; flushing/making storey 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 levelling/ ranging corners/tooothing/racking back/blocking/pausing corner line blocks/ line pins/stretching line/sighting line/setting trigonometry (wig)/tongue brick/setting brick to line/perpends plumb/Cheas and indents/anchoring tech- niques/offsets/corbeled/setting frames/striking joints/clocking joints/stills/coping/ lintels/cleaning masonry/clean work habits taught.

T02-M003 MASONRY BONDS, THEORY
American, Common, English 1/4 and 3/4 bat; Flemish 1/4 and 3/4 bat; Dutch; English Cross; Flemish Cross; Monk; Garden Wall; All Rowlock.

T02-M005 DEFINITIONS, THEORY
Trade terms; Aris; Accelerators; Acoustic; Adobe; Abrasives; Aggregate; Anchor; Angle iron; D.P.C. Asphalt; Attic; Basement; Back filling etc., (over 300 in all).

T02-M007 WALLS, THEORY
Wall types, layout procedures, blueprint reading, anchoring methods, control joints, joint finishing.

T03-R019 BLUE PRINT READING AND SKETCHING FOR MASONRY P/E
Drawing interpretation as applied to the masonry 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, 4 percent calculations and estimating masonry unit quantities, arc lengths of segmental arches, estimating costs. Three multiple choice tests.
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
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Science 301 * Physics 300 is strongly recommended as a more appropriate background for technology.; or
- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science as outlined above. Mature students must also 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 Admissions/Registration for review.

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 I
- MET-1005 Industrial Materials
- MET-1006 Mechanical Drafting
- MET-1013 Electronics (Passive Circuits)

Term 2
- MET-1008 Mechanics (Statics)
- MET-1010 Engineering Economics
- MET-1011 Project Management
- MET-1012 Manufacturing Processes II
- MET-1017 Calculus
- MET-1018 Electronics (Linear & Digital Circuits)
- MET-1023 Computer Assisted Design (optional)

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 I
- MET-1022 Quality Control/Statistical Process Control
- MET-1023 Computer Assisted Design (optional)
- 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 II
- MET-1028 Fluid Power (Pneumatics)
- MET-1031 Advanced Manufacturing I
- MET-1032 Industrial Engineering I
- MET-1033 Tooling Technology And Design
- MET-1041 Instrumentation I
- 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 II
- MET-1038 Advanced Manufacturing II
- MET-1039 Production Planning And Control
- MET-1045 Instrumentation II
- MET-1046 Air Conditioning Systems
- MET-1047 Energy Management
- MET-1048 Noise, Vibration & Balancing
- MET-1049 Engineering Design

COURSE DESCRIPTIONS
MET-1001 MATH
This material covered in this course is mostly a review of the Grade 12 mathematics course 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 you develop written communication skills, particularly those required of technologists, who will be employed in a scientific, engineering or industrial environment.

MET-1004 MANUFACTURING PROCESSES I
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, Metallurgy and Advanced Manufacturing.

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 his 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 presents 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 Dynamics, Stress Analysis and Fluid Mechanics.

MET-1009 REPORT WRITING
This course helps the student polish the communication skills gained in Trimester I. 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 to the difficulties and problems faced by managers today.

MET-1011 PROJECT MANAGEMENT
Technologists are often called upon to manage a project, a co-ordinated 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 career.

MET-1012 MANUFACTURING PROCESSES II
This course serves to re-enforce the concepts presented in theory in Manufacturing Processes I. Practical skills will be developed through applied assignment 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 into 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 Assembler 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 & 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, Automation, and Thermodynamics.

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 on solutions of applied problems that relate to the mechanical discipline.

MET-1021 STRESS ANALYSIS I
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/STATISTICAL PROCESS 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 II
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 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 I
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. gages, cutting tools, fixtures, press dies, injection moulding dies and foundry patterns.)

MET-1032 INDUSTRIAL ENGINEERING I
The course presents the basic principals 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 in it. Class time is for research, analysis, report writing and instructor consultation.

MET-1035 AUTOMATION
This course advances the principles 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 placed on the control aspects of fluid power systems.

MET-1037 INDUSTRIAL ENGINEERING II
This course builds on the Industrial Engineering I program specifically in the areas of systematic planning and managing of industrial facilities, also including systematic material handling analysis.

MET-1038 ADVANCED MANUFACTURING II
A continuation of AMP I, 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 the involvement in a variety of processes. CNC machining 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, 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 I
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 psychrometry 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
This 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 will include electrical/electronic actuators, controllers in conjunction with appropriate sensors and I/O devices.
MET-1045 INSTRUMENTATION II
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 leads 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. Identifications of the methods used to conduct energy management courses 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 & BALANCING
The basic theory of sound and vibration will be introduced so as 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 the 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 Trimester VI technical report project. Final output will be a written and oral project definition.
MEDICAL LABORATORY TECHNOLOGY

PURPOSE
To develop the knowledge and skills required to examine and analyze body fluid 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 hospital to supplement theory and develop practical skills.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation).

* English 300 or 301, Mathematics 300, Chemistry 300 and Biology 300 will be required.

* Preparation at the 300 level in all course areas is preferred. Physics 300 and English 300 are strongly recommended.

or

- Adult Basic Education Pre-Technology (Adult 12) program completion*; and

B - completion of hospital application form. The necessary form will be sent to applicants once a college application and supporting education documents are received; and

C - may include an orientation and interview conducted by the hospital training centre; and

D - submission of immunization records after notification of acceptance is received.

Mature Student Admission.* Mature students may submit the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 in lieu of 20 credits; however, they must have specific credits in mathematics, English, chemistry and one other science, as outlined in (A) above. Mature students must also meet entrance requirements (B) through (D) and be 20 years of age on or before September 30 in the year of registration.

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 Committees may give preference to candidates possessing 20 high school credits (with standing in 300 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 Admissions/Registration Office at 632-2327 to confirm the exact date.

EMPLOYMENT POTENTIAL
Upon successful completion of the program, and with the hospital's recommendation, the graduate is eligible to write the Canadian Society of Laboratory Technologists (C.S.L.T.) national examinations which lead to a certificate as a Registered Medical Laboratory Technologist (R.T.), a nationally-recognized certification. Successful completion of these exams will qualify the graduate for membership in the C.S.L.T.

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
H03-L101 Anatomical Structure & Function
H03-L107 Introductory Chemistry
H03-L109 Microscopy
H03-L115 Applied Laboratory Mathematics
H03-L116 General Knowledge
H03-L117 Spectrophotometry
H03-L120 Computers (optional)

Term 2
H03-L201 Anatomical Structure & Function
H03-L202 Clinical Microbiology
H03-L203 Clinical Chemistry
H03-L204 Hematology
H03-L205 Histotechnology
H03-L206 Immunohematology
H03-L220 Computers (optional)
H03-L222 Clinical Microbiology Laboratory 202
H03-L223 Clinical Chemistry Laboratory 203
H03-L224 Hematology Laboratory 204
H03-L225 Histotechnology Laboratory 205
H03-L226 Immunohematology Laboratory 206
H03-L230 Immunology

Term 3
H03-L302 Clinical Microbiology
H03-L303 Clinical Chemistry
H03-L304 Hematology
H03-L305 Histotechnology
H03-L306 Immunohematology
H03-L322 Clinical Microbiology Laboratory 302
H03-L323 Clinical Chemistry Laboratory 303
H03-L324 Hematology Laboratory 304
H03-L325 Histotechnology Laboratory 305
H03-L326 Immunohematology Laboratory 306

COURSE DESCRIPTIONS
H03-L101 ANATOMICAL STRUCTURE & 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 indepth study of the body systems. In the study of systems, gross and micro anatomical structures and the basic physiology and pathology are examined. The following systems are included—skeletal, muscle, 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. Seminar sessions supplement the theory and give individuals an opportunity to do assignments and review.

H03-L108 MICROSCOPY
This course provides knowledge of lecture, function, and application of brightfield microscope. Included is the operation and application of specialized microscopes.

H03-L115 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-L116 GENERAL KNOWLEDGE
In general knowledge, the student will learn the principles and practice of the safe techniques used to deal with clinical specimen. 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-L120 COMPUTERS
This course is designed to provide the student with an introduction to computer awareness. Each student shall have his/her own IBM PC on which to learn basic word processing, data base, and the use of spreadsheets.

H03-L201 ANATOMICAL STRUCTURE AND FUNCTION
This course is a continuation of H03-L101.

H03-L202 CLINICAL MICROBIOLOGY
Principles and practice of isolation, identification, and antimicrobial susceptibility testing of common human pathogenic and normal flora micro-organisms (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 is a branch of medicine that deals with the study of blood. This course deals with origin, development, and nomenclature of blood and marrow cells, and the manner in which these cells are affected by disease, such as in anemias and leukemias. Prevention of spontaneous bleeding and control of traumatic hemorrhage are studies under hemostasis.

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 staining procedures.

H03-L206 IMMUNOHEMATOLOGY
A course in transfusion science in terms of basic immunology, inheritance, and synthesis of blood group systems and the activity of the 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-L220 COMPUTERS
This course is designed to provide the student with an introduction to computer awareness. Each student shall have his/her own IBM PC on which to learn basic word processing, data base, and the use of spreadsheets.

H03-L222 CLINICAL MICROBIOLOGY LABORATORY 202
This course is the laboratory training for H03-L202 Clinical Microbiology.

H03-L223 CLINICAL CHEMISTRY LABORATORY 203
This course is the laboratory training for H03-L203 Clinical Chemistry.

H03-L224 HEMATOLOGY LABORATORY 204
This course is the laboratory training for H03-L204 Hematology

H03-L225 HISTOTECHNOLOGY LABORATORY 205
This course is the laboratory training for H03-L205 Histotechnology. Credit is reflected in Term 3.

H03-L226 IMMUNOHEMATOLOGY LABORATORY 206
This course is the laboratory training for H03-L206 Immunohematology.

H03-L230 IMMUNOLOGY
A basic course in Immunology which is a prerequisite for Immunohematology. Mechanism of the immune response, physiology, and function of the T&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 H03-L202.

H03-L303 CLINICAL CHEMISTRY
This is a continuation of H03-L303.

H03-L304 HEMATOLOGY
This is a continuation of H03-L204.

H03-L305 HISTOTECHNOLOGY
This is a continuation of H03-L205.

H03-L306 IMMUNOHEMATOLOGY
This is a continuation of H03-L206.

H03-L322 CLINICAL MICROBIOLOGY LABORATORY 302
This course is laboratory training for H03-L302 Clinical Microbiology.

H03-L323 CLINICAL CHEMISTRY LABORATORY 303
This course is laboratory training for H03-L303 Clinical Chemistry.

H03-L324 HEMATOLOGY LABORATORY 304
This course is laboratory training for H03-L304 Hematology.

H03-L325 HISTOTECHNOLOGY LABORATORY 305
This course is laboratory training for H03-L305 Histotechnology.

H03-L326 IMMUNOHEMATOLOGY LABORATORY 306
This course is laboratory training for H03-L306 Immunohematology
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 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 - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with English 300, Mathematics 300 and two of Physics 300, Chemistry 300, and Biology 300. (It is strongly recommended that Physics 300 be one of the two sciences.)
- Adult Basic Education Pre-Technology (Adult 12) program completion;
- satisfactory reading proficiency, as measured by a reading test administered by the college;
- completion of a hospital application form, and a two-page autobiography. Details on this requirement will be sent to the applicant once a college application form and supporting education documents are received;
- may include attendance an orientation and interview conducted by the hospital training centre;
- submission of immunization records after notice of acceptance is received

Mature Student Admission. Mature students may submit the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science(s) at the 300 level, as outlined in (A) above. Mature students must also meet entrance requirements (B), (C), (D) and (E) 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 Admissions/Registration for review.

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.

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 Admissions Office at 632-2327 in regard to the deadline date for a specific program.

EMPLOYMENT POTENTIAL
After successful completion of training, and with the hospital's recommendation, the graduate will be eligible to write examinations that lead to a diploma as a Registered Radiological Technologist R.T. (R). and qualification for membership in the Canadian Association of Medical Radiation Technologists.

Program graduates are employed in hospitals and clinical x-ray departments, laboratories, and in 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.

As this program is nationally accredited, Canadian certification as a R.T.(R) is recognized across Canada and in Australia, Great Britain, Holland and Switzerland.

PROGRAM OUTLINE
Term 1
H04-X102 Radiographic Positioning
H04-X103 Physics Of Radiographic Imaging
H04-X105 Apparatus And Accessory Equipment
H04-X107 Patient Care & Interpersonal Skills
H04-X108 Radiation Protection
H04-X109 Principles Of Radiographic Exposure & Imaging
H11-N120 Human Anatomy And Physiology

Term 2
H04-X210 Physics And Protection
H04-X215 Radiobiology
H04-X216 Radiographic Positioning
H04-X217 Apparatus And Accessory Equipment
H04-X218 Principles Of Radiographic Exposure & Imaging
H04-X219 Patient Care & Interpersonal Skills
H11-X220 Human Anatomy And Physiology

COURSE DESCRIPTIONS
H04-X102 RADIOGRAPHIC POSITIONING
Term 1 - 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
2) mastery testing.

H04-X103 PHYSICS OF RADIOGRAPHIC IMAGING
This course will deal with basic physics and radiation physics as they apply to diagnostic x-ray and radiotherapy. Topics will include structure of matter, electrostatics, electric current, magnetism, electromagnetism, AC, motors generators, electronics, optics, electromagnetic radiation, x-ray production, attenuation, processes and instruments of radiation detection, ultrasound, physics of computer tomography.

H1104-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 & 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 & IMAGING
Principles of diagnostic imaging, exposure methods of imaging, processing equipment, recording material, storage of film, intensifying screens, film holders; processing; manual, automatic, developer, fixer, washing and drying, quality and the radiographic image; density, factors controlling and influencing. Density contrast: radiographic, film and course contrast. Contrast: controlling and influencing factors; objective and subjective contrast.

H04-X210 PHYSICS AND PROTECTION
This course will build on the Term I courses: physics of radiographic imaging and radiation protection. The course will allow the student to apply the principles of physics to radiology, also, the student will understand advanced principles of radiation practices and regulations.

H04-X215 RADIOBIOLOGY
The student will develop an understanding of the biological effects of radiation so that minimum exposure to patients and personnel is realized. Topics covered will include somatic, genetic effects, acute and delayed effects and an awareness of risks to patients and personnel.

H11-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. Prerequisite: H11-N120 Human Anatomy and Physiology.
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 two entry dates: September and February. 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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended;
- Adult Basic Education 7-10 Program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics-Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also be 20 years of age or before September 30 in the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

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 training through the college's Extension Division 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 journeyman level, work as journeyman mechanics, shop foremen, 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.

PROGRAM OUTLINE
T01-T011 Shop Practice & Hand Tools - Theory
T01-T012 Shop Practice & Hand Tools - Practical
T01-T013 Engine I - Theory
T01-T014 Engine II - Practical
T01-T015 Electrical Systems - Theory
T01-T016 Electrical Systems - Practical
T01-T017 Fuel Systems - Theory
T01-T018 Fuel Systems - Practical
T01-T019 Tune-Up - Theory
T01-T020 Tune-Up - Practical
T01-T021 Standard Transmissions - Theory
T01-T022 Standard Transmissions - Practical
T01-T023 Rear Axles & Drivelines - Theory
T01-T024 Rear Axles & Drivelines - Practical
T01-T025 Brakes-Hydraulics - Theory
T01-T026 Brakes-Hydraulics - Practical
T01-T027 Steering & Suspension - Theory
T01-T028 Steering & Suspension - Practical
T01-T029 Automatic Transmissions - Theory
T01-T030 Automatic Transmissions - Practical
T01-T031 Engines-Live Shop
T01-T034 Electrical Repairs & Adjusting - Live Shop
T01-T035 Fuel Systems - Repairs & Adjusting - Live Shop
T01-T036 Tune-Up - Live Shop
T01-T037 Transmission Overhaul Standard - Live Shop
T01-T038 Rear Axles & Drivelines - Live Shop
T01-T039 Brakes - Hydraulic & Disc Power - Live Shop
T01-T040 Steering Repairs - Live Shop
T01-T041 Automatic Transmission Repairs - Live Shop
T04-G510 Related Gas Welding
T04-M510 Related Machine Shop
T13-M508 Motor Vehicle Mechanic Technician P/E Math
T13-S508 Power Mechanics Science
T14-C504 Communication

COURSE DESCRIPTIONS
T01-T011 SHOP PRACTICE & 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 PRACTICE & 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-T013 ENGINE I - 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-T014 ENGINE II - PRACTICAL
Disassembly, cleaning, precision measuring, inspection, machining, fitting and reassembly of internal combustion engines to manufacturer's specifications.

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-T020 TUNE-UP - PRACTICAL
Use of tune-up test equipment for diagnosing and calibrating running engines.

T01-T021 STD. TRANSMISSIONS - THEORY
Clutch and pressure plate assemblies, three and four speed synchromesh transmissions, simple planetary gears and overdrive, construction, operating and service fundamentals.

T01-T022 STD TRANSMISSIONS - PRACTICAL
Disassembly, inspection of parts and reassembly of components to manufacturer's specifications.

T01-T023 REAR AXLES & DRIVELINES - THEORY
Gears and bearings, tooth patterns, universal joints, positraction and limited slip differentials, transaxles, axle shafts, etc.

T01-T024 REAR AXLES & DRIVELINES - PRACTICAL
Disassembly, inspection and reassembly of gears and bearings, tooth patterns, universal joints, positraction and limited slip differentials, transaxles, axle shafts, etc.

T01-T025 BRAKES-HYDRAULICS - THEORY
Hydraulic principles, singles 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-HYDRAULICS - 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 & SUSPENSION - THEORY
Springs, shocks, wheel balance, steering geometry, steering gears, steering alignment.

T01-T028 STEERING & SUSPENSION - PRACTICAL
Removal and installation procedures on suspension components, steering gears, 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-T034 ENGINES - LIVE SHOP
This includes engine removal, disassembly, inspection, cleaning, and measuring of all components to determine their serviceability. Precision fitting of pistons, pins, rings, bearings, and shafts is also covered as well as reconditioning of cylinder heads and valve mechanisms. Complete engine reassembly, installation, adjustment and braking is also included. All work is performed on vehicles in daily use.

T01-T056 ELECTRICAL - REPAIRS & ADJUSTING - 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 & ADJUSTING - 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 & 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 housing, (integral, removable carrier, and independent), crown, art pinion sets, (spur level, spiral level, hypoid, hunting, non-hunting, partial non-hunting, straddle and over hung mounted) differential units (2 & 4 pinion design conventional and spec 1 traction pos- 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, 3/4 floating and semi floating), seals (dynamic and static), drive liner (torque tube, hat-ch-in) universal joints (ball and trunnion, cross and roller, constant velocity).

T01-T066 BRAKES - HYDRAULIC & DISC POWER - LIVE SHOP
The concerns are the construction, operation and service features of the braking systems presently in use today (drum & 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 TRANS 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 trouble shooting.

T04-G510 RELATED GAS WELDING
Safety in setting up and using oxy-acetylene equipment. Identifying and setting torch for carburizing, neutralizing, and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. 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.

T13-M508 MOTOR VEHICLE MECHANIC TECHNICIAN P/E MATH
Individual progress math. Course utilizing Diagnostic Test material 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, Pythagoras theorem, perimeter/circumferences, areas, various figures, volume/capacity of commonly used shapes of containers.

T13-S508 POWER MECHANICS SCIENCE
Electricity and magnetism, Atomic theory, static electricity, condensers, circuits, batteries, transformers, DC motors, AC and AC generators, hydraulics, pressure, Pascal's principle, brakes and brake fluids, kinetic energy, centripetal force, matter, properties of solids, liquids and gases. Heat — temperature scales, expansion due to heat, heat transfer; machines — simple machines, Work power, gear trains, gear ratios.

T14-C504 COMMUNICATION
A self-paced practical course that develops communications skills from four viewpoints: job-seeker, employee, junior supervisor, small business owner. The course is tailored to fit the needs of individual students and the requirements of advisory boards.
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 is a cooperative education program that aims at 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 four-week terms in the work force.

ENTRANCE REQUIREMENTS
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended; or
- Adult Basic Education 7-10 Program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher). In lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics-Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also 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 Admissions/Registration for review.

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 Extension Division 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 journeyman level, work as journeyman mechanics, shop foremen, 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.

PROGRAM OUTLINE
T01-C011 Shop Routine (theory in college)
T01-C012 Shop Routine (practice in college)
T01-C013 Shop Routine (practice in college)
T01-C014 Brakes, Suspension, Steering & Alignment (theory in college)
T01-C015 Brakes, Suspension, Steering & Alignment (practice in college)
T01-C016 Brakes, Suspension, Steering & Alignment, (practice in college)
T01-C017 Electrical & Induction Systems (theory in college)
T01-C018 Electrical & Induction Systems (practice in college)
T01-C019 Electrical & Induction Systems (practice in industry)
T01-C020 Transmissions & Drives (theory in college)
T01-C021 Transmissions & Drives (practice in college)
T01-C022 Transmissions & Drives (practice in industry)
T01-C023 Engines (theory in college)
T01-C024 Engines (practice in college)
T01-C025 Engines (practice in industry)
T04-G510 Related Gas Welding
T13-M508 Motor Vehicle Mechanic Technician P/E Math
T13-S609 Automotvo Co Op Science
T14-C504 Communication

COURSE DESCRIPTIONS
T01-C011 SHOP ROUTINE (THEORY IN COLLEGE)
Demonstrate the ability to select and use the proper tool for each specific job. Develop skill in locating and extracting information from service manuals, drawings, schematics and service bulletins.

T01-C012 SHOP ROUTINE (PRACTICE IN COLLEGE)
Demonstrate the ability to select and use the proper tool for each specific job. Develop skill in locating and extracting information from service manuals, drawings, schematics and service bulletins.

T01-C013 SHOP ROUTINE (PRACTICE IN INDUSTRY)
Understand importance of developing safe working habits to avoid injury to self and fellow workers and to prevent damage to equipment and customers' vehicles.

T01-C014 BRAKES, SUSPENSION, STEERING & ALIGNMENT (THEORY IN COLLEGE)
Understand the design and operation of hydraulic service brakes and gain knowledge to carry out quality repair of various systems. Understand the design, operation and repair of suspension and steering gear to provide safe comfortable handling of a vehicle.

T01-C015 BRAKES, SUSPENSION, STEERING & ALIGNMENT (PRACTICE IN COLLEGE)
Understand the design and operation of hydraulic service brakes and gain knowledge to carry out quality repair of various systems. Understand the design, operation and repair of suspension and steering gear to provide safe comfortable handling of a vehicle.

T01-C016 BRAKES, SUSPENSION, STEERING AND ALIGNMENT (PRACTICE IN INDUSTRY)
Demonstrate the ability to carry out repairs to brakes, steering and suspension systems in industry.

T01-C017 ELECTRICAL AND INDUCTION SYSTEMS (THEORY IN COLLEGE)
Establish a basic understanding of electricity regarding generating, regulating, usage, storage and measuring.

T01-C018 ELECTRICAL AND INDUCTION SYSTEMS (PRACTICE IN COLLEGE)
Understand electricity relating to charging, starting and ignition circuits.

T01-C019 ELECTRICAL AND INDUCTION SYSTEMS (PRACTICE IN INDUSTRY)
Demonstrate ability to effect electrical repair to customers' cars in industry.
TO1-C020 TRANSMISSIONS AND DRIVES (THEORY IN COLLEGE)
Understand the construction, operation, service, repair and diagnostic procedures relating to standard and automatic transmissions.

TO1-C021 TRANSMISSIONS AND DRIVES (PRACTICE IN COLLEGE)
Demonstrate ability to disassemble, inspect, adjust and repair standard and automatic transmissions following procedures outlined in the service manual.

TO1-C022 TRANSMISSIONS & DRIVES (PRACTICE IN INDUSTRY)
Demonstrate ability to diagnose and repair transmissions in industry.

TO1-C023 ENGINES (THEORY IN COLLEGE)
Understand the principles of operation and the function and relation of component parts of the internal combustion engine. Includes classification of engines, engine terminology, components, engine lubrication and cooling.

TO1-C024 ENGINES (PRACTICE IN COLLEGE)
Demonstrate ability to disassemble, inspect, adjust, measure and repair an engine.

TO1-C025 ENGINES (PRACTICE IN INDUSTRY)
Demonstrate ability to diagnose and repair a customer's engine in industry.

TO4-G510 RELATED GAS WELDING
Safety in setting up and using oxy-acetylene equipment. Identifying and setting torch for carburizing, neutralizing and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. 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. Safety operating flame cutting equipment cutting various thicknesses of steel plate.

T13-M508 MOTOR VEHICLE MECHANIC TECHNICIAN P/E 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 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-S608 AUTOMOTIVE CO-OP SCIENCE
Basic precision measurement, DC electrical circuits, hydraulics, gears and pulleys, air conditioning and heat.

T14-C504 COMMUNICATION
A self-paced practical course that develops communication skills from four viewpoints: job-seeker, employee, junior supervisor, small business owner. The course is tailored to fit the needs of individual students and the requirements of the advisory boards.
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 (M.A.R.N.). To provide the opportunity for vertical career mobility in nursing and enable individuals to re-shape initial vocational goals, the program was designed in conjunction with the Practical Nursing program. Nursing has both theoretical and practical components and college instructors directly supervise the weekly practical experiences planned for the student.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) including English 300; Mathematics 300, 301, or 200; and one science at the 300 level (Chemistry 300 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 - successful completion of the prescribed reading skills test at the required competency level;

and

C - good health. *Immunizations are required of all students and must commence as indicated upon notification of acceptance into the program

and

D - must provide evidence of current certification in C.P.R. at the Basic Rescuer in the year of admission. Yearly re-certification is required.

Mature Student Admission. Mature student applicants are not required to have complete Grade 12 standing but must have specific credits in English, mathematics and science as noted in (A) above. As well, mature students must meet entrance requirements (B) and (C), 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 Admissions/Registration for review.

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, and Chemistry 300 or Mathematics 300, 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-N102 Introduction To Nursing
H11-N103 Nursing Practice
H11-N120 Human Anatomy And Physiology
H11-N202 Nursing
H11-N203 Nursing Practice
H11-N220 Human Anatomy And Physiology
H11-S101 Social Science
H11-S201 Social Science
H11-S301 Social Science (3)

Year 2
Term 2
B13-S201 Introduction To Sociology (DNUR)
B13-S302 Social And Health Problems (DNUR)
H11-N302 Nursing
H11-N303 Nursing Practice
H11-N311 Nursing Microbiology
H11-N402 Nursing
H11-N403 Nursing Practice
H11-N405 Trends In Health Care
H11-N406 Community Health

COURSE DESCRIPTIONS
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.

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.

H11-N102 INTRODUCTION TO NURSING
This course is designed to introduce concepts of health as they relate to the fulfillment of human need and thereby maintain physiologic, psychic and social integrity. It illustrates the way in which some of these needs are met by the client and his significant others. The concept of adaptation is used as a basis for determining a clients
position on the continuum. The course focuses on clients of any development phase whose integrity is not disrupted and who are adapting to stimuli. The knowledge and skills presented provide a basis for nursing interventions based on the nursing process.

H11-N103 NURSING PRACTICE
This course provides the student with the opportunity to apply the knowledge gained and to practice skills attained in INTRODUCTION TO NURSING, H11-N102.

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-N202 NURSING
This course focuses on an understanding of the adaptation problems that affect clients of any age, whose problems or potential problems minimally disrupt their integrity. Provision is made for the student to enhance his/her ability to utilize the nursing process in assisting clients and their significant others to cope with adaptation problems that occur in all phases of the life cycle. It will also provide an introduction to the role and functions of the graduate practical nurse. Prerequisite: H11-N102, H11-N103.

H11-N203 NURSING PRACTICE
This course provides the student with the opportunity to apply the knowledge gained and to practice skills attained in Nursing H11-N202. Prerequisite: H11-N102 and H11-N103.

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 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. Prerequisite: H11-N120 Human Anatomy and Physiology.

H11-N302 NURSING
This course focuses on the promotion of adaptation of clients in any phase of development who are experiencing commonly occurring disruptions of integrity. The nursing process is used as a systemic method of organizing and providing care to clients and their significant others in order to facilitate adaptation. The rights and concerns of clients are emphasized as being central to the care for which the nurse is responsible.

H11-N303 NURSING PRACTICE
This course provides the students with the opportunity to apply and become skillful in implementing the knowledge and skills obtained in Nursing H11-N302.

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-N402 NURSING
This course focuses on assessment and interpretation of adaptive and maladaptive responses that occur when clients in any development phase are confronted with crisis situations and/or medical emergencies. Ways to assist clients and their significant others to adapt in crisis situations and/or medical emergencies are discussed. The nursing process is the method used to facilitate adaptation. The moral, ethical and legal responsibilities of the graduate nurse are given further emphasis. Prerequisite: H11-N302.

H11-N403 NURSING PRACTICE
This course provides the student with the opportunity to apply and become skillful in implementing the knowledge and skills obtained in Nursing H11-N402. Prerequisite: H11-N302 and H11-N303.

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. Prerequisite: H11-N302 and H11-N303.

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-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
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-socio-logical 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: H11-S101

H11-S301 SOCIAL SCIENCE
This is a continuation of the format utilized in Part II 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.
PURPOSE
To update knowledge and skills in nursing fundamentals, needs and care of adults in health and illness, and to review current trends and issues in nursing.

PROGRAM
The nursing refresher programs are full-time day programs that include some evening clinical practice. Each program is organized in units and modules to facilitate individualized study and learning. Each module includes specific objectives, readings, learning activities and related clinical practice. Students progress at their own pace. The L.P.N. Refresher program is seven weeks in length and is available for practical nurses holding current licenses who wish to update their knowledge and skills and for formerly-licensed practical nurses who require updating to renew their license. The R.N. Refresher program runs for eight weeks and is suitable for formerly-registered nurses who require updating to renew their registration and for currently-registered nurses who want to update their knowledge and skills. The R.P.N. Refresher program also is eight weeks long and is available for formerly-registered psychiatric nurses who require updating to renew their registration.

ENTRANCE REQUIREMENTS
A - completion of a supplementary application form;
B - completion of the prescribed reading skills test at the required level;
C - C.P.R. certification at the Basic Rescuer level or higher (before the program start date);
D - verification of nursing status, as specified below* to be submitted with the admissions application.

*L.P.N. Refresher: acceptable proof is a letter from the Registrar for Licensed Practical Nurses or the last license held or photostatic copy.

*R.N. Refresher: acceptable proof is a letter from the M.A.R.N. (Manitoba Association of Registered Nurses) or other Canadian licensing jurisdiction confirming eligibility for registration or status regarding registration; or last M.A.R.N. (or other Canadian licensing jurisdiction) registration card or photostatic copy.

*R.P.N. Refresher: acceptable proof is a letter from the Registered Psychiatric Nurses Association of Manitoba or the last R.P.N.A.M. card or photostatic copy.

Manitoba residents who have never been licensed in Manitoba must contact the appropriate association listed below:

The Registrar
Manitoba Association of Licensed Practical Nurses
615 Kernaghan Avenue
P.O. Box 249
Transcona, Manitoba, R2C 2Z9

or

The Registrar
Manitoba Association of Registered Nurses
647 Broadway Avenue
Winnipeg, Manitoba, R3C 0X2
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 10 month program with one entry date: September. 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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended; or
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also 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 Admissions/Registration for review.

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 Extension Division, 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 journeyman level are as plumbers, steamfitters or sprinkler and fire-protection installers. After gaining work experience, some graduates have moved into positions as foremen, 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.

PROGRAM OUTLINE
T03-R013 Blueprint Reading & Sketching for Plumbing PE
T04-G520 Related Gas Welding
T13-M513 Plumbing P/E Math
T13-S513 Plumbing Science
T14-C502 Communication
T15-P001 Introduction to the Piping Trades & General Information
T15-P002 General Shop Work - Practical
T15-P003 Piping & Materials - Theory
T15-P004 Piping & Materials - Practical
T15-P005 Regulations & Project Installations - Theory
T15-P006 Project Installations - Practical
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

COURSE DESCRIPTIONS
T03-R013 BLUEPRINT READING & SKETCHING FOR PLUMBING PE
Drawing interpretation and preparation as applied to the plumbing trade.

T04-G520 RELATED GAS WELDING
The student is taught the basics of oxy-acylene welding by means of lectures in the classroom and practical demonstrations in the welding shop. He or she 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 - oxy-acylene cutting and welding, brazing and silver brazing in flat position. One week - arc welding in flat position.

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 cyclinear) and offset calculations.

T13-S513 PLUMBING SCIENCE
Fractions, decimals, measurements, percent, square root, area (rectilinear circular sphere), volume, pressure head, ratio and proportion 45 degree and 60 degree offsets, rolling offsets, properties of water, matter, compounds, states of matter, heat and temperature, sensible and latent heat, temperature conversion, specific heat, relative density, pH, hardness, water treatment, mechanics — simple machines, M.A. efficiency calculation. Corrosion — Chemical and electrochemical, galvanic series, galvanic cell, methods of protecting against corrosion. Metals and Alloys — reasons for alloying, conductivity expansion, physical and mechanical properties. Hydraulics — pneumatics, adhesion-cohesion, forces of pressure and weight, atmospheric pressure, absolute pressure, Boyle's law, siphons.

T14-C502 COMMUNICATION
A course similar to T14-C504 but only 20 hours duration. T14-C504 is described as: A self-paced practical course that develops communications skills from four viewpoints - job-seeker, employee, junior supervisor, small business owner. The course is tailored to fit the needs of individual students and the requirements of program Advisory Boards.

T15-P001 INTRODUCTION TO THE PIPING TRades & GENERAL INFORMATION
Type of work, tools, materials, equipment, safety.

T15-P002 GENERAL SHOP WORK- PRACTICAL
Identification and use of tools, fittings and materials; material handling, safety and rigging; use of torches and lead work.

T15-P003 PIPING AND MATERIALS- THEORY
Cast iron, galvanized iron, copper, lead, plastic, glass, uses of each, methods of assembling, supporting, handling, storing and types of tools used with each.
T15-P004 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, victanic, flanged and compression ring fittings. The assembly of valves and some basic pump installations.

T15-P005 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-P006 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.

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 and operating the system.

T15-P009 BASIC SPRINKLER/FIRE PROTECTION - THEORY
The piping trades student 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) make plumbing-heating and sprinkler contractors aware of college programs and students, with a view to providing input.
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 and 3rd Class programs are offered on alternate years to the 3rd Class. Contact the Admissions/Registration office for scheduled entry dates.

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
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with English 200 or 201, Mathematics 200, and one of Physics 200 or Chemistry 200;
- Adult Basic Education 11A with supplemental mathematics and chemistry topics.

Mature Student Admission. Mature students may submit either the Manitoba Education and Training Grade 12 Diploma or G.E.D. 12 standing; however, they must have specific credits in Mathematics 200 or 290 academic and either Physics 200 or 290 or Chemistry 200 or 290. Mature students must be 20 years of age on or before September 30 of the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

3rd Class
A - 4th Class Certificate from a provincial Department of Labour;

B - specific credits in Mathematics 200 or 290 (academic) and one of Physics 200 or 290 or Chemistry 200 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.

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 License and specific credits in Mathematics 300 and Physics 300

or
C - if graduation took place prior to five years ago: 3rd Class License 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 Admissions Office 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 & Controls
T06-S124 Fuels & 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 I

3rd Class
T06-S202 Mechanical Drafting
T06-S221 Thermal Studies
T06-S223 Instrumentation
T06-S224 Fuels & Combustion
T06-S225 Turbines & Engines
T06-S231 Mechanics
T06-S233 Electrical
T06-S234 Boilers
T06-S235 Refrigeration
T10-M161 Mathematics (P.E. 3rd)
T14-C224 Communications II

2nd Class
T06-A311 Control Instrumentation
T06-A314 Asme Codes
T06-A321 Thermodynamics
T06-A324 Water Treatment & Combustion
T06-A331 Applied Mechanics
T06-A334 Boilers, Pumps, & Piping
T06-B302 Mechanical Drawing
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 Engineers normal scope of work. It is designed as a follow-up to studies in drafting and blueprint reading achieved at the fourth and third class level.

T06-B335 REFRIGERATION
This course covers all electrical theory for a Power Engineer to operate electrical equipment in a modern power generating station at the second 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 non-destructive test methods.

T06-B325 TURBINES AND ENGINES
This course continues the topics introduced in 3rd class T06-S225, but deals in more depth with the principles and operating procedures of steam turbines, gas turbines, and internal combustion engines.

T06-S102 BLUEPRINT READING
Lettering: description of lines and weights; orthographic and isometric views; tolerances; sectional views; interpretation; freehand sketching.

T06-S123 INSTRUMENTATION & CONTROLS
A fundamental course given to assist student to understand the principles involved for measuring and controlling variables found in power plants.

T06-S125 ENGINES
This course provides an introduction to steam engines, steam turbines, internal combustion engines, lubrication, etc.

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 boilers construction, regulations, fittings, operation, etc.

B - 164
TOG-S135 REFRIGERATION
A basic course dealing with refrigeration equipment used in commercial and industrial processes. Refrigerants, components, controls, construction, etc. are the main topics.

TO6-S202 MECHANICAL DRAFTING
Drawing orthographic, isometric, and oblique views. Sketching of power plant systems. Types of screw threads, couplings, and drive keys.

TO6-S221 THERMAL STUDIES
This is an intermediate type course which should have T06-S121 as a prerequisite. It increases the depth of knowledge from that course and approaches the course from a more mathematical concept.

TO6-S223 INSTRUMENTATION
This course follows the theory presented in T06-S123. It introduces transmission, control theory and expands on information presented in T06-S123.

TO6-S224 FUELS & WATER TREATMENT
This course follows T06-S124 and introduces calculations from chemical formulas, investigation of liquid solution, ionization, acids, bases, water testing, etc.

TO6-S225 TURBINES & ENGINES
This course follows T06-S125 with the larger and more complex systems being highlighted. This also introduces the various types and arrangements of industrial plants.

TO6-S231 MECHANICS
This course follows 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.

TO6-S233 ELECTRICAL
This course follows T06-S133 but with considerably more emphasis on electrical instruments, measuring applications, calculations, etc.

TO6-S234 BOILERS
This course follows T06-S134 but deals in more depth with safety practices, power boilers, heating boilers, and heating, ventilating and air conditioning systems.

TO6-S235 REFRIGERATION
This course follows T06-S135 but deals also with air compressors.

TO6-S322 COMPUTERS
This is an introductory course to computers including the microcomputer and some of their 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.

T10-A361 MATHEMATICS
This course will provide the practical and theoretical aspects of mathematics essential for problem-solving in the technical courses of second class Power Engineering. The sequence of material will be matched to the needs of other courses being studied concurrently.

T10-M161 MATHEMATICS (P.E.-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 (P.E. 3RD)
This course extends the M161 course 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 into field applications.

T14-C124 COMMUNICATIONS I
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.

T14-C224 COMMUNICATIONS II
A continuation of 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.
**PRE-TECHNOLOGY TRAINING FOR WOMEN**

**PURPOSE**
To develop the knowledge, skills and self-confidence required for college technology programs or related employment.

**PROGRAM**
Pre-Technology Training for Women is a 16-week program with a September entry date. The program, designed to be an exploratory program, should not be seen as an end in itself, but rather as a bridge to specialized training or employment in a technology area. It will assist the student in discovering the skills and knowledge required for technology programs or in related employment.

**ENTRANCE REQUIREMENTS**
A - 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) at the 200 or 250 level;  
or  
- Adult Basic Education 11A, 11B, or 11C;  
or  
- G.E.D. standing (scores in each of the five tests must be 43 or higher);  
and  
B - attendance at an orientation session.

**EMPLOYMENT POTENTIAL**
Graduates of this program have found themselves more self-confident and better prepared for entry into specific technology programs or related employment.

*Please note that this program is designed primarily to familiarize women with training and employment in technical and science-based fields. Those students who successfully complete Pre-Technology for Women must still meet the stipulated entrance requirements for technology programs.*

**PROGRAM OUTLINE**
B25-J201 Pre-Technology for Women - Classroom  
B25-J202 Pre-Technology for Women - Workplace

**COURSE DESCRIPTIONS**

**B25-J201 PRE-TECHNOLOGY FOR WOMEN - CLASSROOM**
Reading and study skills, confidence building in mathematics and sciences, fundamentals of computer programming and exposure to technology programs and related laboratory activities. Included are self-awareness exercises, confidence building, the study and practice of communications and assertiveness skills. Students will learn to realistically appraise their skills and abilities to plan a training route for a technology of their choice.

**B25-J202 PRE-TECHNOLOGY FOR WOMEN - WORKPLACE**
The work placement component is an opportunity to observe and interact with skilled technologists in a community industrial setting. This will enable the student to practice job readiness, job-search skills, discover barriers and assess suitability for that type of work. Future employment contacts in the technology fields will be established.
RADIATION THERAPY

PURPOSE
To develop the knowledge and skills required to work with the treatment of disease, primarily malignant, by use of ionizing radiation.

PROGRAM
Radiation Therapy is a 24-month program followed by an optional five-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 radiotherapy technologist's daily work. It includes lectures and demonstrations in professional ethics, patient care, anatomy and physiology, elementary pathology, 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 - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with English 300 or 301, Mathematics 300, and Physics 200 or 300 (If Physics is at the 200 level, then another 300-level Science is required);
- Adult Basic Education Pre-Technology (Adult 12) program completion;

B - satisfactory reading proficiency, as measured by a reading test administered by the college;
and

C - completion of a hospital application form and a two page autobiography. Details on this requirement will be sent to the applicant once a college application form and supporting education documents are received;
and

D - attendance at a tour and interview conducted by the Selection Committee of the Manitoba Cancer Treatment and Research Foundation;
and

E - submission of immunization records after notice of acceptance is received.

Mature Student Admission. Mature students may submit the Manitoba Education Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science at the 300 or 301 level, as outlined in (A) above. Mature students must also meet entrance requirements (B) and (C) 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 Admissions/Registration for review.

This is a special selection program. The Manitoba Cancer Treatment and Research Foundation Selection Committee will interview applicants who have completed the preliminary requirements and will select students on the basis of academic preparation, personal suitability, and potential 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 the date listed below.

Please note this important date: February 15 - final date for submission of applications, high school transcripts and/or other proof of completion of entrance requirements.

EMPLOYMENT POTENTIAL
Graduates are eligible to write the qualification examinations set by the Canadian Association of Medical Radiation Technologists. Successful candidates are awarded R.T.T. Registered Technologist Therapy certificates. Graduates of the Radiotherapy Technology 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 (6 weeks)
Anatomy
Patient Care & Communications
Radiation Therapy
Treatment Planning
Radiation Physics

Term 2
Red River Community College and the Manitoba Cancer Treatment and Research Foundation
September - December (16 weeks)
H04-T114 Radiation Protection for Therapy
H04-T115 Patient Care and Interpersonal Skills for Therapy
H04-T116 Radiation Therapy
H04-T117 Treatment Planning
H04-T118 Physics for Radiotherapy
H04-T119 Apparatus and Imaging for Radiotherapy
H11-N120 Human Anatomy and Physiology
H11-N220 Human Anatomy and Physiology

Term 3
Manitoba Cancer Treatment and Research Foundation
March - April (7 weeks)
Radiation Therapy
Radiobiology
Physics & Apparatus

Year 2
The entire second year of training is delivered at the Manitoba Cancer Treatment and Research Foundation.

COURSE DESCRIPTIONS
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
This course will deal with the techniques of patient care in the radiotherapy department. Students will be given interpersonal skills to help them deal with the patients in radiotherapy.
H04-T116 RADIATION THERAPY
Introduction to malignant disease: pathology, diagnosis, modalities of treatment (with particular emphasis on treatment with ionizing radiation), the role of Radiation Oncology in the Health Care field.

H04-T117 TREATMENT PLANNING
An introduction to:
1) the various methods by which radiation treatment can be given;
2) beam directional devices and insurance of their accuracy;
3) the use of standard data/information to plan treatments most beneficial to the patient.

H04-T118 PHYSICS FOR RADIOTHERAPY
To extend the knowledge of concepts in radiation, physics as they relate to radiotherapy (Oncology). To understand the characteristics and utilization of equipment used in the treatment of the patient.

H04-T119 APPARATUS AND IMAGING FOR RADIOTHERAPY
The apparatus section will deal with some of the basic equipment used in Radiotherapy while the imaging section will deal with the film and processing methods used to produce an image.

H11-N120 HUMAN ANATOMY AND PHYSIOLOGY
This course is designed to provide an introductory study of the structure and pertinent aspects of 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-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 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. Prerequisite: H11-N120 Human Anatomy and Physiology.
REFRIGERATION AND AIR CONDITIONING

PURPOSE
To develop the skills required to install, service, and repair commercial and industrial refrigeration and air conditioning equipment.

PROGRAM
Refrigeration and Air Conditioning is a ten-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.

ENTRANCE REQUIREMENTS
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with Mathematics 200* and Physics 200 or Physical Science 201. English 200 or 201 is strongly recommended;
- Adult Basic Education or Mature Student Admission. Mature students may submit either the Manitoba Education Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of Mathematics 200, 301, 290 academic, or 911 and one of Physics 200 or Physical Science 201. As well, 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, Admissions/Registration for review.

* Mathematics 301 will be accepted in lieu of Mathematics 200.

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 Extension Division prior to entering skill training.

EMPLOYMENT POTENTIAL
Many graduates have entered the apprenticeship program and become journeymen. Others have found employment as refrigeration and air conditioning mechanics on maintenance crews of large buildings, with transport truck companies or with contractors who are involved with the installation and repair of equipment.

For further information on apprenticeship and possible transfer of credit, please see the Refrigeration and Air Conditioning program brochure.

PROGRAM OUTLINE
Term 1
T03-R051 Blueprint Reading & Sketching For Refrigeration PE
T04-G520 Related Gas Welding
T11-R001 Safety & Fundamentals Theory
T11-R003 Safety & Fundamentals Practical
T11-R005 Refrigeration Systems Theory
T11-R007 Refrigeration Systems Practical
T11-R009 Commercial Systems Theory
T11-R011 Commercial Systems Practical
T11-R013 Calculation Of Heat Transfer Theory
T11-R015 Refrigeration Piping
T11-R017 Air Conditioning Systems Theory

T11-R019 Air Conditioning Systems Practical
T11-R021 Refrigeration Electrical Theory
T11-R023 Refrigeration Electrical Practical
T11-R049 In-Industry/Refrigeration
T13-MS16 Refrigeration Math
T13-SS16 Refrigeration PE Science
T14-C504 Communication

COURSE DESCRIPTIONS
T03-R051 BLUEPRINT READING & SKETCHING FOR REFRIGERATION PE
Drawing interpretation as applied to the refrigeration trade.

T04-G520 RELATED GAS WELDING
The student is taught the basics of oxy-acetylene welding by means of lectures in the classroom and practical demonstrations in the welding shop. He/she 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 - oxy-acetylene cutting and welding, brazing and silver brazing in flat position. One week - arc welding in flat position.

T11-R001 SAFETY & FUNDAMENTALS - THEORY
Types of injuries from mechanical causes, electrical and refrigerant burns, explosions, toxic gases, etc. Trade terms, types of heat, heat transfer methods, volumes, pressure, density. Formulas used in calculations. Tools of the trade, fittings and other materials.

T11-R003 SAFETY & FUNDAMENTALS - PRACTICAL
Types of injuries from mechanical causes, electrical and refrigerant burns, explosions, toxic gases, etc. Trade terms, types of heat, heat transfer methods, volumes, pressures, density. Formulas used in calculations. Tools of the trade, fittings and other materials.

T11-R005 REFRIGERATION SYSTEMS - THEORY
The refrigeration cycle. Compressors, condensers, refrigerant metering devices, evaporators, refrigerants, oils, temperature controls, charging and testing systems.

T11-R007 REFRIGERATION SYSTEMS - PRACTICAL
The refrigeration cycle. Compressors, condensers, refrigerant metering devices, evaporators, refrigerants, oils, temperature controls, charging and testing systems.

T11-R009 COMMERCIAL SYSTEMS - THEORY
Types of systems: 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, adjusting of controls.

T11-R011 COMMERCIAL SYSTEMS - PRACTICAL
Types of systems: 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, adjusting of controls.

T11-R013 CALCULATION OF HEAT TRANSFER - THEORY
Compressor capacities, speed ratios, evaporator capacity, pipe sizing and component selection.
T11-R015 REFRIGERATION PIPING
Compressor capacities, speed ratios, evaporator capacity, piping sizing and component selection.

T11-R017 AIR CONDITIONING SYSTEMS - THEORY
Direct expansion, water chiller, single, multiple, air and its properties. Types of compressors used. Fans, filters and air distribution systems.

T11-R019 AIR CONDITIONING SYSTEMS - PRACTICAL
Direct expansion, water chiller, single, multiple, air and its properties. Types of compressors used. Fans, filters and air distribution systems.

T11-R021 REFRIGERATION ELECTRICAL - THEORY
Electrical circuits, magnetism, motors, relays, controls, and control systems. Electrical code as pertaining to refrigeration equipment.

T11-R023 REFRIGERATION ELECTRICAL - PRACTICAL
Electrical circuits, magnetism, motors, relays, controls and control systems. Electrical code as pertaining to refrigeration equipment.

T11-R049 IN-INDUSTRY/REFRIGERATION
1. To provide refrigeration and air-conditioning 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. Introduce refrigeration and air-conditioning contractors to possible apprentice candidates.
5. Make refrigeration and air conditioning contractors aware of College programs and students with a view of providing input.

T13-M516 REFRIGERATION MATH

T13-S516 REFRIGERATION PE SCIENCE
Heat energy, heat transfer formulas, heat conductances, pressure, enthalpy diagram relationship, principles of psychometrics, psychometric processes, fan-laws, pressures, in duct systems, refrigerant oils, small load calculations.

T14-C504 COMMUNICATION
A self-paced practical course that develops communications skills from four viewpoints: job-seeker, employee, junior supervisor, small business owner. The course is tailored to fit the needs of individual students and the requirements of the advisory boards.
PURPOSE
To develop proficient typing, transcription and word-processing skills.

PROGRAM
Secretary is a ten-month program with a one entry date: September. The program is designed to develop the knowledge and skills required to provide a broad secretarial background so that the graduate is equipped to work in a variety of job settings.

The program is a competency-based-learning (CBL) program, a modularized approach to learning which allows a moderate degree of self-pacing. The applicant should be prepared to complete requirements in a reasonable time, and to manage time wisely and effectively to meet deadlines.

ENTRANCE REQUIREMENTS
A - 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with one of English 200 or 201 and one of Mathematics 200 or 201. Completion of a computer awareness program is strongly recommended;

B - satisfactory reading ability, as measured by a written test administered through the college.

Mature Student Admission. Mature students may submit either the Manitoba Education Mature Student Grade 12 Diploma (with one of Mathematics 200 or 201 or 300 or 301 and one of English 200 or 201 or 300 or 301) or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits. Those persons applying on the basis of G.E.D. standing must also have successfully completed one of English 200, 201, 290 or 911, and Mathematics 200, 201, 290 or 911. Additional preparation by way of a computer awareness program is strongly recommended. Mature student applicants must also complete entrance requirement (B) 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 Admissions/Registration for review.

PROGRAM OUTLINE

Term 1
B17-E151 Business Communications
B17-M551 Mathematics/Machines
B16-F131 Filing
B18-H141 Human Relations I
B18-O532 Office Duties I
B18-T501 Typing - Basic

Term 2
B17-A451 Accounting
B17-E152 Business Communications
B18-H142 Human Relations II
B18-O533 Office Duties II
B18-T102 Typing - Intermediate
B18-T405 WordPerfect - Basic

Term 3
B17-E153 Business Communications
B18-D553 Machine transcription
B18-L305 Lotus 1-2-3
B18-T505 WordPerfect - Advanced
B18-T583 Typing - Advanced

COURSE DESCRIPTIONS
B17-A451 ACCOUNTING
An in-depth study of basic accounting principles as applied to journaling, posting, financial statements, adjustments, petty cash and bank reconciliation.

B17-E151 BUSINESS COMMUNICATIONS
This course is designed to provide a foundation in the fundamentals of grammar and vocabulary development.

B17-E152 BUSINESS COMMUNICATIONS
This course is designed to provide a foundation in the fundamentals of spelling, punctuation, use of capitals, abbreviations and figures; proper writing of sentences, paragraphs and precise and proper organization of bibliographies and footnotes.

B17-E153 BUSINESS COMMUNICATIONS
This course is designed to familiarize students with the various purposes served by business letters and with the skills of writing letters that most effectively meet these purposes.

B17-M551 MATHEMATICS/MACHINES
A review of fundamentals of arithmetic while developing skill in the operation of an electronic calculator. Emphasis on mathematics begins with decimals and percents and their use in business computations. Mathematics applied to business operations deals with such topics as: discounts, sales taxes, invoices, interest and payrolls.

B18-D553 MACHINE TRANSCRIPTION
After completion of this course, the student will be able to operate a transcribing machine and transcribe correspondence and reports from a dictation machine.

B18-F131 FILING
This course is designed to provide training in theory and practical application of four filing systems: alphabetic, geographic, numeric and subject. It includes instruction in indexing, coding and storing of correspondence as well as charge out, follow-up, cross-reference and retrieval procedures.

B18-H141 HUMAN RELATIONS I
After completion of this course, the student will recognize the factors for building self-esteem, identify employable skills, use the library, discuss listening skills, project a professional image, demonstrate a professional attitude, respond to office callers and the use of the telephone.

B18-H142 HUMAN RELATIONS II
After completion of Human Relations II, the student will be able to discuss the principles of interpersonal relations, identify problem-solving techniques, discuss the guidelines for being a group member, apply decision-making skills in groups, identify guidelines for managing conflict and identify means of managing stress.

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-O532 OFFICE DUTIES I

B18-O533 OFFICE DUTIES II

B18-T102 TYPING - INTERMEDIATE
Designed to develop typewriting speed and accuracy and to develop
typewriting skills in and or understanding of the production of
business correspondence, reports, manuscripts, tables, forms, etc.
Speed is developed to at least 45 wpm. Prerequisite: B18-T401 or
B18-T501.

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 at an advanced level. Students must also touch type at a
minimum of 50 wpm on straight copy.

B18-T501 TYPING - BASIC
This course is designed to enable the student to become proficient
the use of a typewriter, to build speed skill through emphasis on touch
typing techniques and be able to type 35 wpm. The student will learn
to produce simple business correspondence and tables with an introduction
to forms.

B18-T505 WORDPERFECT - ADVANCED
Using the knowledge gained from the Basic WordPerfect course,
students will expand their knowledge of some of the more advanced
functions of the functions included are: macros, sort and select, math
functions in tabular columns, parallel/newspaper columns, graphics
and file management.

B18-T503 TYPING - ADVANCED
Designed to continue development of speed and accuracy; to
build production ability, including financial statements, minutes of
meetings, legal documents, etc.; to develop skill in organizing
tasks coordinating information and decision-making through in-
basket type projects. A speed of 50 wpm is to be achieved.
terminology, arrow diagrams, expediting, resource allocation, float and calendar dating. One third of the classroom time is allotted to train the student to think systematically about economic issues related to banking, business & government, engineering & personal financial management.

CIV-T467 REINFORCED CONCRETE DESIGN 1
The course consists of: designing simple reinforced concrete beams for flexure, shear, deflection; designing simple columns for axial load and eccentricity, designing one way slabs, designing reinforced concrete walls.

CIV-T561 SOIL MECHANICS 11
The course includes the following topics: -continuation of soil mechanics -settlement of fine grained soil -shear strength -frost action in soils -density of soils and compaction procedures -permeability

CIV-T563 STEEL DESIGN
The design of individual steel building components such as tension members, columns, beams, base plates, bolted and welded connections based on CAN3-S16. 1-M84, using CISC, Handbook of Steel Construction, latest edition.

CIV-T564 STRUCTURAL ANALYSIS IV
1. Deflection Methods
2. Influence Line Diagrams

CIV-T565 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 & 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-T568 REINFORCED CONCRETE DESIGN 1
1. Beams - Flexure (con't)
2. Beams - Miscellaneous
3. Columns - Compression and Bending (con't)

CIV-T569 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-T661 FOUNDATION DESIGN
Course is a continuation from Soil Mechanics II and includes the following topics:
- vertical soil pressure calculations
- footing types and design
- reinforced concrete footing design
- pile types and design
- horizontal earth pressures

CIV-T663 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 CAN-3-086, 1-M84.

CIV-T664 STRUCTURAL ANALYSIS V
1. Moment Distribution
2. Shear Wall Structures
3. Analysis Applications

CIV-T665 DESIGN THESIS
This course consists of: producing complete design calculation notes and structural drawings for a construction project; calculating the project's structural cost; producing progress reports and design diary.

CIV-T668 REINFORCED CONCRETE DESIGN 11
1. Two Way Systems
2. Concrete Walls (con't)

CIV-T669 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 actual demonstrated results.
SURVEY ENGINEERING TECHNOLOGY

PURPOSE
To develop knowledge and skills in the legal and engineering survey field.

COURSE
Survey Engineering Technology is a two-year diploma program with a September entry date. The course is designed to provide a broad scope of employment opportunities in the construction and resource industries and in government. The various fields include land, topographic, construction, mining, hydrographic and geodetic surveying.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Science 301; *Physics 300 is strongly recommended as a more appropriate background for technology.
- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission, Mature students may submit either the Manitoba Education and Training Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science* as outlined above. Mature students must also 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 Admissions/Registration for review.

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.

PROGRAM OUTLINE
Year 1
Term 1
CIV-C162 Engineering Graphics
CIV-C165 Mechanics
CIV-C166 Surveying
CIV-M163 Introduction To Applications Software
CIV-M169 Mathematics
CIV-R167 Communications

Term 2
CIV-M269 Mathematics II
CIV-R267 Specifications & Reports
CIV-S262 Plan Preparation I
CIV-S263 Computer Applications I
CIV-S264 Theory & Use Of Instruments I
CIV-S266 Surveying II

Term 3
CIV-M369 Calculus
CIV-S362 Plan Preparation II
CIV-S363 Computer Applications II
CIV-S364 Theory & Use Of Instruments II
CIV-S365 Photogrammetry I

Year 2
Term 4
CIV-M469 Mathematics III
CIV-S463 Route Surveys
CIV-S464 Theory & Use Of Instruments III
CIV-S465 Photogrammetry II
CIV-S466 Advanced Surveying Computations I

Term 5
CIV-S561 Control Surveys I
CIV-S562 Plan Preparation III
CIV-S563 Legal Survey I
CIV-S565 Terrain Interpretation
CIV-S566 Advanced Surveying Computations II
CIV-S567 Cartography

Term 6
CIV-R668 Report Writing & Ind. Psych.
CIV-S661 Control Surveys II
CIV-S662 Town Planning
CIV-S663 Legal Survey II
CIV-S664 Astronomy
CIV-S665 Hydraulics
CIV-S667 Survey Camp II

COURSE DESCRIPTIONS
CIV-C162 ENGINEERING GRAPHICS
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 simple drawings and sketches and the projection 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-C165 MECHANICS
Course includes the following topics:
1) Basic Principles.
2) Resultant of Force Systems.
3) Equilibrium of Force Systems.
4) Centroid of Areas.
5) Moment of Inertia.

CIV-C166 SURVEYING
This course consists of the theory and use of survey measuring instruments, the steel tape, engineers level and transit and the basic techniques in the use of these instruments.

CIV-M163 INTRODUCTION TO APPLICATION SOFTWARE
Through hands-on experience, this course provides an introduction to MS-DOS commands, WordPerfect word processing, SuperCalc3 spreadsheet work, and DBASE III PLUS database manipulation. The course setting is in a networked IBM-PC lab.
STRUCTURAL ENGINEERING TECHNOLOGY

PURPOSE
To develop the knowledge and skills required for the design, detailing, drafting and inspection of structured systems for buildings.

PROGRAM
Structural Engineering Technology is a two-year diploma program with a September entry date. The program is designed to develop the skills needed to work with structural engineers in the formulation and calculations of engineering design. Students will receive comprehensive training in the field of structural design for commercial buildings, including soil investigation, foundation design, and concrete and steel design.

ENTRANCE REQUIREMENTS
- 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with Mathematics 300, English 300 or 301, and Physics 300* or Physical Science 301; * Physics 300 is strongly recommended as a more appropriate background for technology.
- Adult Basic Education Pre-Technology (Adult 12) program completion

Mature Student Admission. Mature students may submit either the Manitoba Education Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must have specific credits in mathematics, English, and science* as outlined above. Mature students must also 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 Admissions/Registration for review.

EMPLOYMENT POTENTIAL
Structural Engineering Technology 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.

PROGRAM OUTLINE
Year 1
Term 1
CIV-C162 Engineering Graphics
CIV-C165 Mechanics
CIV-C166 Surveying
CIV-M163 Introduction To Applications Software
CIV-M169 Mathematics

Term 2
CIV-M261 Introductory Calculus
CIV-R268 Specifications & Reports
CIV-T262 Engineering Graphics II
CIV-T263 Computer Assisted Drafting I
CIV-T264 Structural Analysis I
CIV-T265 Strength Of Materials I

Term 3
CIV-M361 Calculus
CIV-M364 Statistics
CIV-T362 Structural Drawing Practices
CIV-T363 Computer Assisted Drafting II
CIV-T364 Structural Analysis II
CIV-T365 Strength Of Materials II
CIV-T369 Properties Of Materials

Year 2
Term 4
CIV-R467 Industrial Psychology
CIV-T461 Soil Mechanics I
CIV-T463 Computer Assisted Drafting III
CIV-T464 Structural Analysis III
CIV-T465 Job Control And Economics
CIV-T467 Reinforced Concrete Design I

Term 5
CIV-T561 Soil Mechanics II
CIV-T563 Steel Design
CIV-T564 Structural Analysis IV
CIV-T565 Costing And Contract Administration
CIV-T568 Reinforced Concrete Design II
CIV-T569 Masonry Design

Term 6
CIV-T661 Foundation Design
CIV-T663 Timber Design
CIV-T664 Structural Analysis V
CIV-T665 Design Thesis
CIV-T668 Reinforced Concrete Design III
CIV-T669 Testing Materials

COURSE DESCRIPTIONS
CIV-C162 ENGINEERING GRAPHICS
Students will receive a basic understanding of 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 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. This course has 1 hour lecture/week & 5 hours lab/week.

CIV-C165 MECHANICS
Course includes the following topics:
1) Basic Principles
2) Resultant of Force Systems
3) Equilibrium of Force Systems
4) Centroid of Areas
5) Moment of Inertia.

CIV-C166 SURVEYING
This course consists of the theory and use of survey measuring instruments, the steel tape, engineers level and transit and the basic techniques in the use of these instruments.

CIV-M163 INTRODUCTION TO APPLICATIONS SOFTWARE
Through hands-on experience, this course provides an
introduction to MS-DOS commands, WordPerfect word-processing, SuperCalc3 spreadsheet work, and DBASE III Plus data base manipulation. The course setting is in a networked IBM-PC lab.

CIV-M169 MATHEMATICS
The course is basically a review of high school mathematics with emphasis on trigonometry, solution of algebraic equations, exponents, and logarithms.

CIV-M261 INTRODUCTORY CALCULUS
The course provides an introduction to differential calculus of functions of a single variable with emphasis placed on applications related to the field of Civil Engineering Technology.

CIV-M361 CALCULUS
The course is an introduction to the process of integration of functions of one variable. Includes techniques of integration as well as applications of integration in elementary problems relating to the field of Civil Engineering Technology.

CIV-M364 STATISTICS
The course is an introduction to general elementary statistical principles involving data handling, measures of central tendency, and dispersion, fundamentals of probability, distributions, and least squares correlation and regression.

CIV-R268 SPECIFICATIONS & REPORTS
The course covers the writing of technical instructions, proposals, and long investigation reports, the presentation of oral briefings, and the preparation of job search documentation. The student will also learn the basic format of the National Master Specification and the fundamental structure of construction specifications.

CIV-R467 INDUSTRIAL PSYCHOLOGY
The course covers industrial supervision and the psychology of management, particularly in a technical domain.

CIV-T262 ENGINEERING GRAPHICS 11
This course is planned to continue the development of the students' technical drawing and drawing interpretation skills. Through the preparation of a set of construction drawings for a single family residence, students will be introduced to residential construction practices, standards and terminology applicable to their technology specialty.

CIV-T263 COMPUTER ASSIST DRAFTING 1
Introduction to graphic computers and computer-aided-drafting, involving Geometric entities, input modes, coordinate types, drawing creation and manipulation, dimensioning, cell libraries (creation and usage), layers, bookkeeping functions, and output (plotting). Production of drawings using Calcomp (Terak) hardware, a software package, named "MINN-DRAFT".

CIV-T264 STRUCTURAL ANALYSIS 1
1. Shear and Moment in Beams
2. Stresses in Beams

CIV-T265 STRENGTH OF MATERIALS 1
The first part of the course deals with problems relating to support and pin reactions in frames and trusses. The second part deals with stress and deformation of materials.

CIV-T362 STRUCT. DRAWING 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 a single storey, office/warehouse building project, students will be introduced to structural detailing practices, drawing standards and terminology applicable to their technology specialty.

CIV-T363 COMPUTER ASSIST DRAFTING 11
The first half of this trimester 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 Software, named "Design Pro". This will include use of menu options, directories, drafting mode, user work area, digitizers, function codes, grid and scale, keyboard coordinate entries, graphics commands, layers and pens, measures and drafting aids, introduction to 3-D, text editor, editing drawings, figures (cells), text, dimensioning & plotting. Production of drawings related to engineering disciplines using Calcomp (Terak) hardware.

CIV-T364 STRUCTURAL ANALYSIS 11
1. Combined Stresses
2. Mohr's Circle
3. Structural Loads and Procedures

CIV-T365 STRENGTH OF MATERIALS 11
This course deals with fluid statics, the stability of gravity and retaining walls, and graphical static solutions to simple frames.

CIV-T369 PROPERTIES OF MATERIALS
The course is intended to introduce the student to concrete materials theory and practical concerns. The course commences with the study of cement manufacturing and types and leads directly into concrete practice and methods. Formwork systems are introduced as they apply to the more common concrete components of buildings. The final segment deals with a number of major reinforced concrete systems used for larger reinforced concrete building types, in functional concept only.

CIV-T461 SOIL MECHANICS 1
Course includes the following topics:
- Introduction to soil mechanics
- Methods of soil formation (grain size analysis)
- Soil grain characteristics
- Soil-water relationships (volumetric and gravimetric)
- Soil-water relationships (plasticity)
- Soil classification systems

CIV-T463 COMPUTER ASSISTED DRAFTING 11
This topic, during this third term of this course, will involve the student in using Computer Assisted Design and Drafting methods in the production of a variety of engineering drawings.

CIV-T464 STRUCTURAL ANALYSIS 11
1. Determinacy
2. Shear and Moment Diagrams
3. Moment Distribution
4. Approximate Methods

CIV-T465 JOB CONTROL AND ECONOMICS
This course consists of the theory of project scheduling using the Critical Path Method. It will include the logistics of the method including
1. plotting, hard copies from field notes,
2. preparing hand drawn, with Leroy lettering, and sketches for:
   (a) building location and staking certificates.
   (b) sketches of proposed plans of subdivision,
3. plotting/tracing township diagrams, plans required for LTO registration by statute and regulation, such as special surveys, special plots, expropriation of right-of-ways for drains, roads, etc. and condominium plans,
4. calculating. and plotting mass haul diagrams.

CIV-S364 THEORY & USE OF INSTRUMENTS II
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-S365 PHOTOGRAMMETRY I
This course consists of theory relating to and practical work in the relationship of areas and angles and distances on aerial photographs to areas and 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-S366 SURVEYING III
This course consists of; the field methods of laying out simple vertical and compound curves and calculations pertaining there to; special problems in curves; introduction to mensuration; methods of stadia; construction survey procedure.

CIV-S367 SURVEY CAMP I
The purpose of this field camp is to acquire field data to be used in a route design project in CIV C463, route surveys; to acquaint the student with basic survey techniques and Party-Chief responsibilities. Emphasis is on clear, neat, accurate and concise field notes.

CIV-S463 ROUTE SURVEYS
Course includes the following topics: survey school - preliminary surveys, special curve problems, vertical curves, horizontal and vertical alignment using RTAC design criteria, earthwork calc, including mass diagram, runoff calculations and culvert design.

CIV-S464 THEORY & USE OF INSTRUMENTS III
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 equipment as well as calibration procedures and evaluation of data are also considered.

CIV-S465 PHOTOGRAMMETRY II
This course is a continuation of CIV-S366 and consists of the following: a review of basic photogrammetric theory: area determination on aerial photographs; consideration of the theory of parallax as applied to stereo pairs of photographs and the use of the parallax bar to determine heights and elevations; construction of parallax correction graphs; consideration of the effects of tilt on an aerial photograph; and consideration of the function and general operating principles of photogrammetric plotters.
CIV-S466 ADVANCED SURVEYING COMPUTATIONS I
This course will examine advanced techniques in the areas of retracement surveys, curves and right-of-way surveys. Emphasis on the compiling and use of clear, neat and concise field notes.

CIV-S561 CONTROL SURVEYS I
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, vertical positions. Basic concepts with respect to Map Projections with particular attention to the Transverse Mercator projection. The concepts and basics of the Dominion Lands System of Survey.

CIV-S562 PLAN PREPARATION III
The student will be further introduced to the topic of coordinate systems in use in the National Topographic System in Canada and will investigate the operation and effects of various map projections.

CIV-S563 LEGAL SURVEY I
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, The Statutes of Manitoba relating to surveys, Case Law relating to surveys, and will offer the opportunity to solve practical survey problems.

CIV-S565 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 deposition or formation of the landforms and to deduce or infer the type of soil or granular materials present in the landform; surface moisture conditions and possible sub-surface moisture conditions; soil permeability and permafrost conditions.

CIV-S566 ADVANCED SURVEYING COMPUTATIONS II
This course will examine calculations on subdivision surveys and advanced work in computations. Emphasis on the compiling and use of clear, neat and concise field notes.

CIV-S567 CARTOGRAPHY
This course consists of practical work in (1) the production of a multi-coloured map of a given area (2) the setting up of a model in the Kesh stereoplotter for a designated topographic area and scale; and (3) a consideration of basic cartographic principles governing map projects of the earth.

CIV-S661 CONTROL SURVEYS II
Further 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. Further study of the Dominion Lands System of Survey.

CIV-S662 TOWN PLANNING
To introduce 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 relationship to residential neighbourhoods, an examination of zoning regulations and their application. The requirement and provision of lands for PR and Schools and their interrelationship and provision of lands for PR and Schools and their interrelationship and the relationship of topography to subdivision design.

CIV-S663 LEGAL SURVEY II
This course continues the study begun in the previous term. The Canadian Legal System, Real Property Law, Boundary Concepts, Land Registration Systems, The Multipurpose Cadastre, The Dominion Lands System, The Statutes of Manitoba relating to surveys, Case Law relating to surveys and will again require the student to solve practical survey problems.

CIV-S664 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; corrections to observations.

CIV-S666 HYDRAULICS
This course consists of a study of fluid statics, open channel flow and the theory, collection and application of data pertinent to the design of irrigation, drainage and flood control structures.

CIV-S667 SURVEY CAMP II
The purpose of this camp is to give the student an opportunity to apply principles and practices of advanced survey methods in a work atmosphere. The student will encounter problems of application of survey techniques and be required to solve them. The student will work individually or in groups to complete specific work assignments. The production of clear, concise field notes and reports including calculations and plots are a very real requirement of any work situation and are to be produced in all cases by each student.
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 39-week certificate program with 35 hours per week scheduled class time. There are three entry dates to the program: September, December, and March. 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
- 14 high school credits (Manitoba Grade 11 or equivalent secondary school preparation) with Mathematics 200 and one of Physics 200 or Physical Science 201. English 200 or 201 is strongly recommended;
  or
- Adult Basic Education I1A

Mature Student Admission. Mature students may submit either the Manitoba Education Mature Student Grade 12 Diploma or G.E.D. standing (scores on each of the five tests must be 43 or higher) in lieu of 14 credits; however, they must have successfully completed one of Mathematics 200*, 301, 290 academic, or 911 and one of Physics 200 or 290 or Physical Science 201. Mature students must also 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 Admissions/Registration for review.

* Mathematics 301 will be accepted in lieu of Mathematics 200.

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 a field-service technician, quality-control checker or equipment technician.

Please note that graduates seeking employment with Manitoba Telephone System will require a Mathematics 300 prior to employment.

PROGRAM OUTLINE
Term 1
T12-I001 DC Fundamentals
T12-I003 AC Fundamentals
T12-I016 Electronic Soldering & Desoldering
T12-I017 Computer Basics & Keyboarding Skills
T12-I060 Number Systems & Digital Logic
T12-T004 Semiconductor Devices
T12-T006 Communications Transmitters And Receivers
T12-T008 Transmission Lines, Antennas Intro Microwaves
T12-T009 Multiplexing Techniques
T12-T012 Telephony & Telephone Switching Principles
T12-T014 Digital Techniques
T12-T016 Microprocessors
T13-M523 TelecommunicationS Math
T14-C504 Communication

COURSE DESCRIPTIONS
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-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 AF, IF and RF oscillators, mixers detectors and superheterodyne principles. CW, AM, SSB, DSB, FM and PM transmission and reception. Alignment maintenance and trouble shooting VHF and mobile transceivers.

T12-T008 TRANSMISSION LINES, ANTENNAS INTRO MICROWAVES
Characteristics of transmission lines, standing waves, SWR and transmission matching, dipole antennas, Marconi antennas, directive arrays, propagation of radio waves, microwaves, polarization, waveguide modes, microwave oscillators, cavities and amplifiers, directional couplers, circulators and isolators.

T12-T009 MULTIPLEXING TECHNIQUES
Carrier fundamentals, analysis of Lenkurt 46A3 FDM carrier, fundamentals of frequency Division Multiplex. T1 PCM system parameters, introduction to Data Communications, machine codes and protocols.

T12-T012 TELEPHONY & TELEPHONE SWITCHING PRINCIPLES
Telephone exchanges, incoming signalling, signal processing, switching and outgoing signalling, clearing circuit reading, symbols for attached and detached drawings, schematic and wiring diagrams, cross referencing and interpretation of notes and circuit options, practical application using AEl rotary, Ericsson code bar and Mitel electronic common control pass.

T12-T014 DIGITAL TECHNIQUES
Components used in digital circuits, operation of logic gates, use of Boolean algebra to minimize 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.

T12-I016 ELECTRONIC SOLDERING & 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. Make repairs to laminated circuit boards.

**T12-I017 COMPUTER BASICS & KEYBOARDING 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, filenames and file listing. Use 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% accuracy.

**T13-M523 TELECOMMUNICATIONS MATH TERM 1**
Algebra, powers of tens, exponents, ratio, trigonometry vectors, problem solving (AC and DC circuits).

**T14-C504 COMMUNICATION**
A self-paced practical course that develops communication skills from four viewpoints: job-seeker, employee, junior supervisor, small business owner. The course is tailored to fit the needs of individual students and the requirements of the Advisory Boards.
UPHOLSTERY

PURPOSE
To prepare students to estimate covering material and to cut, sew and apply it to fine furniture. The graduate will be proficient in the use of a sewing machine and air staple.

PROGRAM
Upholstery is a 10-month certificate program with a September entry date. The program combines lectures and practical work, including a considerable amount of time spent on constructing actual pieces of furniture. All aspects of the upholstery trade are covered, including spring construction, foam rubber construction, cutting, sewing, woodworking, and wood-surface refinishing.

ENTRANCE REQUIREMENTS
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with 100 or 101 courses inclusive. Mathematics, English and Science are preferred; or
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature students may submit other academic equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher) or successful completion of one of Mathematics 100, 101, 190, or Practical Mathematics, Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also 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 Admissions/Registration for review.

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 level.

EMPLOYMENT POTENTIAL
Graduates have found employment in production and custom shops as springers, trimmers or cutters, and in custom shops as estimators, furniture salespeople and inspectors. Some graduates are self-employed.

PROGRAM OUTLINE
Term 1
- T02-U001 Basic Tools And Equipment - Theory
- T02-U002 Basic Tools And Equipment - Practical
- T02-U003 Spring Construction - Theory
- T02-U004 Spring Construction - Practical
- T02-U005 Burlap And Stuffing Up - Theory
- T02-U006 Burlap And Stuffing Up - Practical
- T02-U007 Trimmings - Theory
- T02-U008 Trimmings - Practical
- T02-U010 General Upholstery - Practical
- T02-U011 Coverings - Theory
- T02-U012 Coverings - Practical
- T02-U013 Foam Rubber Applications - Theory
- T02-U014 Foam Rubber Applications - Practical
- T02-U016 Advanced General Upholstery - Practical
- T02-U017 Woodworking - Theory
- T02-U018 Woodworking - Practical
- T02-U020 On-The-Job-Training
- T02-U021 Wood Finishing - Theory
- T02-U022 Wood Finishing - Practical
- T13-M501 Upholstery Math
- T14-C544 Communication And Basic Accounting

COURSE DESCRIPTIONS
- T02-U001 Basic Tools And Equipment - Theory
  Use of various hand tools, cushion machine, picking machine, sewing machines, electric shears, foam cutting machine.
- T02-U002 Basic Tools And Equipment - Practical
  Practical use of all tools in projects such as cutting foam rubber, stapling fabric, stapling spring clip, sewing and attaching coil springs.
- T02-U003 Spring Construction - Theory
  Webbing, slatted seats, fastening springs, no-sag springs, unit springs, spring edges, tipping springs.
- T02-U004 Spring Construction - Practical
  Measuring, cutting and installing various types of springs on furniture. This includes coil springs on a wooden slot seat on webbing, no-sag springs with a hard edge or soft edge.
- T02-U005 Burlap And Stuffing Up - Theory
  Attaching burlap, sewing burlap, lining on open frame, edge rolls, single stuffing, double stuffing, stitching up, shaping.
- T02-U006 Burlap And Stuffing Up - Practical
  Attaching burlap over coil springs, no-sag springs with a hard edge or soft edge. Stitching burlap to springs and applying various types of stuffing.
- T02-U007 Trimmings - Theory
  Making and fitting panels, attaching outside covers, blind tacking, hand sewing, applying leather and mercerized gimp, spacing furniture nails-attaching skirts.
- T02-U008 Trimmings - Practical
  Making and fitting panels, attaching outside covers, blind tacking, hand sewing, applying leather and mercerized gimp, spacing furniture nails-attaching skirts.
- T02-U010 General Upholstery - Practical
  The actual upholstering and reupholstering of chesterfield suites, foot stools, occasional chairs, etc.
- T02-U011 Coverings - Theory
  Measuring projects, laying out plans, material layout, cutting material to size. Fitting covers, cutting and pleating, putting on covers, making cushions, sewing material together.
- T02-U012 Coverings - Practical
  Measuring projects, laying out plans, material layout, cutting material to size. Fitting covers, cutting and pleating, putting on covers, making cushions, sewing material together.
- T02-U013 Foam Rubber Applications - Theory
  Cutting and shaping of foam rubber, fabricating and cementing. Applying tack strips.
T02-U014  FOAM RUBBER APPLICATIONS - PRACTICAL
Types of foam rubber and the best use of each. Cutting and shaping
rubber for seat and back cushions and attaching foam to furniture
frames.

T02-U016  ADVANCED GENERAL UPHOLSTERY -
PRACTICAL
Advanced upholstering including tufting and channeling on chesterfields
and chairs, etc.

T02-U017  WOODWORKING - THEORY
Simple woodworking principles: operation of basic woodworking
machines, hand tools, practical projects.

T02-U018  WOODWORKING - PRACTICAL
Projects requiring the use of hand and machine tools of the woodworking
trade used in the upholstery trade.

T02-U020  ON-THE-JOB TRAINING
Gives an opportunity to experience working in a custom and production
shop.

T02-U021  WOOD FINISHING - THEORY
Hardwood, open grain, hardwood close grain, softwoods, oil stains,
spirit stains, water stains, chemical stains.

T02-U022  WOOD FINISHING - PRACTICAL
Stripping, repairing and refinishing furniture.

T13-M501  UPHOLSTERY MATH
Individual progress course. Diagnostic tests to identify remedial
requirements for each student. Each student is required to complete
basic assignments on each of these topics: whole numbers, fractions,
decimals, elementary algebra (one unknown), percent, ratio and
proportion, metric measure/calculation, denominate numbers, square,
square roots, Pythagoras theorem, measure distances, perimeters,
circumferences, measure area of various geometric figures, calculate
volume/capacity for various shapes of containers.

T14-C544  COMMUNICATION AND BASIC ACCOUNTING
Communication: introduction to workers’ legislation, to small business
management, and to job search techniques. Basic Accounting: introduction
to simple bookkeeping for the owner of a small business.
VISUAL LANGUAGE INTERPRETER TRAINING PROGRAM

PURPOSE
To develop the skills required to function as a visual language interpreter in facilitating communication between hearing and hearing-impaired individuals in a wide variety of settings and for diverse populations.

PROGRAM
The Visual Language Interpreter Training Program (VLITP) is a two-year diploma program with a September entry date in alternate years (1992 and 1994). The program is designed to increase the interpreter trainee's fluency in American Sign Language (ASL) and English; to develop the skills necessary for both consecutive and simultaneous interpretation; and to provide cognitive tools to interact with both deaf and hearing communities as a facilitator of communication.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent secondary school preparation) with one of English 300 or 301; or
- Adult Basic Education 11B;
and
B - an interview with the Visual Language Interpreter Training Program Selection Committee;
and
C - an intermediate level of sign language proficiency, as determined through an individual evaluation by the Selection Committee.

This is a Special Selection program. The Selection Committee chooses candidates on the basis of educational preparation, signing skills, maturity, and aptitude for a career as an interpreter for the deaf. Applicants are encouraged to do some background research on this profession before attending the interview.

Because this Special Selection program has an early cut-off date, applications should be submitted as early as possible. Please contact the Admissions/Registration Office at 632-2327 to confirm the exact date.

EMPLOYMENT POTENTIAL
As the demand for visual language interpreters grows across the nation, employers from across Canada have hired program graduates to meet their needs. Graduates are working in numerous mainstream programs in public schools, in interpreter referral centres across Canada and in post-secondary institutions. Some graduates work on a free-lance basis. Others have found employment in specialized services for deaf-blind persons and in administrative positions, such as coordinators of referral services. Graduates interpret in educational, medical, religious, recreation, community-agency, legal, employment and the performing-arts areas.

PROGRAM OUTLINE
Term 1
S01-B102 Culture And Ethnology I
S01-B114 English I
S01-B134 American Sign Language (ASL) I
S01-B136 Introduction To The Interpreting Field
S01-B137 Building Translation Skills: English

Term 2
B13-S161 Psychology
S01-B108 Deaf Culture
S01-B124 English II
S01-B135 American Sign Language II
S01-B138 Culture And Ethnology II
S01-B139 Building Translation Skills: American Sign Language

Term 3
S01-B113 Cross Cultural Interaction
S01-B118 Literature Review I
S01-B140 Ethics I
S01-B141 American Sign Language III
S01-B142 Building Translation Skills: English/American Sign Language
S01-B143 Interpretation Lab I: Consecutive Interpretation
S01-B144 Practicum I: Observation Practicum

Term 4
S01-B116 Building Translation Skills: English/American Sign Language
S01-B117 Feedback Skills/Group Dynamics II
S01-B119 English Lab: Presenting To A Group
S01-B120 Consecutive/Simultaneous Interpretation Lab II
S01-B121 Interpretation Settings
S01-B145 American Sign Language IV
S01-B146 Ethics II
S01-B147 Interpretation Lab II: Consecutive Interpretation
S01-B148 Interpretation Lab II: General Practice Lab

Term 5
S01-B123 American Sign Language V
S01-B125 Interpretation Lab IV (Consecutive Interpretation)
S01-B126 Interpretation Lab V (General Practice Lab)
S01-B127 Interpretation Lab VI (Mock Situations)
S01-B128 Interpretation Lab VII (Simultaneous Eng. To ASL)
S01-B129 Interpreting Processes
S01-B130 Special Projects (Independent Study)
S01-B131 Practicum II

Term 6
S01-B132 Practicum III
S01-B133 Literature Review II

COURSE DESCRIPTIONS
B13-S161 PSYCHOLOGY
This is an introductory course in Psychology which introduces the student to the various major western psychology theories and theorists. Application is made to the study of personality and its development throughout a person's lifespan.

S01-B102 CULTURE AND ETHNOLOGY I
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 on 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. Note: This course is a prerequisite for Culture and Ethnology II.

**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 I**
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-B116 BUILDING TRANSLATION SKILLS: ENGLISH/ASL**
This course gives students practice in translating passages of spoken English into videotaped ASL and from videotaped ASL into written or spoken English, given sufficient time to work out appropriate translations. Emphasis will be on abstracting, register shifts and closure.

**S01-B117 FEEDBACK SKILLS/GROUP DYNAMICS II**
This is a second workshop on feedback skills and group interaction designed for students to gain practical experience in offering and accepting feedback and in setting group and individual expectations and goals for the year.

**S01-B118 LITERATURE REVIEW I**
This is the first of two literature review courses that allows students to read publications related to the field of interpretation over and above those used as textbooks or discussed in various course subjects.

**S01-B119 ENGLISH LAB: PRESENTING TO A GROUP**
In this course students discuss techniques of presenting in front of a group. This is a skill that directly relates to an interpreter's often highly visible position while interpreting. Students practice these techniques by giving short presentations in class and receive critiques from fellow students.

**S01-B120 CONSECUTIVE/SIMULTANEOUS INTERPRETATION LAB II**
In this course students are provided with materials to practice interpretation skills in both a consecutive and simultaneous mode. Materials reflect a variety of consumers and settings. During this lab, students discuss techniques of applying language skills previously learned to the activity of interpretation.

**S01-B121 INTERPRETATION SETTINGS**
This course is an overview of the variety of settings where an interpreter may find him/herself working, 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 AMERICAN SIGN LANGUAGE (ASL) V**
This subject is the fifth in a series of five ASL subjects for interpreters and is based on the VISTA curriculum. The subject is designed to give students practice in conversation and technical language development in ASL through lectures, description of grammatical constructs, and practice in receptive and expressive use of ASL.

**S01-B124 ENGLISH II**
This course focuses on models of language acquisition and cognitive development in the hearing individual. These models are compared and contrasted with those of deaf individuals. Current research in these areas is discussed.

**S01-B125 INTERPRETATION LAB IV: 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.

**S01-B126 INTERPRETATION LAB V: GENERAL PRACTICE LAB**
This is a general practice lab in which students practice 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 VI: MOCK SITUATIONS**
In this lab, students interpret in mock situations by preparing, interpreting in, and conducting appropriate post-interpretation follow-up. Students are graded on this ability to pre-plan, to team with either student interpreters and to debrief with consumers and their fellow team members.

**S01-B128 INTERPRETATION LAB VII: 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, pre-planning for interpretation, and simultaneous interpretation.

**S01-B129 INTERPRETING PROCESSES**
This course is a lecture format course that deals with factors encountered by an interpreter, that have a bearing on mental processing. Included are physiological, psychological, environmental, linguistic, and cultural factors. These features may enhance or detract from an interpreter's ability to get the job done. Understanding how these factors affect the interpreter will assist him/her to form strategies to cope.
SO1-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.

SO1-B131 PRACTICUM II
This is the second of three practicum experiences. Students attend some interpreting assignments to observe other interpreters' work, team with professional interpreters in the field, or team with other VLITP students under certain circumstances.

SO1-B132 PRACTICUM III
This is the final practicum in which students are given a variety of supervised practicum experiences, with weekly seminars for discussion of issues and special topics.

SO1-B133 LITERATURE REVIEW II
This second literature review allows students to read publications related to the field of interpretation over and above those discussed in various program courses.

SO1-B134 ASL I
This is the first of five courses in ASL for VLITP students, and is the introductory course for teaching 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.

SO1-B135 ASL II
This is the second of five courses in ASL for VLITP students. This course continues with and expands upon the material introduced in ASL I.

SO1-B136 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.

SO1-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.

SO1-B138 CULTURE AND ETHNOLOGY II
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.

SO1-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 I
This is the first of two courses in ethics for 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 III
This is the third of five courses in ASL for VLITP students. This course continues with and expands upon the material presented in ASL II 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 I: CONSECUTIVE INTERPRETATION
This is the first interpretation lab for students. In this lab, students work on consecutive interpretation exercises in small groups.

SO1-B144 PRACTICUM I: OBSERVATION PRACTICUM
This is the first of three practicum experiences in the program. Students are able to observe interpreters working in the field once a week. In addition, students meet together once weekly to discuss their observation experiences.

SO1-B145 AMERICAN SIGN LANGUAGE IV
This is the fourth course in the series of five ASL courses for VLITP students. Along with further expansion of principles previously taught and practiced, students are given coursework to give them practice in lengthier discourse both with other members of a group and with individual presentations.
SO1-B146 ETHICS II
This is the second in a series of two courses in ethics. Students discuss ethical issues and problem solving based on case studies presented in class.

SO1-B147 INTERPRETATION LAB II: CONSECUTIVE INTERPRETATION
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 III: GENERAL PRACTICE LAB
This is a general practice lab in which students participate in English/ASL interpretation situations. These may take the form of role plays, videotaped, audio taped or written scenarios brought in by the instructor, or prepared materials brought in by each student.
VOCATIONAL INDUSTRIAL TEACHER EDUCATION

PURPOSE
To develop the knowledge and skills required for Vocational Industrial Teacher certification by Manitoba Education.

PROGRAM
Vocational Industrial Teacher Education is a ten-month certificate program with a September entry date. The program is designed to meet the certification requirements of Manitoba Education for vocational industrial teachers.

ENTRANCE REQUIREMENTS
A - 20 high school credits (Manitoba Grade 12 or equivalent high school preparation). Mathematics 300 or 301 and English 300 or 301 are recommended; and
B - a Journeyman's Certificate in a designated trade and 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 and 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 and a minimum of six years 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 journeyman's license 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 Education Mature Student Grade 12 Diploma or G.E.D. 12 standing in lieu of 20 credits; however, they must also meet entrance requirements (B), (C), (D), and (E) 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 Department Head, Teacher Education, for review.

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 qualify for a vocational teaching certificate issued by Manitoba Education. 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
Term 1
B22-E206 Educational Psychology
B23-E103 Audio-Visual Education
B23-E104 Communication Skills
B23-E105 General Teaching Methods I
B23-E201 Organizing Industrial Education Facilities
B23-E301 Independent Study
B23-V101 Vocational Training & Related Work Experience
B23-V202 Introduction To Micro Computers

Term 2
B22-E204 Educational Testing And Evaluation
B22-E210 Classroom Counseling
B23-E202 Principles Of Industrial Education
B23-E203 Course Development In Industrial Education
B23-E206 General Teaching Methods II

Term 3
B23-T202 Student Teaching

COURSE DESCRIPTIONS
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.

B23-E210 CLASSROOM COUNSELING
This course is designed to help student teachers to gain the fundamentals of knowledge and guidance skills in human understanding and show sensitivity to the hidden messages of students. Explanations of what counselling is and the definition of the role of the school counselor would help the classroom teacher to understand this essential resource of the school. The participants also learn about student concerns and problems and how to deal with these effectively. Teacher counseling is portrayed as an enrichment of the teaching function which remains the teacher's prime responsibility. Case materials, role playing, and referral techniques provide explicit and substantial information for discussion and development of guiding principles.

B23-E103 AUDIO-VISUAL EDUCATION
Communication principles related to the application of audio visual media to education. Audio visual materials and equipment; their selection, preparation, utilization, and evaluation in industrial education.

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, emphasis being placed on their application within the education structure.

**B23-E105 GENERAL TEACHING METHODS I**

**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 on location, size, shape of laboratory, and its physical requirements: specifications, purchasing and placement of required equipment and supplies.

**B23-E202 PRINCIPLES OF INDUSTRIAL EDUCATION**
Basic philosophies of education in general and industrial education in particular. Overview of the history and development of industrial education. Role of industrial education in Canadian federal and provincial programs. Current trends. Emphasis will be placed on vocational industrial or industrial arts education as required. Student research and report seminars.

**B23-E203 COURSE DEVELOPMENT IN INDUSTRIAL EDUCATION**
Development of an orderly procedure for the identification of concepts and instructional 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.

**B23-E205 GENERAL TEACHING METHODS II**
Prerequisite: B23-E105 "General Teaching Methods 1" Continuation of "General Teaching Methods 1" 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-E301 INDEPENDENT STUDY**
Designed to provide the student meeting the prerequisites with an opportunity to engage in independent research and/or problem solving directly related to industrial arts education. Approval of the Chairman Teacher Education Section, must be obtained to undertake this course. A student qualifying for independent study will be required to select and work in consultation with a staff advisor.

**B23-T202 STUDENT TEACHING**
A continuation of 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 & RELATED WORK EXPERIENCE**
Credit is received for related work experience.

**B23-V202 INTRODUCTION TO MICRO COMPUTERS**
The subject looks at the structure and operation of a microcomputer as well as the fundamentals of programming in the language.
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 an entry date in September. 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
- 7 high school credits (Manitoba Grade 10 or equivalent secondary school preparation) with Mathematics 100 or 101 and Science 100 or 101. English 100 or 101 is strongly recommended;
- or
- Adult Basic Education 7-10 program completion.

Mature Student Admission. Mature student applicants may submit other educational equivalents, including G.E.D. standing (scores on each of the five tests must be 41 or higher), in lieu of 7 credits; however, they must have successfully completed one of Mathematics 100, 101, 190, or Practical Mathematics - Elementary/Junior High Level and one of Science 100, 101 or 190. Mature students must also be 20 years of age or on before September 30 in the year of registration. All mature student applications are referred to the Director of Admissions/Registration for review.

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 hydro-electric power plants.

PROGRAM OUTLINE

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<td>T04-A011 Safety Precautions In Welding &amp; Cutting</td>
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<td>T04-A021 General Principles Of Arc Welding - Theory</td>
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<td>T04-A031 General Principles (Gas Metal Arc &amp; Tungsten Inert)</td>
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<td>T04-G012 Fusion (Gas) Welding, Brazing And Flame Cutting</td>
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<tr>
<td>T04-G021 Principles Of Flame Cutting And Miscellaneous Application</td>
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| T04-M510 Related Machine Shop |
| T04-W012 In-Plant Training |

| T13-M504 Welding Math |
| T13-S504 Welding Science |
| T14-C502 Communication |

COURSE DESCRIPTIONS

T03-R033 BLUE PRINT READING AND SKETCHING FOR WELDING PE
Drawing interpretation as applied to the welding trade.

T04-A011 SAFETY PRECAUTIONS IN WELDING & CUTTING
Lectures involving safety hazards and precautions encountered in general welding processes. General electrical apparatus hazards and precautions, grounding methods, machine use and adjusting. Precautions in welding various types of work, containers, cylinders, etc. Selection of lens 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, machine 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.

T04-A031 GENERAL PRINCIPLES (GAS METAL ARC & TUNGSTEN INERT)
Theory of process using shielding gas. Types of gases and control systems. Electrode materials and feeding system use and maintenance.

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 courses. Test is administered following a complete review of theory topics.

T04-A042 GAS METAL ARC WELDING (SEMI-AUTOMATIC)
Maintenance and use of equipment, flow gages, wire feeders, hand guns, etc. Applications of various shielding gases (Helium, Argon, Nitrogen, CO₂, etc.) Machine control settings.

T04-A052 TUNGSTEN INERT GAS WELDING TIG

T04-A082 SPECIAL WELDING APPLICATIONS
Special process techniques and application. Hard surfacing, metal spraying, arc-air gouging. Preparation of materials, safety precautions, etc.

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-G012 FUSION (GAS) WELDING, BRAZING AND FLAME CUTTING
Safety in setting up and using oxy-acetylene equipment. Identifying and setting torch for carburizing, neutralizing, and oxidizing flame. Introduction to fusion welding, puddling and bead-running on sheet metal. 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-G021 PRINCIPLES OF FLAME CUTTING AND MISCELLANEOUS APPLICATIONS
Lecture and demonstration (hands-on experience by student if possible) 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-M510 RELATED MACHINE SHOP
1 week - (25 hours). Basic metals, metal layout and measuring tools, metal working equipment and safety.

T04-W012 IN-PLANT TRAINING
Student is assigned to an industrial (welding) workshop. He will observe and participate in work practices under direction of shop supervisor. A report as to student's attendance, work ability, general attitude, and employment potential will be provided by the work place supervisor upon completion of the assignment.

T13-M504 WELDING MATH
Individual progress mathematic course 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, pythagoras theorem, measure of distance perimeters and circumference, measure of surface areas of various geometric figures, calculation of volume/capacity/mass for commonly used of containers.

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.

T14-C502 COMMUNICATION
A course similar to T14-C504 but only 20 hours duration.

Advanced Welding
The college also offers an Advanced Welding program to upgrade practical welding skills and techniques to meet the certification requirements of Manitoba Labour and/or the Canadian Welding Bureau.

The 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. to 1 p.m. or 10 p.m. to 6 p.m.), Monday through Friday, in the development of skills and procedures required for the various classes of certification.

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).

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.

Applicants must prove eligibility to test under:

- **Welding Examiner**
  - Mechanical and Engineering Branch
  - Manitoba Labour
  - 501 - 401 York Avenue
  - Winnipeg, Manitoba R3C 0P8
  - Telephone: 945-3374 or 945-4138

- **98 Paramount Road (test facility)**
  - Telephone: 945-1276

and/or

- **Canadian Welding Bureau (CWB)**
  - 50 Paramount Road
  - Winnipeg, Manitoba R2X 2W3
  - Telephone: 632-6316