BCIT CONTINUING STUDIES

1983-84

Within this prospectus are details on all part-time, continuing education courses offered by the British Columbia Institute of Technology through the Continuing Education and Industry Services Division.

These courses, which can be taken individually, also combine in Certificate Programs to offer the student both an educational goal and a valuable and practical credential for employment and career advancement.

This calendar begins with a section alphabetically listing individual courses in each technology, within the three main departments of Business, Health, Engineering and Core.

For students pursuing a certificate program, the second section of the calendar is devoted to a listing of certificates followed by a detailed explanation of each certificate.

The third section contains individual course descriptions in numeric sequence, and the fourth section gives all registration, counselling, academic, association, and personnel information.

Every attempt has been made to ensure accuracy and completeness in this calendar. BCIT does reserve the right to change content, requirements, and provisions without notice.

We wish you every success in your educational endeavours at the British Columbia Institute of Technology.

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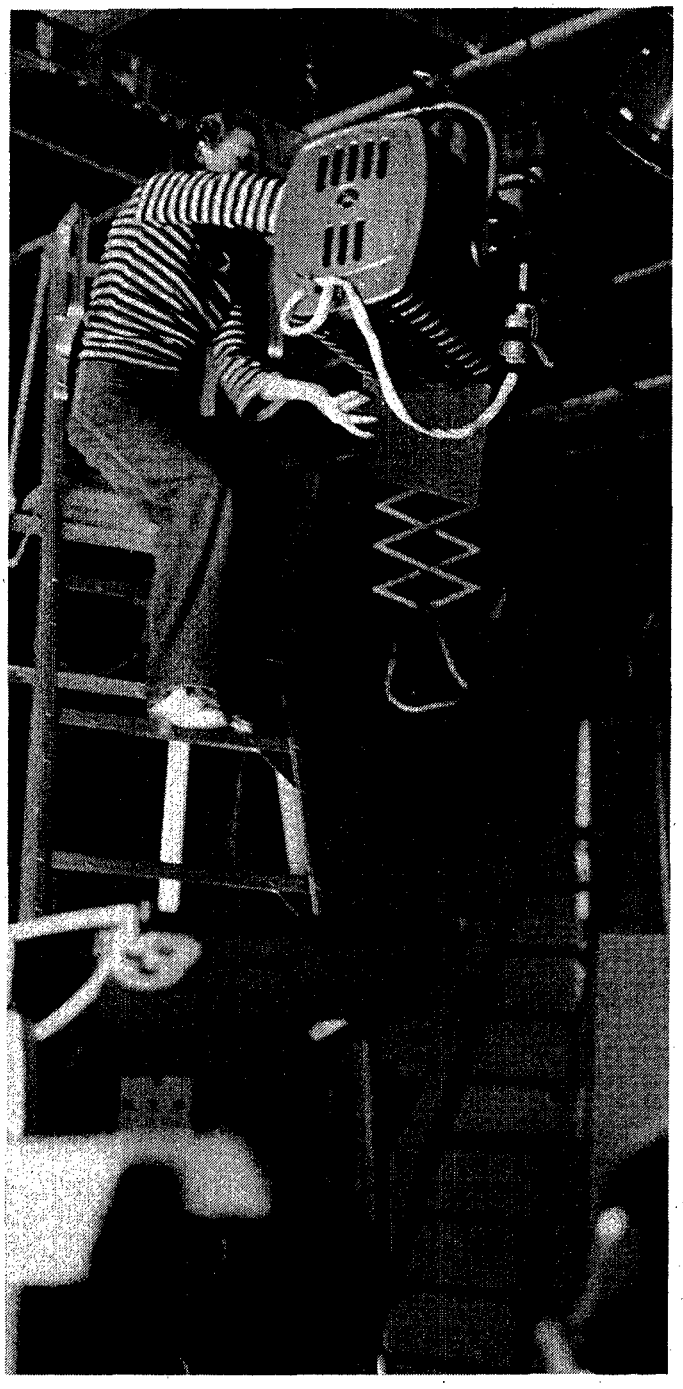
3700 Willingdon Avenue
Burnaby, B.C. Canada
V5G 3H2
Phone: (604) 434-5734

BCIT Division of Continuing Education & Industry Services



NOTE: The CLASS SCHEDULE outlining course dates, times, fees, locations, and terms is available on request.

BCIT LOCATIONS

Burnaby, Main Campus
3700 Willingdon Avenue,
Burnaby, British Columbia
V5G 3H2
434-5734 (0830-1700)
434-5741 (after 1700)

Downtown Education Centre
549 How Street
Vancouver, British Columbia
V3C 2C6
687-4666

Surrey/Langley/Richmond
Princess Margaret Senior Secondary School
12870 - 72nd Avenue, Surrey
Langley Secondary School,
21405 - 56th Avenue, Langley
Burnett Secondary School
5011 Granville Avenue, Richmond

Marv. Woolley
Eng. Consultant
CEIS

Calendar of Events

Summer 1983

July 4 (Mon.)	Summer Term begins

Fall 1983 (Term 1)

Aug. 19 (Fri.)	Deadline for Mail Registrations
Aug. 26 (Fri.)	Recommended deadline for registration in person
Sept. 12 (Mon.)	Fall Term classes begin
Sept. 24 (Sat.)	Deadline for fee refund for Term 1 classes
Oct. 10 (Mon.)	Thanksgiving Holiday
Nov. 11 (Fri.)	Remembrance Day
Dec. 05 (Mon.)	Term 1 classes end for Burnaby campus
Dec. 19 (Mon.)	Term 1 classes end for Downtown Education Centre (DEC)

Winter 1984 (Term 2)

Dec. 22 (Thurs.)	Deadline for Mail Registrations
Dec. 29 (Thurs.)	Recommended deadline for registration in person
Jan. 09 (Mon.)	Winter, Term 2 classes begin
Jan. 21 (Sat.)	Deadline for fee refund Term 2 classes
Mar. 31 (Sat.)	Term 2, 12 week classes end

Spring 1984 (Term 3)

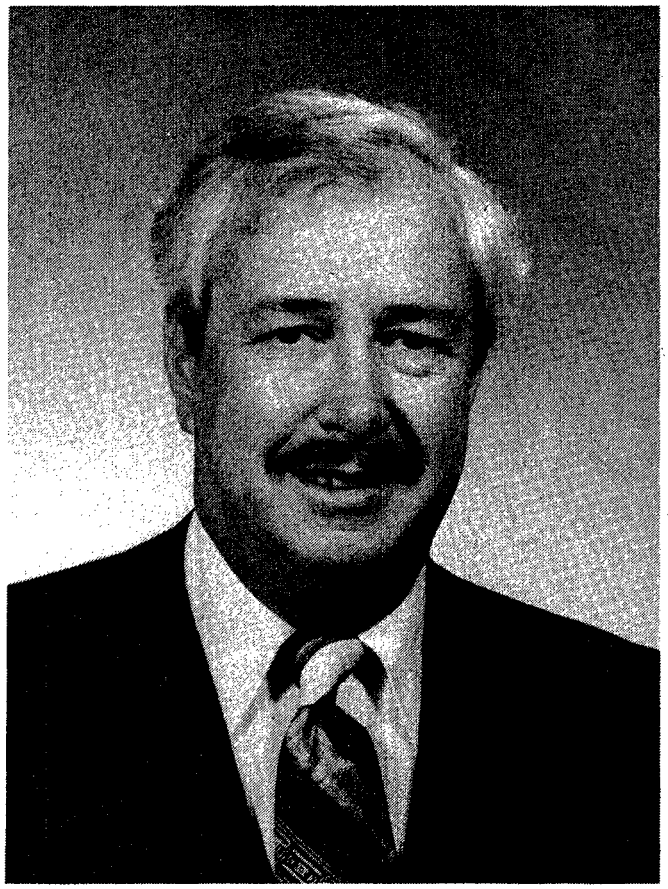
Mar. 09 (Fri.)	Deadline for submission of registration by mail
Mar. 16 (Fri.)	Recommended deadline for registration in person
Apr. 02 (Mon.)	Term 3, Spring Term classes begin
Apr. 13 (Fri.)	Term 2 classes end at the DEC (14 week courses)
Apr. 20 (Fri.)	Good Friday
Apr. 23 (Mon.)	Easter Monday
Apr. 14 (Sat.)	Deadline for fee refund for Term 3 classes
Apr. 24 (Tues.)	Term 3, Spring term to commence at the DEC
May 14 (Mon.)	Term 2, 18 week courses end
May 21 (Mon.)	Victoria Day
June 1 (Fri.)	Term 2, 21 week DEC courses end
June 30 (Sat.)	Spring Term ends

Summer 1984 (Term 4)

July and August

1983-84

President's Message



Whether you are a newcomer, or returning to the British Columbia Institute of Technology for further study, may I extend to you a warm welcome.

Continuing Education, during the past decade, has become more and more a driving force in career and personal development. To each of you who has chosen a selected field of study at BCIT, or a course of interest, lifelong learning will help you achieve the goals you have set for yourself.

The Continuing Education and Industry Services Division has developed Business, Health, Engineering, and Core programs to meet your needs and the needs of the public you serve. It is only through your satisfaction that the Institute continues to thrive.

I wish you luck in your continued studies and not only welcome you to the Institute, but invite and welcome your participation in the festivities of the BCIT Twentieth Annniversary Commemorative Ceremonies in 1984.

Gordon A. Thom,
B.Comm., M.B.A., M.Ed.,
President

Calendar

1983

January

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November

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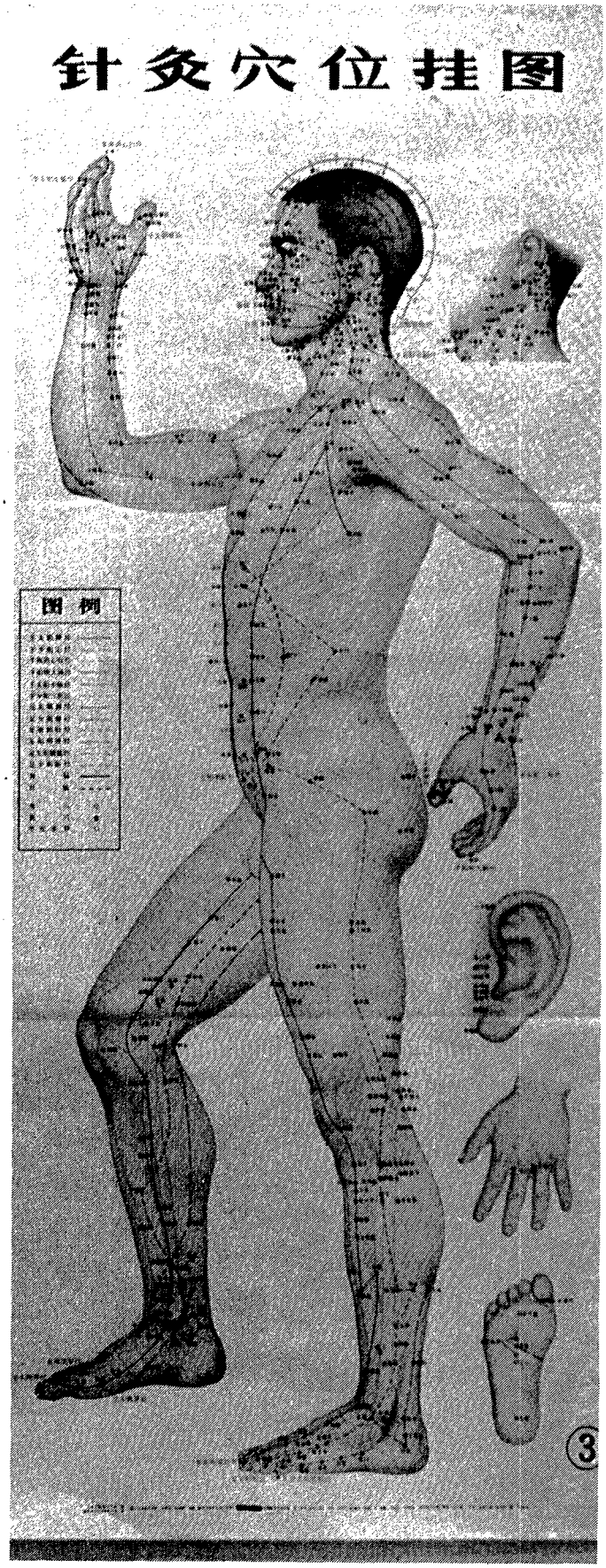


Course Listing

Descriptions of the following courses are presented in numerical sequence beginning on page **37**.

BUSINESS

Course Numbers 10.xxx - 22.xxx

Administrative Mangement

Broadcast Communications

Computer Systems

Financial Management

ENGINEERING

Course Numbers
40.xxx - 54.xxx

CORE

Course Numbers
30.xxx-34.xxx, 22.900

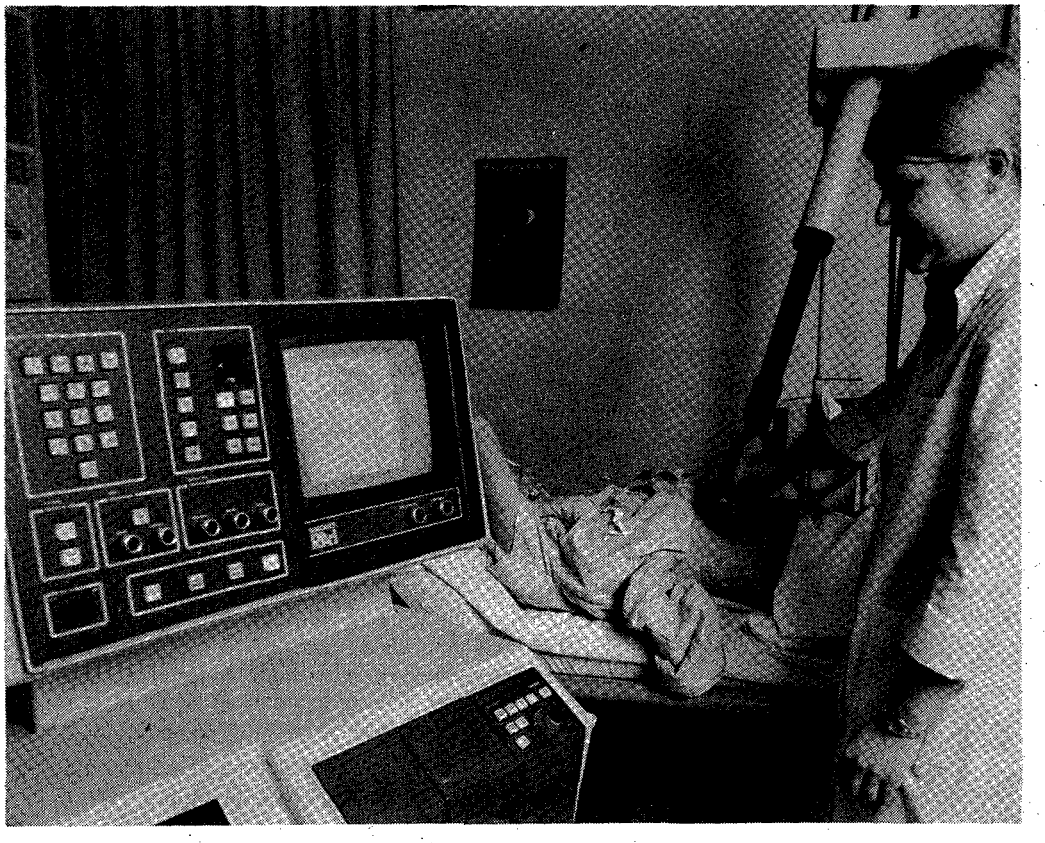
	Course Number	Page Number
Biology		
*Biology	98.909	89
•Biology	98.910	89
Chemistry		
Analytical Chemistry	30.510	60
Analytical Chemistry	30.610	60
*Chemistry	30.910	60
Chemical Instrumentation 1	30.305	59
Chemical Instrumentation 2	30.405	60
Chemical Laboratory Techniques	30.204	59
Chemical Principles 1 and 2	30.902/903	60
Gas and Liquid Chromatography	30.913	60
Laboratory Safety and Organization	30.918	60
Mass Spectrometry	30.914	60
Organic Chemistry	30.905/906	60
*Pre-Entry Chemistry	30.909	60
English		
Basic Business and Technical Communication	31.902	60
Business Report Writing	31.912	61
Business and Technical Correspondence	31.910	61
Business and Technical Report Writing	31.911	61
Business and Technical Writing	31.915	61
English Fundamentals	31.900	60
Reading Improvement and Study Skills	31.905	60
Technical Report Writing	31.914	61
Writing for the Company	31.922	61
English		
WEEKEND SPECIALS		
*Comprehensive Reading, Writing and Study Skills	31.996	61
Defensive Writing	31.908	61
*Effective Writing	31.997	62
General Telephone Answering Skills	31.980	61
*Textbook Reading and Study Skills	31.998	62
Writing for Builders	31.930	61
Writing Effective Letters	31.976	61
Writing for Health Professionals	31.925	61
Writing Reports	31.972	61
Writing for Results	31.970	61
Mathematics		
Algebra 1	32.900	62
Algebra 2	32.901	63
BASIC 1 - An Introduction to Microcomputers	32.935	63
BASIC 2 for Engineering Technology	32.936	63
Calculus 1	32.931	63
Calculus 2	32.932	63
Calculus 3	32.933	63
Computer Aided Design 2	32.938	63
Introduction to Computer Aided Design 1	32.937	63
Introductory Numerical Methods and Computer Programming	32.509/609	62
Laplace Transform Methods for Electrical Technologies	32.530/630	62
Logarithms and Analytic Geometry	32.902	63
Mathematics for Electrical Technology	32.540/640	62
Mathematics 1 for Electrical Technology	32.522/622	62
Mathematics 1A for Electrical Technology	32.980	63
Mathematics 1B for Electrical Technology	32.981	64
Mathematics 1C for Electrical Technology	32.982	64
Mathematics 2 for Electrical Technology	32.524/624	62
Mathematics 3 for Electrical Technology	32.526/626	62
Mathematics 4 for Electrical Technology	32.528/628	62
*Pre-Entry Mathematics	32.950	63
*Pre-Entry Mathematics (Correspondence)	32.X95	62
•Preparatory Business Mathematics	22.900	56
Probability and Statistics 1	32.507/607	62
Probability and Statistics 2	32.508/608	62
Statistical Quality Control with Industrial Applications	32.957	63
Trigonometry	32.903	63
Physics		
Mining Geophysics	33.404	64
Physics 1	33.508/608	64
Physics 2	33.509/609	64
Pre-Entry Physics	33.909	64

***BCIT Preparatory Courses** (See page 97 for details)

HEALTH

Course Numbers
70.xxx-88.xxx

	Course Number	Page Number
Biomedical Electronics		
Advanced Electronic Devices (Module 1)	78.904	87
Basic Electronics in Medicine & Biology	78.901	87
Electronics for ECG & EEG Monitoring	78.903	87
Inermediate Electronics in Medicine	78.902	87
Introduction to Microprocessors for Medical Applications (Module 2)	78.905	87
Microprocessor Based Medical and Clinical Equipment (Module 3)	78.906	87
Diagnostic Medical Sonography		
Physics of Diagnostic Ultrasound	73.901	86
Electrophysiology		
Basic Electronics in Medicine and Biology	78.901	87
Electronics for ECG and EEG Monitoring	78.903	87
Intermediate Electronics in Medicine and Biology	78.902	87
Environmental Health		
Basic Pest Control Within Buildings	82.902	88
Basic Sound Measurement	82.901	87
General Nursing		
Basic Mental Health Nursing	76.902	87
Cancer Update	76.931	87
Diabetes Update	76.930	87
Enterostomal Therapy: The Role of the Nurse	76.909	87
Gerontology Concepts	76.911	87
Intravenous Therapy	76.913	87
Nursing Management of Behavior Patterns	76.918	87
Nursing Management of Respiratory Problems	76.933	87
Obstetrical Nursing	76.903	87
Obstetrical Nursing Update	76.919	87
Operating Room Nursing - Level 1 Part 1	76.906	87
Operating Room Nursing - Level 1 Part 2	76.907	87
Refresher Course for Graduate Nurses	76.901	87
Health Care Management Certificate		
Budgeting in Health Care	87.513	88
Health Care Principles of Management	87.511	88
Health Care Supervisory Skills, Overview of	87.500	88
Health Care Systems	87.514	88
Health Labor Relations	87.516	88
Health Care Organizational Behavior	87.510	88
Operations Management in Health	87.512	88
Human Resource Management	87.515	88
Health Care Management - Professional Development		
Administrative Cost Control for Long Term Care Administrators	87.922	88



Certificate Programs

This Certificate Program section is made up of course groupings representing the suggested basic Certificate Programs within each technology in the departments of Business, Engineering, and Health. Preceeding this is a list of certificate programs within each technology with the page number where they can be found.

The basic certificate, a minimum of 15 units, is attainable over three years. This three year period is flexible and these suggested programs can, in most cases, be amended to suit the individual career goals of the student.

BUSINESS

Prior to embarking on a Business Certificate Program it is advisable to consult a Program Consultant. It is *essential* to submit any planned revision to a Program Consultant for approval by the appropriate Technology Department. Programs for Senior Certificates, Diplomas of Technology, and Special Certificates in Business must be approved in advance.

ENGINEERING

Certificate Programs in Engineering *must* be submitted to a Program Consultant for approval by the appropriate Technology Department Head. Senior Certificates and Diplomas of Technology are outlined within the Technologies where they are offered.

HEALTH

The Health section includes Certificate Programs and course groupings by Technology. These course groupings include update, advanced, and qualifying courses in the Health field. It is recommended that students speak with a Program Consultant prior to registering in a program. Many Health courses require preapproval.

CORE

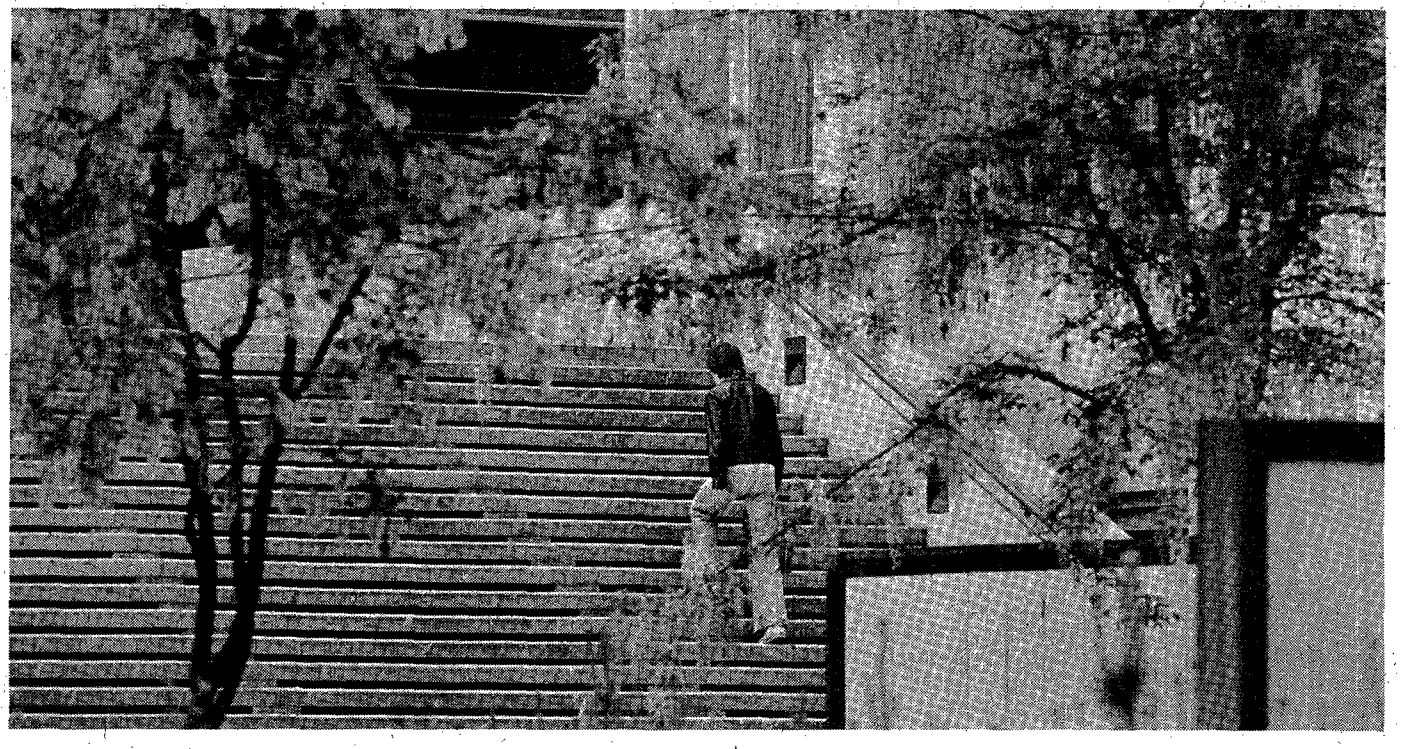
If upgrading is required in specific areas prior to entering a program, most appropriate courses are offered through CORE. For a listing of these courses see the Core section of the Courses Listings on page 5.

To arrange a meeting with a Program Consultant telephone 434-5734 and ask to speak with a Program Consultant in the relevant area of Business, Engineering, or Health; or see page 97 for details. An application for Program Approval is located on the reverse of the pull-out campus map within this calendar.

Further information about Senior Certificates, the Diplomas of Technology, Special Certificates, and Certificate Programs is presented in the Academic Information section of this calendar.

BUSINESS

ENGINEERING



COMBINED BUSINESS AND ENGINEERING

HEALTH

Administrative Management Technology

BUSINESS CERTIFICATE IN ADMINISTRATIVE MANAGEMENT

This program option is designed for people requiring a broad understanding and expertise in a variety of mangement responsibilities in both the public and private sectors of our economy.

Graduates work as managers in planning, banking, finance, production, marketing, and real estate.

First Level Courses		Unit
10.131	Management 1	1.0
10.232	Management 2	1.0
10.221	Organizational Behavior 1	1.0
10.321	Organizational Behavior 2	1.0
10.910	Personnel Management	1.0
10.907	Discussion Leadership	1.0
16.904	Accounting for the Manager	1.0
Second Level Courses		
10.325	Labor Relations 1	1.0
10.425	Labor Relations 2	1.0
10.908	Problem Solving and Decision Making	1.0
10.135	Economics 1 — Micro	1.0
10.235	Economics 2 — Macro	1.5
10.360	Business Law 1	1.0
10.460	Business Law 2	1.0
	Electives	0.5
		15.0

BUSINESS CERTIFICATE IN PUBLIC ADMINISTRATION (for Municipal option — see below)

A program option designed for people requiring broad understanding of management responsibilities as they relate primarily to the public sector.

Graduates work in the public service at municipal, regional, provincial, or federal levels, or enter the private sector as general administrators.

First Level Courses		Unit
10.131	Management 1	1.0
10.232	Management 2	1.0
10.221	Organizational Behavior 1	1.0
10.321	Organizational Behavior 2	1.0
10.910	Personnel Management	1.0
10.240	Government and Business	1.0
16.904	Accounting for the Manager	1.0
31.910	Business and Technical Correspondence or	
31.912	Business Report Writing	1.0
Second Level Courses		
16.350	Public Financial Administration	1.0
10.325	Labor Relations 1	1.0
10.425	Labor Relations 2	1.0
10.135	Economics 1	1.0
10.235	Economics 2	1.5
	Electives	2.0
		15.5

For information on certification by the Board of Examiners see page 104.

Students who want a BCIT Business Certificate in Public Administration (Municipal Administration Option) should substitute 10.957 Municipal Law and an elective.

BUSINESS CERTIFICATE IN PERSONNEL MANAGEMENT

This program option provides training for people interested in developing their knowledge and expertise in personnel and industrial relations related employment.

Graduates have the expertise to work in areas such as manpower selection and placement, manpower training and development, job evaluation and labor-management relations. The training covers situations in both the public and private sector.

First Level Courses		Unit
10.131	Management 1	1.0
10.232	Management 2	1.0
10.221	Organizational Behavior 1	1.0
10.321	Organizational Behavior 2	1.0
10.907	Discussion Leadership	1.0
10.910	Personnel Management	1.0
Second Level Courses		
10.913	Selection Interviewing	1.0
10.950	Training Techniques	1.0
10.918	Occupational Safety and Health	1.0
10.914	Manpower Planning	1.0
10.901	Salary Administration	1.0
10.325	Labor Relations 1	1.0
10.425	Labor Relations 2	1.0
	Electives	2.0
		15.0

Electives and Substitutions

Electives and substitutions may be selected from any course listed in Administrative Management Technology when approved by a Program Consultant, or such courses as:

		Unit
14.050 or 14.914	Data Processing — Introduction	1.0
14.052	Computers in Business	1.0
16.361/461	Business Finance 1 and 2	2.5
16.904	Accounting for the Manager	1.0
18.927	Customer Relations and Communication Skills	1.0
20.180/280	Marketing 1 and 2	2.5
20.502/602	Public Speaking and Oral Communication 1 and 2	2.0
22.100	Basic Mathematics of Finance	1.0
22.901	Purchasing	1.0
22.902	Inventory Planning and Control	1.0
22.906	Advanced Purchasing	1.0
22.935	Statistics for Business and Industry	1.5
22.941	Method Study — Manufacturing	1.0
22.943	Performance Measurement	1.0
22.944	Project Study — Manufacturing	0.5
22.948	Method Study — Office	1.0
22.952	Systems and Procedures — Manual	1.0
22.954	Project Study — Office	0.5
22.963	Mathematics for Mangement	1.5
31.910	Business and Technical Correspondence	1.0
31.912	Business Report Writing	1.0
31.979	Telephone Communication Techniques	0.5

or other courses listed in the Business Management Division, selected by the student, and approved in writing by a Program Consultant.

Broadcast Communication Technology

Prospective applicants should attend a counselling session prior to enroling in any Broadcast Communications part-time course. These sessions are each Monday at 1730 hours in Room 1A-129 (just off the main lobby at BCIT Burnaby), from the third week in August through the third week in June, excluding holidays and Christmas break. A Broadcast Communication consultant will be available. Confirmation of dates can be obtained by contacting Continuing Education Business Division at 434-5734.

Entry into the Second Year Day School Program

Students who wish to enter the second year of the full-time program may do so by successfully completing the Certificate Program plus an additional 9 units of approved courses outside the Broadcast Communications Department. Thus students who complete 24 units and meet normal entry requirements to full-time programs may enter the second year if positions are available.

Approval must be obtained from the Continuing Education Division Broadcast Communications Coordinator and the Department Head of Broadcast Communications for entry into full-time program at any level other than first year. Entry is conditional upon meeting all prerequisites for entry into a Broadcast full-time program. An interview will be required. *Applicants must also be prepared to attend the intersessional,* an intensive full-time program operating five days a week for four weeks, commencing in the middle of April every year.

BUSINESS CERTIFICATE BROADCAST COMMUNICATION

Students seeking a Certificate in Broadcast Communications should be prepared to complete a total of 15 units, a minimum of 10 units in Broadcast subjects (courses 12.901 to 12.942), plus an additional 5 units from Broadcast or other business *technologies. At least two courses in each of the radio, television* and broadcast journalism areas must be included in the 10 units.

First Level Courses		Unit
12.901	Radio Broadcasting Introduction	1.0
12.902	Television Broadcasting Introduction	1.0
12.903	Film for Beginners	1.0
12.905	Copywriting for Radio and Television	1.0
12.908	Broadcast News Writing	1.0
12.910	Investigative Reporting	1.0
12.912	Radio and Television Announcing	1.0
12.913	Broadcast Journalism Introduction	1.0
12.917	Broadcast Sales and Management	1.0
12.925	The Music Business and Broadcast Industry	1.0
12.926	Development of Contemporary Music	1.0
12.927	Dramatic Writing for Film and Television	1.0
12.928	Broadcast Industry Organization	1.0
12.930	Writing for the Media	1.0

Second Level Courses (requiring prerequisites)

12.512	Television Production Techniques	1.0
12.612	Television Operations Techniques	1.0
12.911	Radio Commercial and Audio Production	1.0
12.921	Radio Operations Lab	1.0

Electives

10.221	Organizational Behavior 1	1.0
10.131	Management 1	1.0
10.904	Supervisory Skills	1.0
22.953	Project Planning and Scheduling	1.0
31.910	Business and Technical Correspondence	1.0
31.912	Business Report Writing	1.0

Computer Systems Technology

BUSINESS CERTIFICATE IN COMPUTER SYSTEMS TECHNOLOGY

This program is designed for people working in or seeking employment in the Data Processing Industry. Graduates are qualified to work as programmers, programmer/analysts, or junior systems analysts.

First Level Courses		Unit
14.050	Data Processing — Introduction **or**	1.0
14.914	Introduction to Data Processing — Microcomputers	1.0
16.140	Accounting 1	1.0
16.240	Accounting 2	1.5
Second Level Courses		
14.902	Computer Programming — Assembler 1	1.0
14.505	Computer Systems — Introduction 1	1.0
14.605	Computer Systems — Introduction 2 **or**	1.0
14.515	Computer Systems Development 1	1.0
14.615	Computer Systems Development 2	1.0
	Five units of Computer Programming "high level" languages selected from list below.	5.0
Electives	Business (non computer)	3.5
		15.0

The specified courses shown above (other than electives) are normally required for the basic certificate. Business (non computer) courses may be selected from the list entitled Electives and Substitutions. Five units of "high-level" languages are required. These units may be selected, in any combination, from the following list.

		Unit
14.503	Computer Programming PL/1 — Introduction	1.0
14.603	Computer Programming PL/1 — Advanced	1.0
14.909	Fortran IV — Introduction	1.0
14.913	Fortran IV — Intermediate	1.0
14.917	Fortran IV — Advanced	1.0
14.919	Basic — Interactive Programming 1	1.0
14.920	Basic — Interactive Programming 2	1.0
14.923	Computer Programming — COBOL — Introduction	1.0
14.924	Computer Programming — COBOL — Advanced	1.0
14.927	RPG II — Introduction	1.0
14.940	Computer Programming — Pascal	1.0

At least six units (including Accounting) must be non-computer courses. A minimum of 15 units is required for the basic certificate.

Students working on a high-level certificate such as the Senior Business Certificate should choose not more than 50% of their courses from non-computer electives.

Note:

1. Students with a university degree or graduates from BCIT with a National Diploma of Technology may receive a Special Certificate by taking 15 units of further part-time studies.
2. Students with programming experience or managerial experience in a business environment should consider taking 14.515/615 Computer Systems Development instead of 14.505/605 Computer Systems Introduction. For clarification, read the course descriptions in this calendar and contact the Computer Systems Technology Coordinator.
3. The sequence of the courses shown is not mandatory. Students may alter the sequence to suit their needs.

Prerequisite Exemptions

Students wishing to apply for an exemption of the required prerequisite must submit sufficient documentation to the program consultant, at least four weeks prior to registration. Documentation should include official transcripts and course outlines or a letter from your employer outlining present job duties and functions.

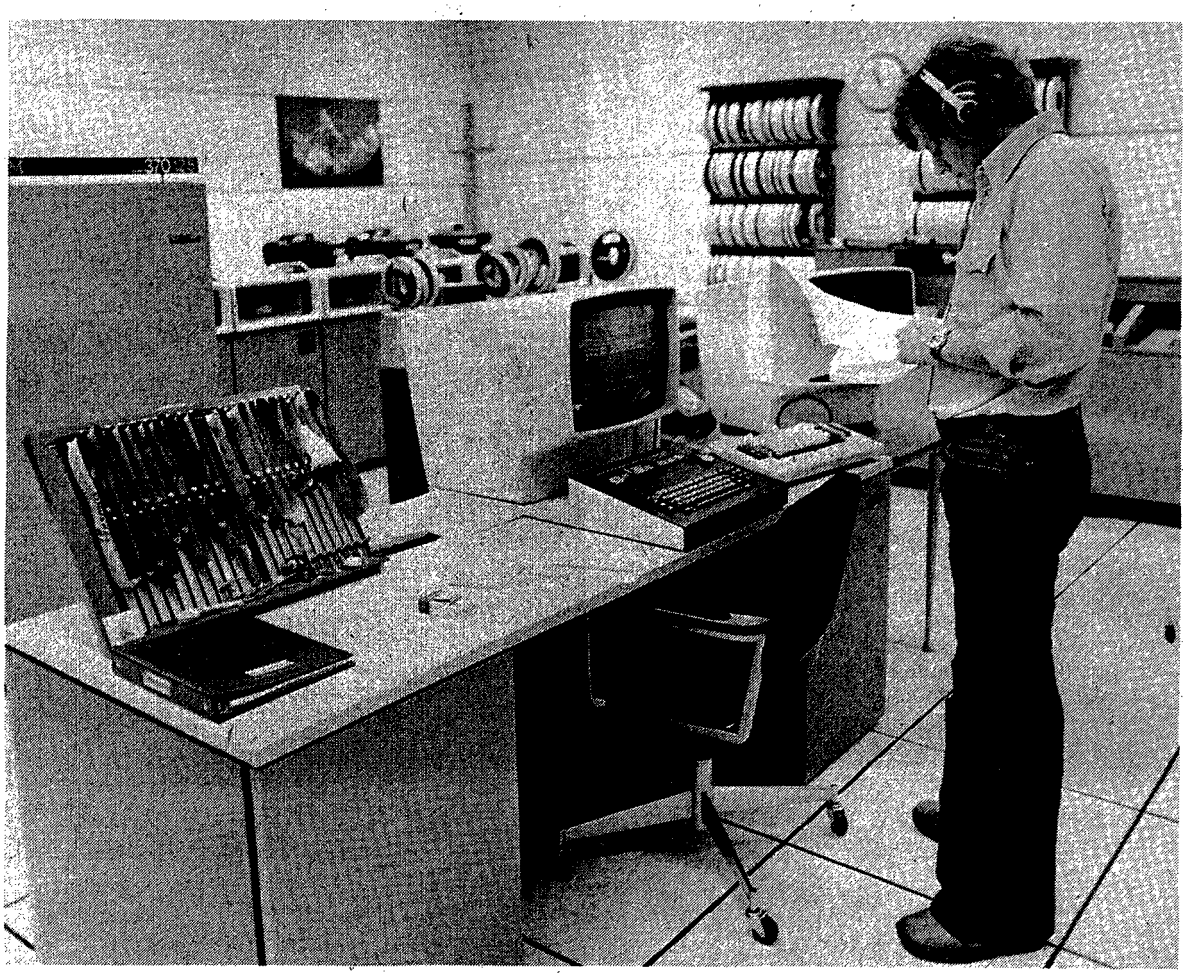
Electives and Substitutions

Selections should be approved in advance, in writing, by the co-ordinator to ensure that they are appropriate and will be accepted as an elective or substitute.

Electives and substitutions may be selected from any course listed in the Computer Systems Technology, or such courses as:

		Unit
10.131	Management 1	1.0
10.135/235	Economics 1 and 2	2.5
10.232	Management 2	1.0
10.905	Managerial Styles	1.0
16.341/441	Cost Accounting 1 and 2	2.5
16.347/447	Financial Accounting 1 and 2	2.5
18.927	Customer Relations and Communication Skills	1.0
20.502/602	Public Speaking and Oral Communication 1 and 2	2.0
20.914	General Marketing	1.0
22.100	Basic Mathematics of Finance	1.0
22.935	Statistics for Business and Industry	1.5
22.941	Method Study — Manufacturing	1.0
22.943	Performance Measurement	1.0
22.944	Project Study — Manufacturing	0.5
22.948	Method Study — Office	1.0
22.952	Systems and Procedures — Manual	1.0
22.953	Project Planning and Scheduling	1.0
22.954	Project Study — Office	0.5
22.956	Management Information Systems	1.0
22.963	Mathematics for Management	1.5
31.910	Business and Technical Correspondence	1.0
31.912	Business Report Writing	1.0
43.507/607	Digital Techniques 1	2.0

Courses in the Business Management Division may be selected with approval of the Program Consultant. In selecting electives, students are advised to read this calendar and determine what courses they feel would be appropriate for their certificate program.



Financial Management Technology

BUSINESS CERTIFICATE IN ACCOUNTING

This program establishes a firm grounding in financial management with an emphasis on the generation and understanding of financial reports. There is ample opportunity for specialization to suit individual needs and preferences.

First Level Courses		Unit
16.140	Accounting 1	1.0
16.240	Accounting 2	1.5
10.131	Management 1	1.0
10.232	Management 2	1.0
10.135	Economics 1	1.0
10.235	Economics 2	1.5
14.050	Data Processing — Introduction or	1.0
14.914	Data Processing — Introduction	1.0
Second Level Courses		
16.347/447	Financial Accounting 1 and 2 **or**	2.5
16.341/441	Cost Accounting 1 and 2 **or**	2.5
16.346/446	Auditing 1 and 2 **or**	2.5
16.912/913	Taxation 1 and 2	2.0
	Electives as required	4.5
	or	5.0
		15.0

BUSINESS CERTIFICATE IN FINANCE

A program designed for those working or aspiring to work in the financial administration area of a firm. The program is also appropriate for those who have progressed to a position in an organization where they must add financial skills to their repetoire.

First Level Courses		Unit
16.140	Accounting 1	1.0
16.240	Accounting 2	1.5
10.131	Management 1	1.0
10.232	Management 2	1.0
10.135	Economics 1	1.0
10.235	Economics 2	1.5
14.050	Data Processing — Introduction or	1.0
14.914	Data Processing — Introduction	1.0
Second Level Courses		
16.361	Business Finance 1	1.0
16.461	Business Finance 2	1.5
22.100	Basic Mathematics of Finance	1.0
16.911	Security Analysis	1.0
	Electives	2.5
		15.0

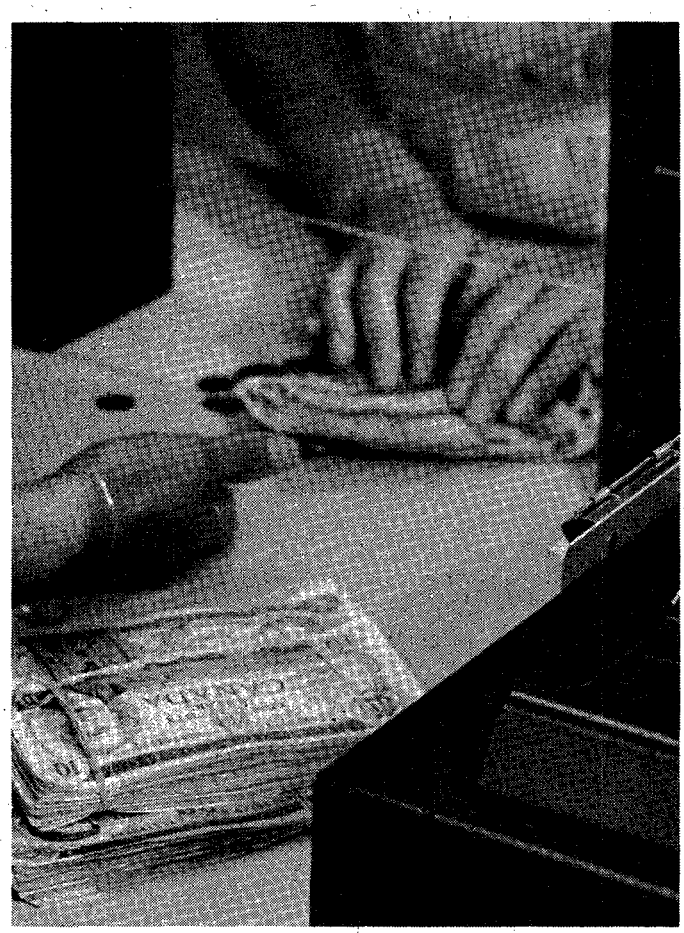
Electives and Substitutions

Selections should be approved in advance by a Program Consultant to ensure that they are appropriate and will be accepted as an elective or substitution.

Electives and substitutions may be selected from any course listed in the Financial Management Technology, or such courses as:

		Unit
10.221/321	Organizational Behavior 1 and 2	2.0
10.325/425	Labor Relations 1 and 2	2.0
10.360/460	Business Law 1 and 2	2.0
10.905	Managerial Styles	1.0
10.908	Problem Solving and Decision Making	1.0
10.924	Management by Objectives	1.0
14.052	Computers in Business	1.0
18.927	Customer Relations and Communication Skills	1.0
20.502/602	Public Speaking and Oral Communication 1 and 2	2.0
20.914	General Marketing	1.0
22.100	Basic Mathematics of Finance	1.0
22.901	Purchasing	1.0
22.902	Inventory Planning and Control	1.0
22.935	Statistics for Business and Industry	1.5
22.948	Method Study — Office	1.0
22.952	Systems and Procedures — Manual	1.0
22.954	Project Study — Office	0.5
22.963	Mathematics for Management	1.5
31.910	Business and Technical Correspondence	1.0
31.912	Business Report Writing	1.0

or other courses listed in the Business Management Division selected by the student and approved in writing by a Program Consultant.



Hospitality and Tourism Administration Technology

BUSINESS CERTIFICATE IN HOSPITALITY AND TOURISM MANAGEMENT — HOTEL OPTION

The Hotel option of Hospitality and Tourism Management is designed to give students a broad understanding of the Hotel, Motel and Accommodations industry, and provide some specific entry-level skills to assist the student in securing employment in this Industry.

Certificate Graduates can expect rewarding employment as hotel reception clerks, front office managers, revenue and cost accounting clerks, marketing and sales representatives, and housekeeping department managers. A general introduction into the food and beverage industry will also benefit the graduate in career advacement.

First Level Courses		Unit
16.140	Accounting 1	1.0
18.924	Front Office Procedures	1.0
18.925	Front Office Posting Practicum	0.5
18.331	Introduction to Tourism	1.0
18.900	Career Exploration for the Hospitality Industry	0.5
18.927	Customer Relations and Communication Skills	1.0
18.930	Beverage Management: Lounges and Pubs	1.0
19.941	Housekeeping Department and Records	1.0
Second Level Courses		
16.240	Accounting 2	1.5
18.313	Food and Beverage Cost Control	1.0
18.418	Night Audit Procedures	0.5
18.908	Hospitality Management Accounting	1.0
18.912	Financial Management for the Hospitality Industry	1.0
18.935	Marketing Concepts	1.0
18.936	Developing an Effective Sales Program	1.0
	One language from Electives List A	1.0
	Electives	1.0
		15.0

BUSINESS CERTIFICATE IN HOSPITALITY AND TOURISM MANAGEMENT — FOOD AND BEVERAGE OPTION

This Hospitality and Tourism Management option is designed to give students a broad understanding as well as some entry-level skills related to the Food and Beverage industry.

Students completing the Certificate program may find challenging career opportunities in restaurants, cafeterias, dining rooms, hotels, lounges and pubs. Some courses will also appeal to potential entrepreneurs. Career opportunities exist as food and beverage managers, catering supervisors, food production supervisors, cost accounting managers, facilities and equipment designers, and sales representatives, bartenders, and food service personnel.

First Level Courses		Unit
16.140	Accounting 1	1.0
18.331	Introduction to Tourism	1.0
18.422	Menu Planning	1.0
18.900	Career Exploration for the Hospitality Industry	0.5
18.901	Introduction to Bartending	0.5
18.905	Introduction to Food and Beverage Management	1.0
18.927	Customer Relations and Communication Skills	1.0
18.930	Beverage Management, Lounges and Pubs	1.0
Second Level Courses		
16.240	Accounting 2	1.5
18.313	Food and Beverage Cost Control	1.0
18.902	Property Investment for Hospitality Operations	1.0
18.908	Hospitality Management Accounting	1.0
18.909	Restaurant Planning	1.0
18.911	Profitable Restaurant Operation	1.0
18.913	Understanding Wines and Spirits	1.0
	Electives	0.5
		15.0

BUSINESS CERTIFICATE IN HOSPITALITY AND TOURISM MANAGEMENT — TRAVEL AND TOURISM OPTION

The Travel and Tourism option of Hospitality and Tourism is designed to give the participants a broad, general understanding of the numerous opportunities available in a variety of tourism-travel related industry sectors. Several of the courses offer specialized skill-building modules which will prove beneficial when seeking employment or advancement.

Graduates of this Certificate may expect employment as travel agency clerks leading to travel counselling, ticket agents for transportation companies and agencies, tour guides and managers, tour booking clerks, hotel group booking clerks, guest information clerks in government and association-sponsored travel offices, and marketing and sales positions in a variety of tourism-related operations.

First Level Courses		Unit
14.050	Data Processing — Introduction	1.0
16.904	Accounting for the Manager	1.0
18.331	Introduction to Tourism	1.0
18.915	Travel Agency and Tour Operations — An Introduction	1.5
18.918	Domestic Air	1.0
18.922	Tourism Geography	1.0
18.927	Customer Relations and Communication Skills	1.0
	Two of the courses from List B	1.0
Second Level Courses		
10.131	Management 1	1.0
10.232	Mangement 2	1.0
18.919	International Air 1	1.0
18.921	International Air 2	1.0
18.940	Tour Managing, Escorting and Guiding	0.5
		1.5
	One of the courses from Electives List A	1.0
18.920	Automated Reservations	1.0
		15.0

Electives

List A		Unit
18.950	Communication in Japanese	1.0
18.951	Communication in French	1.0
18.952	Communication in Spanish	1.0
18.953	Communication in German	1.0
List B		
18.941	Tourism Destinational Study: Europe	0.5
18.942	Tourism Destinational Study: Africa	0.5
18.943	Tourism Destinational Study: Pacific Rim	0.5
18.944	Tourism Destinational Study: South Pacific	0.5

Electives and Substitutions

Selections should be approved in advance, in writing by a Program Consultant to ensure that they are appropriate and will be accepted as an elective or substitution.

Electives and substitutions may be selected from courses listed in other Hospitality and Tourism Administration Technology options, or such cross-Technology courses as:

		Unit
10.131/232	Mangement 1 and 2	2.0
10.135/235	Economics 1 and 2	2.5
10.221	Organizational Behavior 1	1.0
10.321	Organizational Behavior 2	1.0
10.907	Discussion Leadership	1.0
14.050	Data Processing — Introduction	1.0
16.140/240	Accounting 1 and 2	2.5
16.145	Credit and Collections	1.0
18.928	Automated Ticketing	0.5
19.940	Orientation and Techniques for the Executive Housekeeper	1.0
19.941	Housekeeping Department Organization and Records	1.0
19.942	Housekeeping Department Budgeting, Purchasing and Equipment	1.0
20.310	Small Business Development	1.0
20.323	Sales Management	1.0
20.410	Small Business Management	1.0
20.502/602	Public Speaking and Oral Communication 1 and 2	2.0
20.906	Public Relations	1.0
22.948	Method Study — Office	1.0
31.912	Business Report Writing	1.0

Marketing Management Technology

BUSINESS CERTIFICATE IN MARKETING

A program designed for those requiring a broad understanding of the various marketing related activities, rather than a highly specialized set of skills.

Graduates are qualified to work as general responsibility managers in retail, wholesale, manufacturing, or service organizations.

Courses are designed to develop planning, scheduling, and control techniques over general demand development and sales operation.

First Level Courses		Unit
20.180	Marketing 1	1.0
20.280	Marketing 2	1.5
10.131	Management 1	1.0
10.232	Management 2	1.0

Second Level Courses		
20.275	Professional Sales	1.0
20.502	Public Speaking and Oral Communication 1	1.0
20.387	Marketing Planning	1.0
20.903	Marketing Research	1.0
16.904	Accounting for the Manager	1.0
31.912	Business Report Writing	1.0
20.323	Sales Management	1.0
	Electives	3.5
		15.0

BUSINESS CERTIFICATE IN INTERNATIONAL BUSINESS

A program designed for those needing basic skills in developing imports and exports within a company operation.

Graduates are qualified to locate suitable buyers or suppliers, arrange efficient transport of goods, and establish appropriate financial arrangements.

The courses are designed to give basic exposure to documentation, credit instruments, market data, etc. as they relate to foreign trade dealings.

First Level Courses		Unit
20.180	Marketing 1	1.0
20.280	Marketing 2	1.5
20.360	Export/Import Development	1.0
20.463	Financing International Trade	1.0

Second Level Courses		
20.903	Marketing Research	1.0
22.916	Principles of Importing/Exporting	1.5
20.462	International Marketing Management	1.5
14.050	Data Processing — Introduction	1.0
20.490	Directed Studies	1.5
	Electives	4.0
		15.0

Electives		
10.135/235	Economics 1 and 2	2.5
16.140/240	Accounting 1 and 2	2.5
16.904	Accounting for the Manager	1.0
10.360/460	Business Law 1 and 2	2.0
20.275	Professional Sales	1.0
20.387	Marketing Planning	1.0
20.323	Sales Management	1.0

BUSINESS CERTIFICATE IN ADVERTISING AND PUBLIC RELATIONS

A program detailing specific campaign development and design requirements.

The graduate can set realistic advertising objectives; select appropriate message design; adopt suitable media, budget, and campaign timing and expenditures.

The courses offer ample opportunity for experience based learning through project activities.

First Level Courses		Unit
20.180	Marketing 1	1.0
20.280	Marketing 2	1.5
20.371	Advertising 1	1.0
20.471	Advertising 2	1.0

Second Level Courses		
20.372	Industrial Marketing	1.0
20.502	Public Speaking and Oral Communication 1	1.0
20.602	Public Speaking and Oral Communication 2	1.0
20.906	Public Relations	1.0
20.930	Advertising Creative Print	1.0
16.904	Accounting for the Manager	1.0
10.131	Management 1	1.0
10.232	Management 2	1.0
12.905	Copywriting Radio and TV	1.0
	Electives	1.5
		15.0

BUSINESS CERTIFICATE IN TECHNICAL SALES REPRESENTATIVE

A program for those who must prepare and present sales presentations to professional buyers.

The graduate will analyze buyer needs, plan detailed presentations, and execute oral and written skills.

There is emphasis on need definition and the various communication tools that address these needs effectively.

First Level Courses		Unit
20.180	Marketing 1	1.0
20.280	Marketing 2	1.5
10.131	Management 1	1.0
10.232	Management 2	1.0
Second Level Courses		
20.275	Professional Sales	1.0
20.372	Industrial Marketing	1.0
20.502	Public Speaking and Oral Communication 1	1.0
20.387	Marketing Planning	1.0
31.912	Business Report Writing	1.0
31.910	Business and Technical Correspondence	1.0
20.323	Sales Management	1.0
	Electives	3.5
		15.0

BUSINESS CERTIFICATE IN NEW ENTERPRISE DEVELOPMENT

A program most appropriate for those starting an independent business or managing a small business.

The graduate can effectively coordinate the management demands of a small business.

Emphasis is on low time requirement techniques for financial, personnel, and marketing planning. The isolation of essential facts for fast decision making is consistently dealt with.

First Level Courses		Unit
10.131	Mangement 1	1.0
10.232	Management 2	1.0
16.140	Accounting 1	1.0
16.240	Accounting 2	1.5
Second Level Courses		
20.310	Small Business Development	1.0
20.914	General Marketing	1.0
20.971	Advertising for the Small Business	1.0
20.410	Small Business Management	1.0
16.912	Taxation 1	1.0
16.913	Taxation 2	1.0
20.490	Directed Studies	1.5
	Electives	3.0
		15.0

Suggested Electives		
14.050	Data Processing — Introduction, **or**	1.0
14.914	Introduction to Data Processing — Microcomputers	1.0
20.411	Merchandising/Retailing	1.5
18.902	Property Investment for Hospitality Operations	1.0
18.911	Profitable Restaurant Operation	1.0
18.909	Restaurant Planning	1.0
18.935	Marketing Concepts — Hospitality and Tourism	1.0
20.275	Professional Sales	1.0
22.916	Principles of Importing/Exporting	1.5
49.913	Inventions, Development and Marketing	1.0

BUSINESS CERTIFICATE IN RETAIL MERCHANDISING

A program designed for those with some retailing experience seeking advancement into merchandising management positions.

The graduate can make sound buying decisions, develop sales forecasts, and plan effective merchandise presentations.

There is emphasis on sound budgeting and profit planning techniques using operating records extensively.

First Level Courses		Unit
20.180	Marketing 1	1.0
20.280	Marketing 2	1.5
10.131	Management 1	1.0
10.232	Management 2	1.0
Second Level Courses		
20.275	Professional Sales	1.0
20.903	Marketing Research	1.0
20.411	Merchandising/Retailing	1.5
20.371	Advertising 1	1.0
20.471	Advertising 2	1.0
16.904	Accounting for the Manager	1.0
	Electives	4.0
		15.0

Electives and Substitutions

Selections should be approved in advance, in writing by a Program Consultant to ensure that they are appropriate and will be accepted as an elective or substitution.

Electives and substitutions may be selected from courses listed in the Marketing Management Technology when approved as above, or such courses as:

		Unit
10.135/235	Economics 1 and 2	2.5
10.221/321	Organizational Behavior 1 and 2	2.0
10.325/425	Labor Relations 1 and 2	2.0
10.360/460	Business Law 1 and 2	2.0
10.907	Discussion Leadership	1.0
10.924	Management by Objectives	1.0
14.050	Data Processing — Introduction	1.0
16.140/240	Accounting 1 and 2	2.5
16.145	Credit and Collections	1.0
16.904	Accounting for the Manager	1.0
18.927	Customer Relations and Communication Skills	1.0
22.100	Basic Mathematics of Finance	1.0
22.901	Purchasing	1.0
22.902	Inventory Planning and Control	1.0
22.935	Statistics for Business and Industry	1.5
22.941	Method Study — Manufacturing	1.0
22.943	Performance Measurement	1.0
22.944	Project Study — Manufacturing	0.5
22.946	Facility Layout and Material Handling — Manufacturing	1.0
22.947	Facility Layout and Material Handling — Office	1.0
22.948	Method Study — Office	1.0
22.952	Systems and Procedures — Manual	1.0
22.954	Project Study — Office	0.5
22.963	Mathematics for Management	1.5
31.910	Business and Technical Correspondence	1.0
31.912	Business Report Writing	1.0
31.914	Technical Report Writing	1.0
31.979	Telephone Communication Techniques	0.5

or courses listed in the Business Management Division, selected by the student and approved in writing by a Program Consultant.

Operations Management Technology

Operations Management Technology offers students the opportunity to acquire the techniques needed to solve complex business problems that have applications to both the business and engineering worlds. Graduates of this program can expect a rewarding career in business, industry or government. Graduates in Operations Management Technology work in such diverse areas as: production and inventory control, systems and procedure design, method study, planning and scheduling, facility location and layout, feasibility studies and systems analysis.

Please contact the Program Consultant, Business, if you would like more information on Operations Management Technology.

BUSINESS CERTIFICATE IN OPERATIONS MANAGEMENT — MATERIALS MANAGEMENT

This program is designed for people who are working, or plan to find employment in, the area of Materials Management. Graduates will be capable of working as purchasing agents, planner-buyers, inventory control analysts, distribution managers.

Courses are designed to give graduates techniques in areas such as purchasing, facility layout, quality control, make-"buy" decisions, and data processing.

First Level Courses		Unit
22.901	Purchasing	1.0
22.902	Inventory Planning and Control	1.0
22.100	Basic Mathematics of Finance	1.0
14.050	Data Processing — Introduction, **or**	1.0
14.914	Introduction to Data Processing — Micro	1.0
16.904	Accounting for the Manager	1.0
Second Level Courses		
22.941	Method Study — Manufacturing	1.0
22.935	Statistics for Business and Industry	1.5
22.953	Project Planning and Scheduling	1.0
22.950	Physical Material Handling and Inventory Space Planning	0.5
22.956	Management Information Systems	1.0
22.904	Quality Control Methods 1	1.0
22.906	Advanced Purchasing	1.0
22.910	Supervisory Training for Operations Management	1.0
Elective A	— A course from Marketing Management Technology	1.0
Elective B	— A course from Operations Management Traffic and Distribution Option —	1.0
		15.0

Note:

Electives from Marketing Management Technology must be relevant to student's area of study.

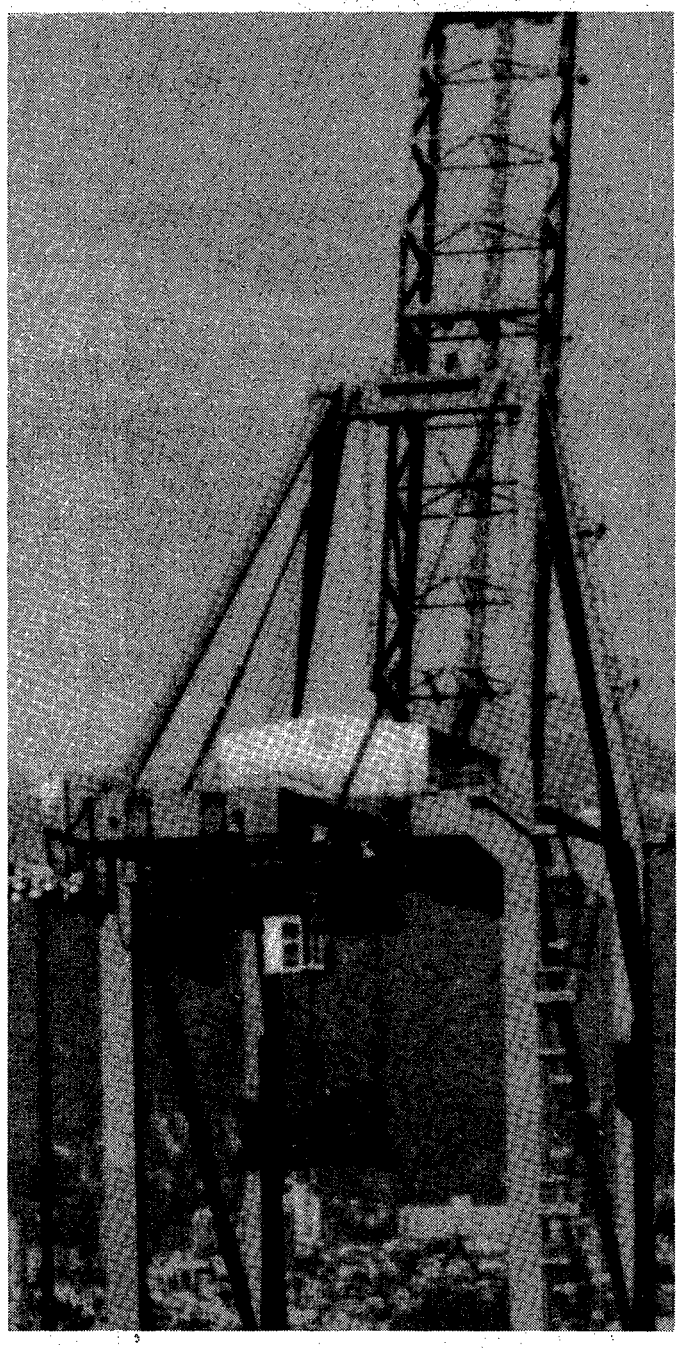
BUSINESS CERTIFICATE IN OPERATIONS MANAGEMENT — TRANSPORTATION AND DISTRIBUTION

First Level Courses		Unit
10.131	Management 1	1.0
14.050	Data Processing — Introduction, **or**	1.0
14.914	Introduction to Data Processing — Micro	1.0
22.915	Principles of Logistics	1.0
22.918	Transportation Regulation	1.0
22.921	Traffic and Transportation Management	1.5
Second Level Courses		Unit
10.232	Management 2	1.0
22.916	Principles of Exporting/Importing	1.5
22.917	Transportation Economics	1.0
22.919	Strategic Distribution Management	1.5
22.952	Systems and Procedures — Manual	1.0

Electives:

Choose 4.5 or 5 units from the following:

10.904	Supervisory Skills
16.904	Accounting for the Manager
20.914	General Marketing
22.901	Purchasing
22.902	Inventory Planning and Control
22.935	Statistics for Business and Industry
22.946	Facility Layout and Material Handling — Manufacturing



BUSINESS CERTIFICATE IN OPERATIONS MANAGEMENT — MANUFACTURING

This program is designed for people who are working in, or wish to work in, the manufacturing and/or warehousing functions of an organization. The course emphasizes the quantitative approach to decision making in this environment.

The program is suited to those who are or will be analysts or supervisors in such areas as inventory control, product cost estimating, standard setting, production planning and control, project administration, and technical sales. Courses are designed to assist graduates in selling methods to management and staff.

First Level Courses		Unit
22.941	Method Study — Manufacturing	1.0
22.943	Performance Measurement	1.0
22.944	Project Study — Manufacturing	0.5
14.050	Data Processing — Introduction, **or**	1.0
14.914	Introduction to Data Processing — Micro	1.0
22.902	Inventory Planning and Control	1.0
Second Level Courses		
22.100	Basic Mathematics of Finance	1.0
22.946	Facility Layout and Material Handling — Manufacturing	1.0
22.935	Statistics for Business and Industry	1.5
22.965	Operations Managment	1.5
22.956	Management Information Systems	1.0
22.953	Project Planning and Scheduling	1.0
22.910	Supervisory Training for Operations Management	1.0
	Electives — A	1.0
	— B	2.0
		15.5

Note:

Elective A — Computer Systems
— Computer Language

Elective B — 22.963 Mathematics for Management
— 22.904 Quality Control Methods 1
— 20.903 Marketing Research
— 16.904 Accounting for the Manager
— 22.901 Purchasing
— 10.221/321 Organizational Behavior 1 and 2
— 10.325/425 Labor Relations 1 and 2

BUSINESS CERTIFICATE IN OPERATIONS MANAGEMENT — OFFICE SYSTEMS

This program is designed for people who are working in, or wish to work in, the office systems environment. Courses are designed to give graduates the tools and techniques for analyzing systems in areas such as production and inventory planning, personnel, project management, data processing, and management information.

Other courses are designed to assist graduates to do feasibility and cost/benefit studies for methods improvement on equipment selection.

First Level Courses		Unit
22.948	Method Study — Office	1.0
22.952	Systems and Procedures — Manual	1.0
22.954	Project Study — Office	0.5
14.050	Data Processing — Introduction, **or**	1.0
14.914	Introduction to Data Processing — Micro	1.0
22.902	Inventory Planning and Control	1.0
Second Level Courses		
22.100	Basic Mathematics of Finance	1.0
22.935	Statistics for Business and Industry	1.5
22.947	Facility Layout and Material Handling — Office	1.0
16.904	Accounting for the Manager	1.0
22.956	Management Information Systems	1.0
22.953	Project Planning and Scheduling	1.0
22.910	Supervisory Training for Operations Management	1.0
	Electives — A	1.0
	— B	2.0
		15.0

Note:

Elective A — Computer Systems Course
— Computer Language Course

Effective B — 10.221/321 Organizational Behavior 1 and 2
— 10.325/425 Labor Relations 1 and 2
— 22.963 Mathematics for Management
— Marketing Course
— Any other course relevant to student's industry

CAPIC MATERIALS CONTROL CERTIFICATE

BCIT, in cooperation with CAPIC (Canadian Association for Production and Inventory Control) is proud to offer this certificate program designed to provide working adults with the training and education necessary to pursue a career in materials control.

This certificate program would be of interest to anyone involved in production and inventory control, buying or related professions.

Experienced production and inventory control professionals who want to increase their knowledge of the field, newcomers to the profession who want to acquire a solid foundation on which to build a career, and those choosing careers in such areas as Purchasing, Accounting, Production Supervision or Traffic who wish to acquire an overview of the field in order to interface with production and inventory management practitioners and each other would also benefit.

The requirements for this Certificate, which is issued by CAPIC are as follows:

Courses		Unit
PM300	Principles of Production and Inventory Management	—
PM100	Principles of Buying	—
PM200	Principles of Transportation	—
14.050	Data Processing Introduction, **or**	1.0
14.914	Data Processing Introduction — Micro	1.0
16.904	Accounting for the Manager	1.0

*Course number and detailed course description not available at time of printing. Please consult a Program Consultant for details.

Electives — any 2 of the following:

10.131	Management 1	1.0
22.904	Quality Control Methods 1	1.0
10.360	Business Law 1	1.0
22.946	Facility Layout and Material Handling	1.0
22.941	Method Study — Manufacturing	1.0

CAPIC (APICS) Seminars of at least one day duration

Specialized Business Services Technology

BUSINESS CERTIFICATE IN BUILDING SERVICES MANAGEMENT

BCIT in cooperation with the Canadian Building Servicing Association of British Columbia is pleased to present the following certificate program.

First Level Courses		Unit
10.904	Supervisory Skills	1.0
19.902	Maintenance and Control	1.0
19.905	Safety and Sanitation	1.0
Second Level Courses		
10.221	Organizational Behavior 1	1.0
10.321	Organizational Behavior 2	1.0
10.131	Management 1	1.0
10.232	Management 2	1.0
16.904	Accounting for the Manager	1.0
10.913	Selection Interviewing	1.0
10.325	Labor Relations 1	1.0
10.425	Labor Relations 2	1.0
22.901	Purchasing	1.0
10.907	Discussion Leadership	1.0
	Electives	2.0
		15.0

Electives and Substitutions

Electives may be selected, in consultation with a Program Consultant, from the courses listed in the various technologies that are considered appropriately related or from:

10.910	Personnel Management	1.0
10.918	Occupational Safety and Health	1.0
19.903	Interior Design — Basic	1.0
22.902	Inventory Planning and Control	1.0
22.948	Method Study — Office	1.0

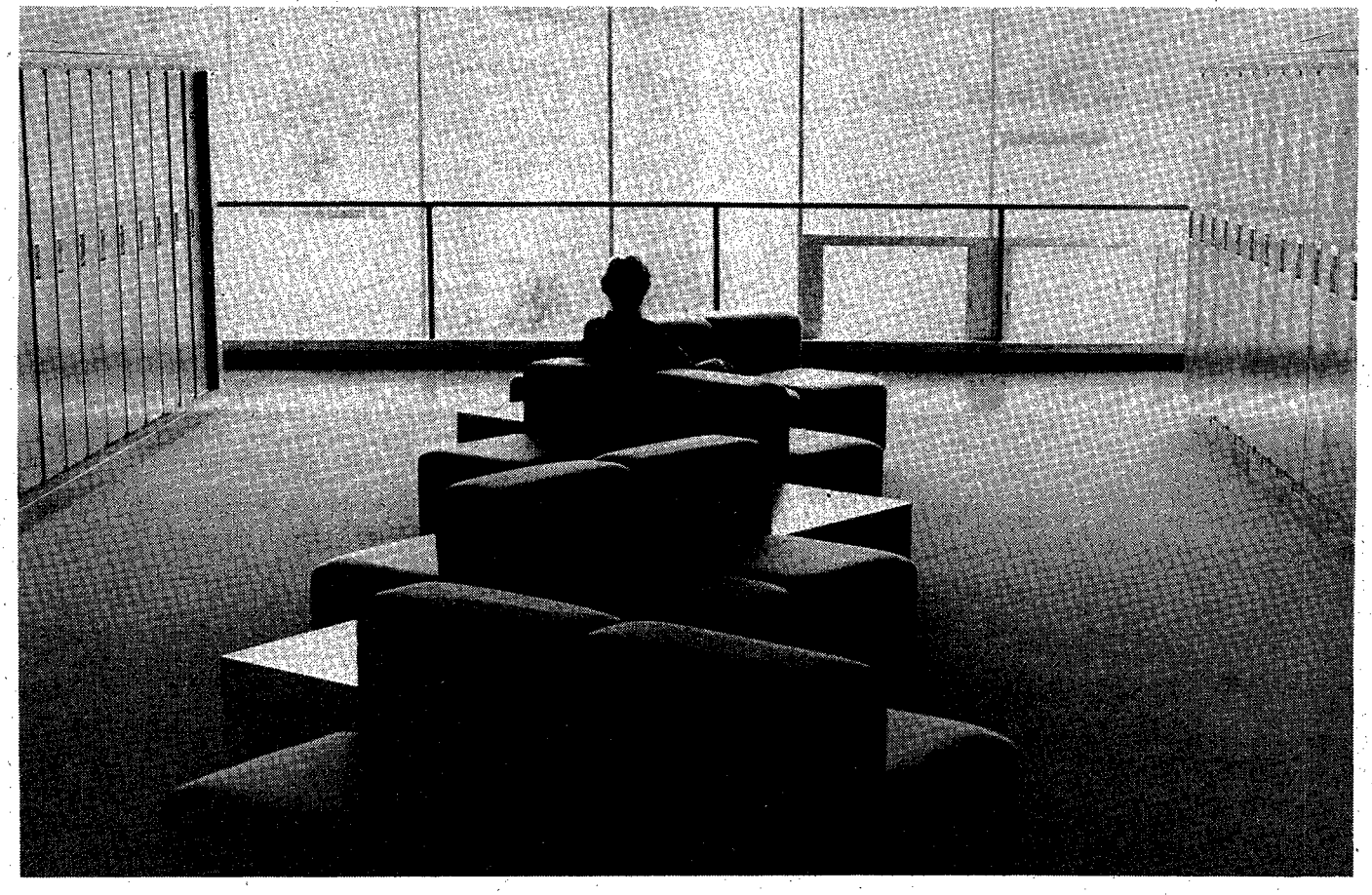
BUSINESS CERTIFICATE IN INTERIOR DESIGN

A program designed for those working in or seeking employment in areas such as kitchen outlets, furniture or drapery centres, wallpaper outlets, or retail sales.

Graduates may be suited to work as an assistant in a design office.

Suggested path of study:		Unit
19.903	Interior Design — Basic	1.0
19.924	History of Furniture	1.0
19.920	Colour and Lighting	1.0
40.901	Drafting and Design: Introduction to Architectural Drafting and Design	2.0
40.902	Drafting and Design: Architectural Drafting and Design Presentation	2.0
40.903	Drafting and Design: Fundamentals of Architectural Design	2.0
19.928	Graphic Presentation	1.0
19.930	Materials and Detailing	1.0
19.927	Space Planning 1 and 2	1.5
*20.914	General Marketing	1.0
*20.502	Public Speaking and Oral Communications	1.0
19.932	Directed Study Project	0.5

*20.914 and 20.502 can be taken when most convenient for student calendar.



Building Technology

ENGINEERING TECHNICIAN CERTIFICATE IN BUILDING TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms and Analytical Geometry	1.0	32.903 Trigonometry	1.0
Year 2					
40.901 Drafting and Design — Introduction	2.0	40.902 Drafting & Design — Drafting Presentation	2.0	40.903 Drafting & Design — Fundamentals of Design	2.0
Year 3					
40.512 Building Construction 1	2.0	40.612 Building Construction 1	3.0		
Elective	1.0				

SENIOR ENGINEERING CERTIFICATE IN BUILDING TECHNOLOGY

The following senior certificate program is obtainable over a three year period. Courses in the Engineering Technician Certificate in Building Technology are prerequisites for this program. The three year period is flexible.

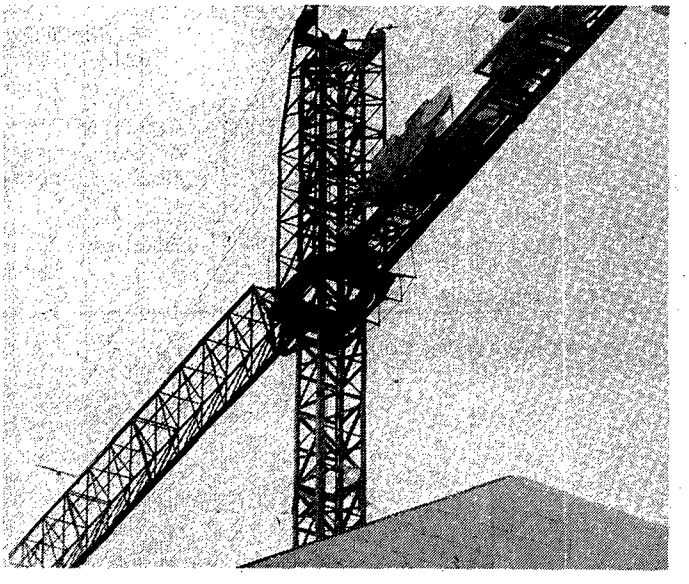
Students may amend this recommended program to suit their individual career needs.

All programs must be submitted to a Program Consultant for approval by the appropriate Technology Department.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 4					
40.522 Building Construction 2	1.0	40.622 Building Construction 2	1.5	31.910 Business & Technical Correspondence	1.0
40.914 Introduction to Construction Industry Procedures	1.0	40.915 National Building Code	1.0		
Year 5					
40.920 Estimating Construction Work 1	1.0	40.921 Estimating Construction Work 2	1.0	40.922 Estimating Construction Work 3	1.0
40.543 Electrical Systems Part 1	1.0	40.643 Electrical Systems Part 2	1.0	31.914 Technical Report Writing	1.0
Year 6					
40.954 Construction Administration	1.0	40.934 Construction Specifications	1.5		
40.974 Building Technology Computer Applications 1	1.0	Elective	1.0		

Electives and Substitutions

		Units
31.910	Business and Technical Correspondence	1.0
31.914	Technical Report Writing	1.0
40.522/622	Building Construction 2	2.5
40.543/643	Electrical Systems Part 1 and 2	2.0
40.914	Introduction to Construction Industry Procedures	1.0
40.915	National Building Code	1.0
40.920	Estimating Construction Work 1	1.0
40.921	Estimating Construction Work 2	1.0
40.922	Estimating Construction Work 3	1.0
40.934	Construction Specifications	1.5
40.954	Construction Administration	1.0
40.964	Project Management	1.5
40.974	Building Technology Computer Applications 1	1.0
42.103	Statics	1.0
42.205	Strength of Materials (Civil and Structural)	2.0
49.927	Plumbing System Design 1	1.0
49.937/938/939	Heating, Ventilating and Air Conditioning Systems 1, 2 & 3	3.0
51.931/932/933	Engineering Surveying 1, 2, & 3	3.0



Chemical Sciences Technology

ENGINEERING TECHNICIAN CERTIFICATE IN CHEMICAL LABORATORY TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
30.902 Chemical Principles 1	2.0	30.903 Chemical Principles 2	3.0	31.914 Technical Report Writing	1.0
32.901 Algebra 2	1.0				
Year 2					
32.902 Logarithms and Analytic Geometry	1.0	30.204 Chemical Laboratory Techniques	1.5		
		41.906 Glassblowing	1.0		
Year 3					
30.905 Organic Chemistry 1	2.0	30.906 Organic Chemistry 2	3.0		

SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN CHEMICAL LABORATORY TECHNOLOGY

The following senior certificate program (minimum 30 units) is attainable over three years. All courses shown for the Engineering Technician Certificate in Chemical Laboratory are also required for this higher level certificate. Fifteen units are required for this certificate.

Students may amend this recommended program to suit their individual career needs.

All programs must be submitted to a Program Consultant for approval by the appropriate Technology Department.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
30.510 Analytical Chemistry	2.0	30.610 Analytical Chemistry	3.0	31.910 Business and Technical Correspondence	1.0
32.507 Probability and Statistics 1	1.0	32.607 Probability and Statistics 1	1.0		
Year 2					
Electives	2.0	30.305 Chemical Instrumentation 1	1.0		
Year 3					
41.505 Mineral Analysis	2.0	41.413 Environmental Analytical Methods	2.0		
or					
41.311 Pollution Science	2.0				

ENGINEERING TECHNICIAN CERTIFICATE IN NONDESTRUCTIVE TESTING

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
41.502 Metallurgy	1.0	41.602 Metallurgy	1.0	32.901 Algebra 2	1.0
41.920 NDT Radiography	1.0	41.921 NDT Ultrasonics	1.0	41.922 NDT Eddy Current	1.0
Year 2					
41.923 NDT Magnetic Particle & Liquid Penetrant	1.0	41.924 NDT Strain Gauge & Acoustic Emission (combined)	1.0		
42.103 Statics	1.0	42.205 Strength of Materials	2.0		
Year 3					
31.914 Technical Report Writing	1.0	Electives	2.0		
49.543 Manufacture Process	1.0				

Non Destructive Testing Courses will be taught by C.S.N.D.T. personnel to C.S.N.D.T. and C.G.S.B. standards.

ENGINEERING TECHNICIAN CERTIFICATE IN METALLURGICAL TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms and Analytical Geometry	1.0	32.903 Trigonometry	1.0
41.502 Metallurgy 1	1.0	41.602 Metallurgy 1	1.0	Elective	1.0
Year 2					
33.508 Physics 1	1.0	33.608 Physics 1	1.0	Elective	1.0
Elective	1.0	Elective	1.0		
Year 3					
41.503 Metallurgy 2	1.0	41.603 Metallurgy 2	1.0		
Elective	1.0	Elective	1.0		

Suggested Electives

The following electives are applicable to Chemical Laboratory and Metallurgical certificates:

30.305	Chemical Instrumentation 1	1.0
30.405	Chemical Instrumentation 2	1.0
30.510/610	Analytical Chemistry	5.0
30.908	Lab Safety and Organization	1.0
32.507/607	Probability and Statistics 1	2.0
41.314/414	Mineral Processing	2.0
41.505/605	Mineral Analysis	4.0
41.506/606	Introduction to Chemical Engineering	2.0
41.906	Glassblowing	1.0
41.907	Air Pollution — Chemistry and Sampling Techniques	1.0
41.908	Water Pollution — Chemistry and Sampling Techniques	1.5
42.103	Statics	1.0
42.205	Strength of Materials	2.0
48.511/611	Process Instruments 1	2.0
48.512/612	Process Instruments 2	2.0
48.513/613	Process Instruments 3	2.0
49.900	Drafting Fundamentals	1.0

PAINT TECHNICIAN CERTIFICATE

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms and Analytical Geometry	1.0	32.903 Trigonometry	1.0
41.902 Paint Technology	1.5	31.910 Business and Technical Correspondence	1.0		
Year 2					
30.902 Chemical Principles 1	2.0	30.903 Chemical Principles 2	3.0	Elective	1.0
Year 3					
41.903 Paint Technology	0.5	30.913 Gas and Liquid	1.0		
Part 1 — Latex Paints	1.0	Chromatography	1.0		
Elective		31.914 Technical Report Writing			
		41.905 Paint Technology Part 3 — Modern Resins	0.5		

Suggested Electives

		Unit
30.510/610	Analytical Chemistry	5.0
30.905	Organic Chemistry 1	2.0
30.906	Organic Chemistry 2	3.0
30.908	Lab Safety and Organization	1.0
32.507/607	Probability and Statistics 1	2.0

Civil and Structural Technology

ENGINEERING TECHNICIAN CERTIFICATE IN CIVIL AND STRUCTURAL TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2 ☆	1.0	41.900 Drafting Fundamentals ☆	1.0	32.903 Trigonometry ☆	1.0
51.931 Engineering Surveying 1 ☆	1.0	51.932 Engineering Surveying 2 ☆	1.0	51.933 Engineering Surveying 3 ☆	1.0
Year 2					
42.103 Statics ☆	1.0	42.205 Strength of Materials ☆	2.0	31.902 Basic Business and Technical Communication ☆	1.0
33.508 Physics 1 ★	1.0	33.608 Physics 1 ★	1.0		
Year 3					
42.102 Hydrology ★	1.0	49.905 Drafting — Structural ★	1.0	32.931 Calculus 1 ★	2.0
42.104 Concrete Technology ★	1.0	31.914 Technical Report Writing ★	1.0		

SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN CIVIL AND STRUCTURAL TECHNOLOGY

The following senior certificate program (minimum 30 units) is attainable over three years. The three year period is flexible.

All courses shown for the Engineering Technician Certificate in Civil and Structural Technology are also required for this higher level certificate. Fifteen units are required for this certificate.

Students may amend this recommended program to suit their individual career needs.

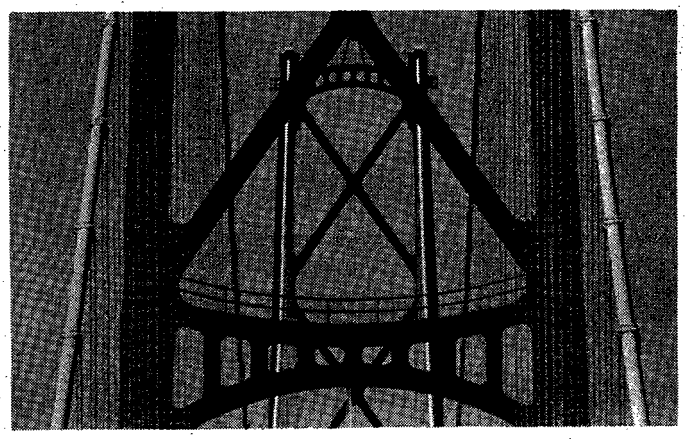
All programs must be submitted to a Program Consultant for approval by the appropriate Technology Department.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
*Year 4					
42.905 Soil Mechanics 1 ★	1.0	42.906 Soil Mechanics 2	1.5		
42.914 Roads and Streets or Approved elective ★	1.0	42.915 Highway Design and Construction	1.5		
*Year 5					
42.901 Structural Analysis ★	1.0	42.902 Structural Design in Steel and Timber	1.5		
31.910 Business & Tech. Corr. ★	1.0	42.903 Structural Design in Reinforced Concrete	1.5		
*Year 6					
42.908 Hydraulics ★	1.0	42.916 Municipal Services	1.5		
42.914 Roads and Streets or Approved elective ★	1.0	42.918 Subdivision Planning and Design	1.5		

Note: ☆Required for Engineering Technician Certificate.
★Required for Senior Engineering Technician Certificate.
• Year 4, 5, and 6 can be taken in any order.

It is essential to submit your proposed Engineering Certificate program to a Program Consultant for approval by the appropriate Technology Department.

NATIONAL DIPLOMA IN CIVIL AND STRUCTURAL TECHNOLOGY



A program can be arranged for students with a Senior Engineering Certificate who wish to complete the full National Diploma. Contact a Program Consultant for details.

Approved Electives

		Unit
42.607	Steel Detailing	1.0
42.912	Estimates and Contracts for Heavy Construction 1	1.0
42.913	Estimates and Contracts for Heavy Construction 2	1.0
42.917	Computer Methods of Structural Analysis	1.0
42.920	Introduction to Urban Traffic Engineering	1.0
42.921	Transportation Planning	1.0
42.922	Computer Applications in Civil Technology	1.0
49.908	Drafting — Civil	1.0

Electrical Technology

For entry into advanced level courses without the indicated prerequisite, students must receive permission from technology advisors during the week before classes begin. Pre-entry Mathematics 32.950 or recent Algebra 12, or equivalent, is required for these programs.

Courses are listed at the certificate level with which they are associated. All courses at one level should be completed before proceeding to the next level.

ENGINEERING TECHNICIAN CERTIFICATE IN ELECTRICAL TECHNOLOGY

Note: Programs started prior to September, 1983 as suggested in earlier calendar will still be recognized.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
43.103 Shop Practice 1	1.5	43.203 Shop Practice 2	1.0		
32.980 Math 1A		32.981 Math 1B		32.982 Math 1C	3.0
Year 2					
*43.501 Circuit Analysis 1		43.601 Circuit Analysis 1	2.0	*43.502/602 Circuit Analysis 2	2.5
32.526 Math 3		32.626 Math 3	2.0		
Year 3					
43.950 Intro. to Digital Logic	1.0	(**)			
43.504 Electronic Circuits 1	2.0	43.604 Electronic Circuits 1	2.0		

*Students with previous training may, with permission of the Department be allowed to take 43.529/629 Electric Circuits AC/DC.

**Another course applicable to the Senior Engineering Technology Certificate could be taken at this time and the credit applied later.

SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN ELECTRICAL TECHNOLOGY

Recommended common program for POWER, CONTROL ELECTRONICS and TELECOMMUNICATIONS ELECTRONICS — option areas.

Alternative programs may be designed to meet individual needs, such programs must first be submitted to a program consultant for approval by the Electrical Technology.

		Units
43.509/609	Measurements	2.0
31.910	Business and Technical Correspondence	1.0
31.914	Technical Report Writing	1.0
32.528/628	Math 4 for Electrical Technology	2.0
33.508/608	Physics 1	2.0
33.509/609	Physics 2	2.0
10.131/232	Management 1 and 2	2.0
43.506/606	Electronic Circuits 2	2.0
43.507/607	Digital Techniques 1	2.0
43.510/610	Industrial Electronics 1	2.0
43.532/632	Digital Techniques 2	2.0
		20.0

NATIONAL DIPLOMA IN ELECTRICAL TECHNOLOGY

Recommended programs for Power, Control Electronics and Telecommunications Electronics — option areas.

Changes may be made to suit individual needs, but such changes must first be submitted to a program consultant for approval by the Electrical Technology.

Power Option

		Units
43.505/605	Three Phase Power Circuits	2.0
43.511/611	Electrical Equipment 1	2.0
43.512/612	Industrial Systems 1	2.0
43.519/619	Electrical Equipment 2	2.0
43.520/620	Electrical Drafting	2.0
43.521/621	Power System Analysis	2.0
43.523/623	Industrial Systems 2	2.0
32.530/630	Laplace Transform Methods for Electrical Technology	2.0
Suitable approved electives such as:		
43.530/630, 43.522/622, 43.933		3.0
		20.0
	Total	55.0

Control Electronics Option

		Units
32.530/630	Laplace Transform Methods for Electrical Technology	2.0
43.414	Industrial Audio Systems	1.0
43.508/608	Telecommunication Circuits	2.0
43.515/615	Electronic Circuits 3	2.0
43.518/618	Circuit Design and Fabrication	2.0
43.535/635	Printed Circuit Board Design	2.0
43.933	Microcomputers and Digital Systems — Module 1	1.5
Suitable approved electives such as:		
43.505/605, 43.511/611, 43.519/619, 43.530/630		7.5
		20.0
	Total	55.0

Telecommunication Electronics Option 3

		Units
32.530/630	Laplace Transform Methods for Electrical Technology	2.0
43.508/608	Telecommunication Circuits	2.0
43.513/613	Microwave Principles and Devices	2.0
43.515/615	Electronic Circuits 3	2.0
43.933	Microcomputers and Digital Systems — Module 1	1.5
43.517/617	Telecommunication Systems	2.0
43.518/618	Circuit Design and Fabrication	2.0
43.535/635	Printed Circuit Board Design	2.0
Suitable approved electives		4.5
		20.0
	Total	55.0

Forest Resources Technology

ENGINEERING TECHNICIAN CERTIFICATE IN FOREST RESOURCES TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	45.903 Forest Land Management	1.5	32.903 Trigonometry	1.0
45.501 Forest Measurements 1	1.0	45.601 Forest Measurements 1	1.0		
Year 2					
31.910 Business and Technical Correspondence	1.0	31.914 Technical Report Writing	1.0		
Elective	1.0	45.226 Ecology	1.5		
Year 3					
45.120 Plant Identification	1.0	45.220 Introduction to Soils	1.5		
Elective	1.0	Elective	1.5		

Suggestive Electives

		Units			Units
45.103	Wood Utilization	1.0	51.931/932/933	Engineering Surveying 1, 2 and 3	3.0
45.904	Principles and Practices in Wildlife Management	1.0			

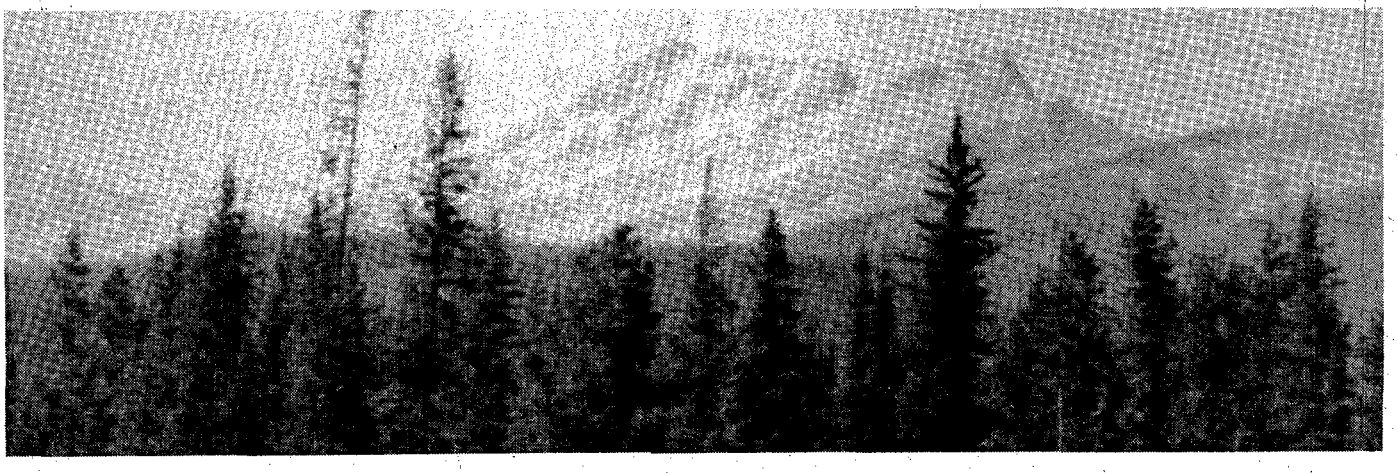
ENGINEERING TECHNICIAN CERTIFICATE IN FISH, WILDLIFE AND RECREATION

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms & Analytic Geometry	1.0	32.903 Trigonometry	1.0
45.120 Plant Identification	1.0	45.226 Ecology	1.5	Elective	1.0
Year 2					
31.910 Business & Technical Correspondence	1.0	31.914 Technical Report Writing	1.0		
45.910 Wildland Recreation & Park Management	1.0				
Year 3					
45.904 Principles & Practices in Wildlife Management	1.0	45.911 B.C. Fish and Fisheries	1.0		
Elective	1.0	Elective	1.0		

Suggested Electives

		Units
10.904	Supervisory Skills	1.0
10.905	Managerial Styles	1.0
30.902	Chemical Principles 1	2.0
45.903	Forest Land Management	1.5

Credits obtained in part-time courses are not automatically granted towards full-time courses, and students are advised to seek consultation with the Forest Resources Technology if they are planning to attend the full-time program. Students should also be aware of the fact that the National Diploma is not currently available through the part-time program.



Instrumentation Technology

For entry into advanced level courses without the indicated prerequisite, students must receive permission from technology advisors during the week before classes begin. Pre-entry Mathematics 32.950 or recent Algebra 12, or equivalent, is required for these programs.

Courses are listed at the certificate level with which they are associated. All courses at one level should be completed before proceeding to the next level.

ENGINEERING TECHNICIAN CERTIFICATE IN INSTRUMENTATION TECHNOLOGY

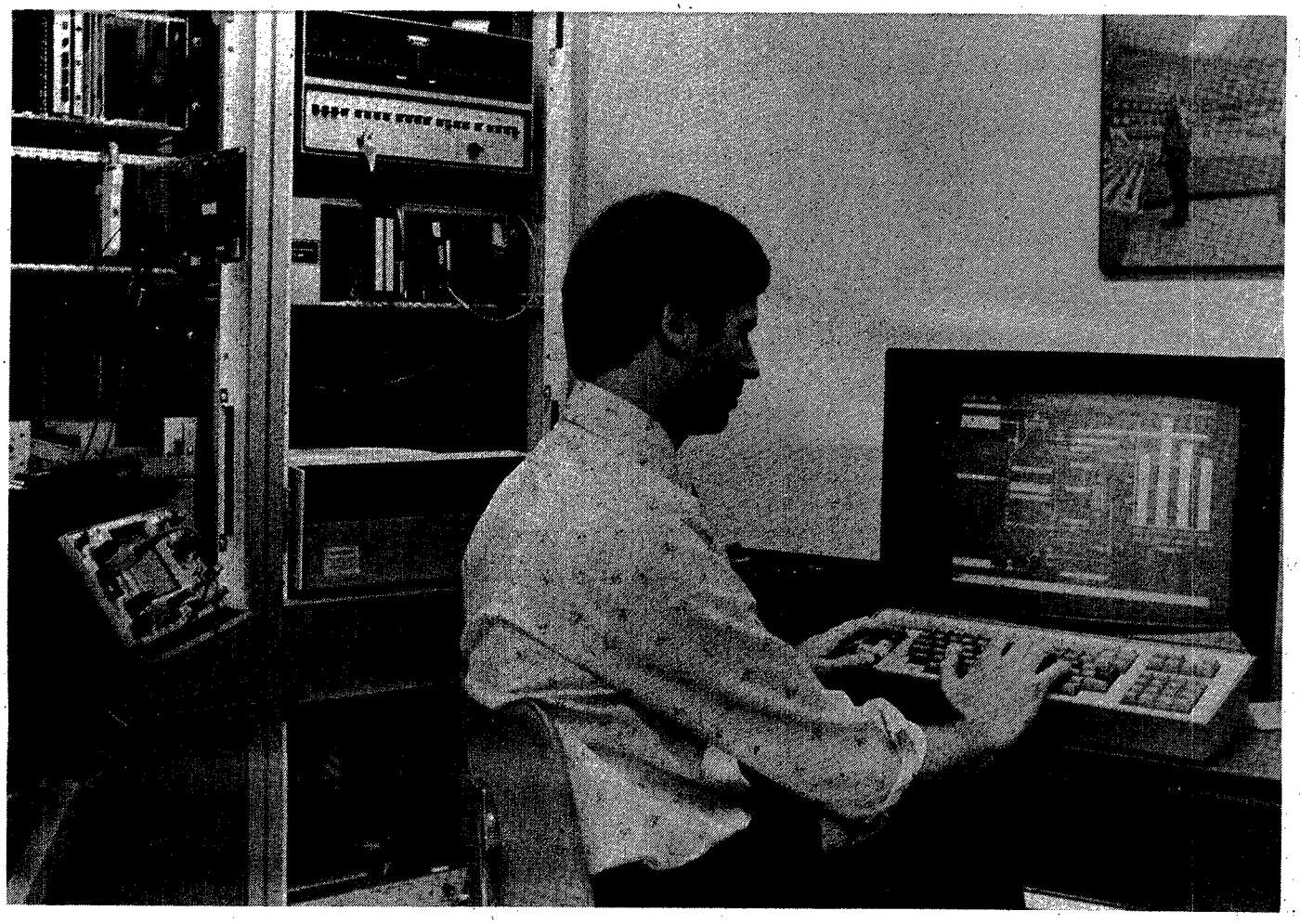
For a basic certificate in Instrumentation Technology, refer to the program outlined on page 23 for the Engineering Technician Certificate in Electrical Technology. This certificate now replaces the previously advertised basic certificate for Instrumentation. However, programs that were started prior to September, 1983, as suggested in earlier calendars, will still be recognized.

SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN INSTRUMENTATION TECHNOLOGY

31.910	Business and Technical Correspondence	1.0
31.914	Technical Report Writing	1.0
33.508/608	Physics 1	2.0
33.509/609	Physics 2	2.0
43.506/606	Electronic Circuits 2	2.0
43.507/607	Digital Techniques 1	2.0
48.511/611	Process Instruments 1	2.0
48.512/612	Process Instruments 2	2.0
48.517/617	Process Control 1	2.0
32.528/628	Mathematics 4 for Electrical Tech.	2.0
43.509/609	Measurements	2.0
		20.0

NATIONAL DIPLOMA IN INSTRUMENTATION TECHNOLOGY

10.904	Supervisory Skills	1.0
30.902/903	Chemical Principles 1 and 2	5.0
43.532/632	Digital Techniques 2	2.0
43.933	Microcomputers and Digital Systems	1.5
48.513/613	Process Instruments 3	2.0
48.518/618	Process Control 2	2.0
48.912	Measurement Electronics	1.0
48.932	Electronic Signal Conditioning Methods in Instrumentation	1.0
48.933	Electronic Controllers	1.0
43.540/640	Process Computer Systems	2.0
	Approved Electives	1.5
		20.0



Mechanical Technology

ENGINEERING TECHNICIAN CERTIFICATE IN MECHANICAL TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms & Analytic Geometry	1.0	32.903 Trigonometry	1.0
41.502 Metallurgy 1	1.0	41.602 Metallurgy 1	1.0	31.910 Business and Technical Correspondence	1.0
Year 2					
49.915 Applied Mechanics 1	1.0	49.916 Applied Mechanics 2	1.0	49.917 Applied Mechanics 3	1.0
49.918 Mechanics of Materials 1	1.0	49.919 Mechanics of Materials 2	1.0	49.900 Drafting Fundamentals	1.0
or		**or**			
49.921 Applied Heat 1	1.0	49.922 Applied Heat 2	1.0		
Year 3					
49.543 Manufacturing Processes 1	1.0	49.643 Manufacturing Processes 1	1.5		
49.903 Mechanical Drafting 1	1.0	49.907 Mechanical Drafting 2	1.0		

SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN MECHANICAL TECHNOLOGY

The following Senior certificate program is obtainable over three years. All courses shown for the Engineering Technician Certificate in Mechanical Technology are also required for this higher level certificate.

Students may amend this recommended program to suit their individual career needs.

All programs **must** be submitted to a Program Consultant for approval by the appropriate Technology Department.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 4					
49.542 Fluid Power 1	1.0	49.642 Fluid Power 2	1.5	49.909 Mechanical Drafting 3	1.0
49.937 Heating, Ventilating and Air Conditioning 1	1.0	49.938 Heating, Ventilating and Air Conditioning 2	1.0	49.939 Heating, Ventilating and Air Conditioning 3	1.0
Year 5					
32.931 Calculus 1	2.0	32.932 Calculus 2	2.0	31.914 Technical Report Writing	1.0
Year 6					
49.932 Engineering Economics	1.0	Mechanical Elective	1.0		
33.509 Physics 2	1.0	33.609 Physics 2	1.0		

NATIONAL DIPLOMA IN MECHANICAL TECHNOLOGY

Students should complete the Senior Engineering Technician Certificate before advancing to the National Diploma Program.

The following National Diploma Program is attainable over three years. A minimum of fifteen units is required in this final phase of the diploma. Programs must be approved in advance.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 7					
Mechanical Technology Electives	2.0	Mechanical Technology Electives	1.0	Approved Electives	2.0
		Approved Elective	1.0		
Year 8					
49.531 Elements of Machine Design	1.0	49.631 Elements of Machine Design	1.5		
Mechanical Elective	1.0	Mechanical Elective	1.0		
Year 9					
49.585 Production Engineering Management	1.0	49.685 Production Engineering Management	1.5		
Elective	1.0	Elective	1.0		

Suggested Electives

32.935	Microcomputers — BASIC 1	1.0	49.924	Pumps and Fluid Systems	1.0
32.937	Microcomputers — CAD 1	1.0	49.925	Fans and Ductwork Systems	1.0
32.957	Statistical Quality Control with Industrial Applications	1.0	49.927	Plumbing Systems Design 1	1.0
			49.930	Metrology	1.5
49.531/631	Elements of Machine Design	2.5	49.931	Manufacturing Processes 3	1.5
49.545/645	Tool Design	2.0	49.935/936	Automatic Sprinkler Systems Design 1 and 2	2.5
49.585/685	Production Engineering Management	2.5			
49.906	Descriptive Geometry	1.0	49.937/938/939	Heating, Ventilating and Air Conditioning 1, 2 and 3	3.0
49.919	Mechanics of Materials 2	1.0			
49.922	Applied Heat 2	1.0	49.950	Computer Numerical Control	2.0

ENGINEERING TECHNICIAN CERTIFICATE IN DRAFTING

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.903 Trigonometry	1.0	32.931 Calculus 1	2.0
49.900 Drafting Fundamentals	1.0	49.906 Descriptive Geometry	1.0	31.910 Business and Technical Correspondence	1.0
Year 2					
49.903 Mechanical Drafting 1	1.0	49.907 Mechanical Drafting 2	1.0	49.909 Mechanical Drafting 3	1.0
49.915 Applied Mechanics 1	1.0	49.916 Applied Mechanics 2	1.0	49.917 Applied Mechanics 3	1.0
Year 3					
Approved Electives	2.0				

Suggested Electives

		Units			Units
31.914	Technical Report Writing	1.0	43.520/620	Electrical Drafting	2.0
32.935	Microcomputer — BASIC 1	1.0	49.905	Drafting — Structural	1.0
32.937	Microcomputers — CAD 1	1.0	49.908	Drafting — Civil	1.0
40.512/612	Building Construction 1	5.0	51.507/607	Survey Drafting	2.0
40.522/622	Building Construction 2	2.5	53.903	Grading and Drainage Plan Production	1.0
41.502/602	Metallurgy 1	2.0	53.904	Landscape Structurals	1.0

ENGINEERING TECHNICIAN CERTIFICATE IN ENERGY TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.903 Trigonometry	1.0	32.931 Calculus 1	2.0
49.915 Applied Mechanics 1	1.0	49.900 Drafting Fundamentals	1.0		
Year 2					
33.508 Physics 1	1.0	33.608 Physics 1	1.0		
49.921 Applied Heat 1	1.0	49.922 Applied Heat 2	1.0		
Year 3					
49.923 Mechanics of Fluids	1.5	49.687 Solar Engineering — Practical Design and Economics	1.5		
49.587 Solar Engineering — Practical Design and Economics	1.0				
Year 4					
49.937 Heating, Ventilating and Air Conditioning 1	1.0	49.938 Heating, Ventilating and Air Conditioning 2	1.0	49.939 Heating, Ventilating and Air Conditioning 3	1.0
49.589 Passive Solar Design	1.0	49.689 Passive Solar Design	1.0		

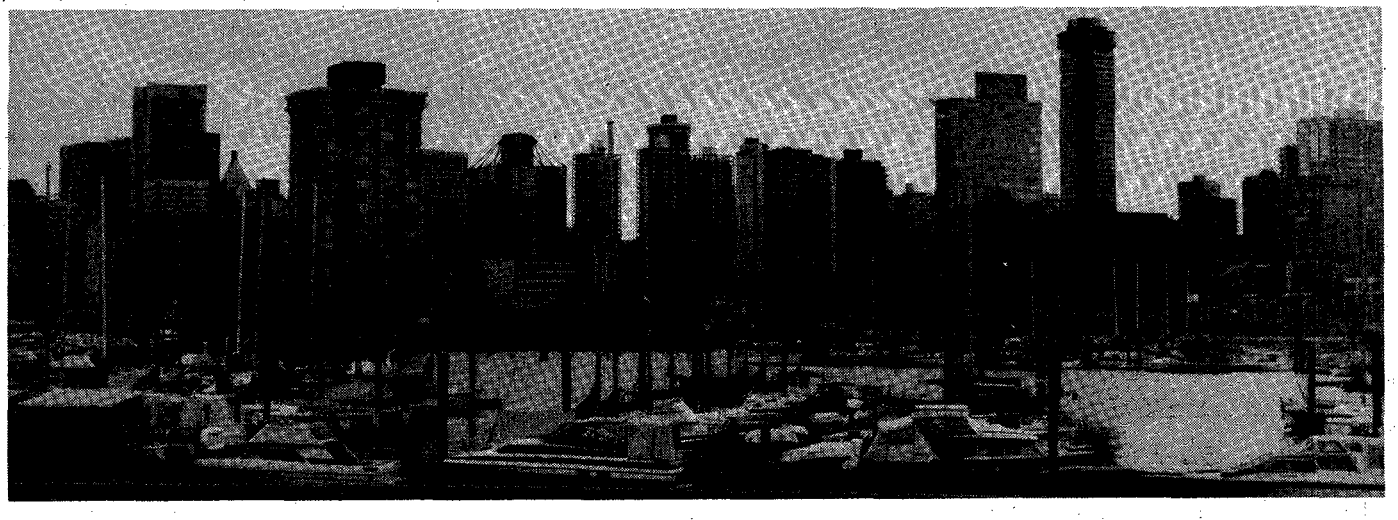
Suggested Electives

31.914	Technical Report Writing	1.0
33.509/609	Physics 2	2.0
40.543/643	Electrical 5	2.0
40.915	National Building Code	1.0

ENGINEERING TECHNICIAN CERTIFICATE IN NAVAL ARCHITECTURE

A three year, 18 unit program in basic applied Naval Architecture with particular reference to small ships and boats operated or built in British Columbia and related to the required knowledge and skill of a ship draftsman.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithm and Analytic Geometry	1.0	32.931 Calculus 1	2.0
49.900 Drafting Fundamentals	1.0	32.903 Trigonometry	1.0		
		49.906 Descriptive Geometry	1.0		
Year 2					
49.915 Applied Mechanics 1	1.0	49.916 Applied Mechanics 2	1.0	49.917 Applied Mechanics 3	1.0
49.951 Naval Architecture Fundamentals 1	1.0	49.952 Naval Architecture Fundamentals 2	1.0	32.935 Basic 1 for Engineering Technology	1.0
Year 3					
49.918 Mechanics of Materials 1	1.0	49.919 Mechanics of Materials 2	1.0	49.955 Applied Naval Architecture 3	1.0
49.953 Applied Naval Architecture 1	1.0	49.954 Applied Naval Architecture 2	1.0		



SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN NAVAL ARCHITECTURE

Successful completion of the Senior Certificate enables the student, under direction of a Naval Architect to develop total design calculations and working drawings of typical vessels based on previous reference designs. This includes rudders, steering systems, support structures, propelling and auxiliary machinery, and welds and moulds; incorporating alterations in design parameters subject to economy and Ministry of Transport regulations.

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 4					
33.509 Physics 2	1.0	33.609 Physics 2	1.0	31.914 Technical Report Writing	1.0
49.956 Applied Naval Architecture 4	1.0	49.957 Applied Naval Architecture 5	1.0	49.958 Applied Naval Architecture	1.0
Year 5					
49.921 Applied Heat 1	1.0	49.923 Mechanics of Fluids	1.5	49.961 Naval Architecture Theory 3	1.0
49.959 Naval Architecture Theory 1	1.0	49.960 Naval Architecture Theory 2	1.0		
Year 6					
41.502 Metallurgy 1	1.0	41.602 Metallurgy 1	1.0	Welding Design (CWB Supervisors Courses)	
49.962 Naval Architecture Ship Design 1	1.0	49.963 Naval Architecture Ship Design 2	1.0	49.964 Naval Architecture Ship Design 3	1.0

Natural Gas and Petroleum Technology

ENGINEERING TECHNICIAN CERTIFICATE IN NATURAL GAS AND PETROLEUM TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms and Analytic Geometry	1.0	32.903 Trigonometry	1.0
47.521 Distribution and Utilization — Gas	1.0	47.621 Distribution and Utilization — Gas	1.0	Elective	1.0
Year 2					
30.902 Chemical Principles 1	2.0	30.903 Chemical Principles 2	3.0		
47.501 Gas and Oil Production and Transmission	1.0	47.601 Gas and Oil Production and Transmission	1.0		
Year 3					
Elective	1.0	Elective	1.0		

Suggested Electives

		Units			Units
31.910	Business and Technical Correspondence	1.0	48.511/611	Process Instruments 1	2.0
31.914	Technical Report Writing	1.0	48.512/612	Process Instruments 2	2.0
33.508/608	Physics 1	2.0	51.931/932/933	Engineering Surveying 1, 2 & 3	3.0
41.502/602	Metallurgy 1	2.0			

Landscape Technology

ENGINEERING TECHNICIAN CERTIFICATE IN LANDSCAPE TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
32.901 Algebra 2	1.0	32.902 Logarithms & Analytic Geometry	1.0	32.903 Trigonometry	1.0
49.900 Drafting Fundamentals	1.0	49.905 Drafting — Structural	1.0		
Year 2					
53.901 Structural Material	1.0	53.902 Soil Improvement	1.5	53.911 Plant Introduction	1.0
53.903 Grading and Drainage Plan Production	1.0	53.906 Basic Horticulture	1.5		
Year 3					
53.904 Landscape Structurals	1.0	53.910 Planting Plan	1.5		
53.907 Plant Material Study	1.0	Elective	0.5		

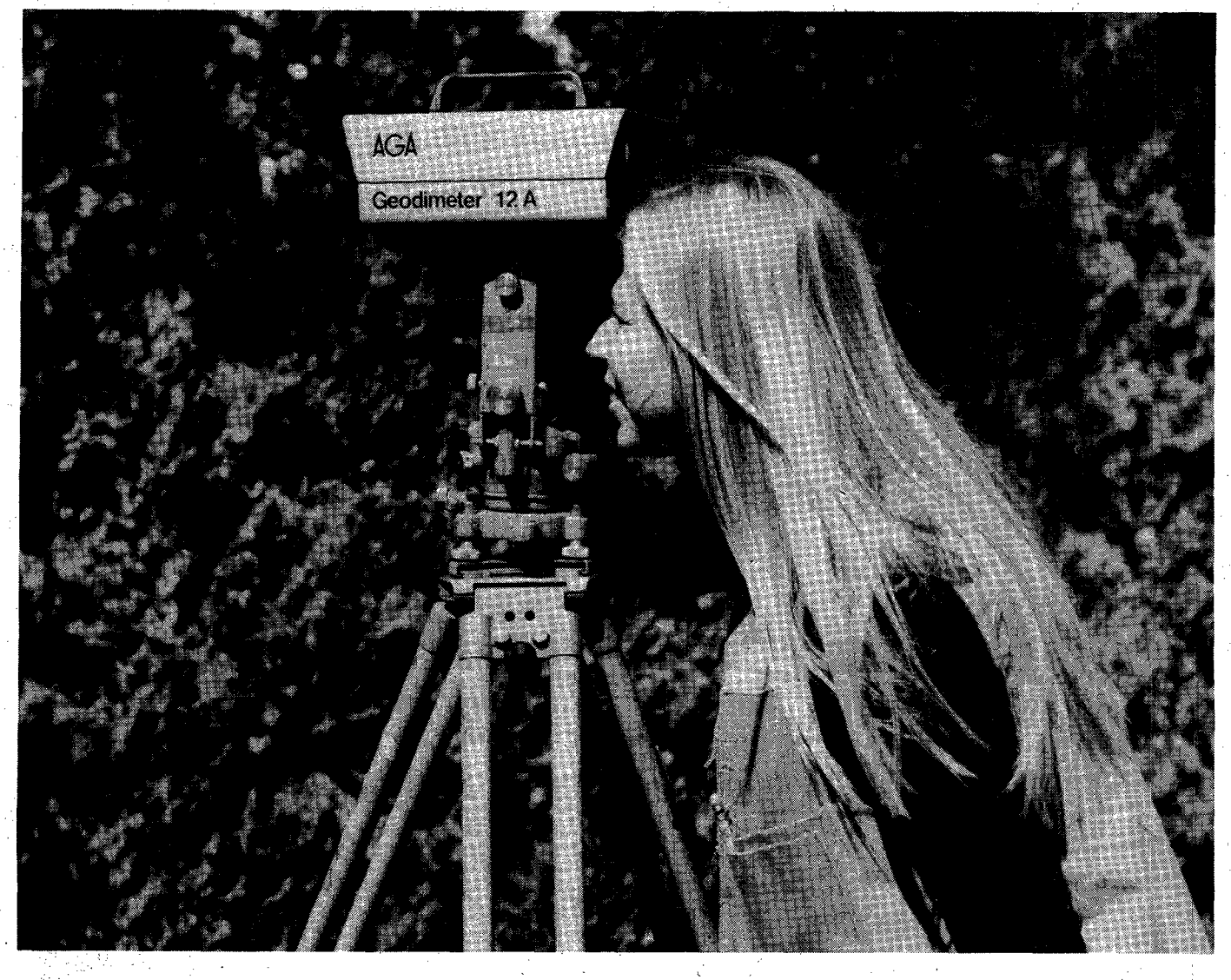
Electives and Substitutions

		Units			Units
30.902	Chemical Principles 1	2.0	44.918	Pesticides for Retailers and Landscape Applicators	0.5
31.914	Technical Report Writing	1.0			
35.508/608	Physics 1	2.0	53.905	Park and Recreation	1.5
44.909	Landscape Irrigation	1.0	53.908	Management	1.0
44.910	Sports Turfgrass Management 1	1.0	53.909	Cost Estimation	1.5

Surveying Technology

ENGINEERING TECHNICIAN CERTIFICATE IN SURVEYING TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
51.923 Field Survey 1A	1.0	51.924 Field Survey 1B	1.0	51.925 Field Survey 1C	1.0
51.934 Survey Computations 1A	1.0	51.935 Survey Computations 1B	1.0	51.936 Survey Computations 1C	1.0
				32.901 Algebra 2	1.0
Year 2					
51.926 Field Survey 2A	1.0	51.927 Field Survey 2B	1.0	51.928 Field Survey 2C	1.0
51.909 Calculators (Programmable)	1.0	32.935 BASIC 1 — An Introduction to Microcomputers	1.0	32.902 Trigonometry	1.0
Year 3					
51.916 Survey Computations 2	1.0	51.917 Survey Computations 3	1.0	51.918 Survey Computations 4	1.0



SENIOR ENGINEERING TECHNICIAN CERTIFICATE IN SURVEYING TECHNOLOGY

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 4					
51.921 Geodesy	1.0	51.922 Map Projections	1.0	51.919 Method of Least Squares	1.0
33.508 Physics 1		33.608 Physics 1	2.0	49.900 Drafting Fundamentals	1.0
Year 5					
51.507 Survey Drafting		51.607 Survey Drafting	2.0	32.931 Calculus 1	2.0
Survey Elective	1.0	Survey Elective	1.0		
Year 6					
51.506 Photo Interpretation and Remote Sensing		51.606 Photo Interpretation and Remote Sensing	2.5		
Approved Elective	1.0				

Suggested Electives

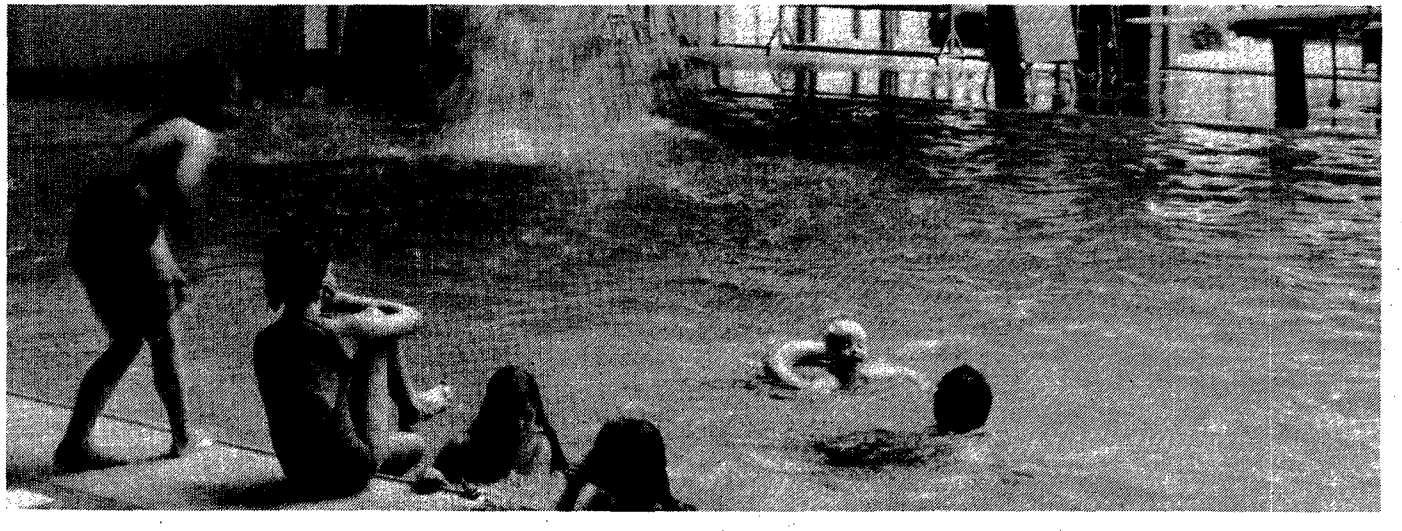
		Units			Units
31.910	Business and Technical Correspondence	1.0	50.101/201	Geology	2.0
31.914	Technical Report Writing	1.0	51.504/604	Astronomy	2.0
32.902	Logarithms and Analytic Geometry	1.0	51.952/953/954	Photogrammetry 1A, 1B & 1C	2.0
33.508/608	Physics 1	2.0			
42.102	Hydrology	1.0	51.506/606	Photo Interpretation and Remote Sensing	2.5
45.120	Plant Identification	1.0	51.507/607	Survey Drafting	2.0
45.220	Introduction to Soils	1.0	51.909	Calculators (Programmable)	1.0
49.900	Drafting Fundamentals	1.0	51.910	Land Use Control	1.0
49.903	Mechanical Drafting 1	1.5			

Recreation Facilities Management

ENGINEERING TECHNICIAN CERTIFICATE IN RECREATION FACILITIES MANAGEMENT

Term 1 (September)	Units	Term 2 (January)	Units	Term 3 (April)	Units
Year 1					
49.937 Heating, Ventilating and Air Conditioning 1	1.0	49.900 Drafting Fundamentals	1.0	14.050 Data Processing — Introduction	1.0
33.508 Physics 1	1.0	33.608 Physics 1	1.0		
Year 2					
10.325 Labor Relations 1	1.0	10.425 Labor Relations 2	1.0	54.912 Recreation Facilities Management 3 — Program	1.0
54.910 Recreation Facilities Management 1 — Administration	1.0	54.911 Recreation Facilities Management 2 — Maintenance	1.0		
Year 3					
20.903 Marketing Research	1.0	31.910 Business and Technical Correspondence	1.0		
49.927 Plumbing Systems Design 1	1.0	54.901 Swimming Pool Operation Maintenance and Chemistry	1.0		

Electives: 31.902 Basic Business and Technical Communication — 1.0
PVI Physical Plant Equipment and Maintenance



Combined Business and Engineering Certificate Programs

The British Columbia Institute of Technology will award combined Business and Engineering Certificates to students who successfully complete 15 units of study drawn from both Divisions. The object of these certificates is to provide a course of studies with a general business base and the flexibility to include engineering courses to suit the interest of each individual.

INDUSTRIAL MANAGEMENT CERTIFICATE

		Units
10.131/232	Management 1 and 2	2.0
22.948	Method Study — Office **or**	1.0
22.941	Method Study — Manufacturing	1.0
22.943	Performance Measurement	1.0
22.954	Project Study — Office **or**	0.5
22.944	Project Study — Manufacturing	0.5
31.910	Business and Technical Correspondence*	1.0
31.912/914	Business or Technical Report Writing*	1.0
	Pre-Approved Business Electives	2.5
	Pre-Approved Engineering Electives	6.0
	Total	15.0

TECHNICAL MARKETING CERTIFICATE

		Units
20.180/280	Marketing 1 and 2	2.5
20.275	Professional Sales	1.0
31.910	Business and Technical Correspondence*	1.0
31.912/914	Business or Technical Report Writing*	1.0
	Pre-Approved Business Electives	2.5
	Pre-Approved Engineering Electives	7.0
	Total	15.0

The electives will be drawn from a Business or Engineering Technology and must form an acceptable program. In some cases it may be necessary to devote two or three units to technical mathematics. Students must have a complete program approved in advance.

*31.902 Basic Introduction to Business and Technical Communication plus one additional Business elective can, upon request be substituted for 31.910 Business and Technical Correspondence and 31.912/914 Business or Technical Report Writing.

Health Care Management

There are two levels of Health Care Management Programs (Level 1 and Level 2) leading to two separate certificates. These are supplemented by a number of additional professional development courses in the Health Care Management field.

The programs are designed to help managers and would-be managers sharpen their management skills and acquire new skills appropriate to their particular needs while broadening their general perspective of the health care field.

Applicants should be employed in a health care agency or be graduates from a health paraprofessional, professional or technological program.

Applicants for either of the Health Care Certificate Programs must have their proposed program of courses and any revisions to an existing program of courses approved by the program coordinator. These requests should be made in person and an interview can be scheduled by contacting the Health Associate Co-ordinator at the BCIT Burnaby Campus.

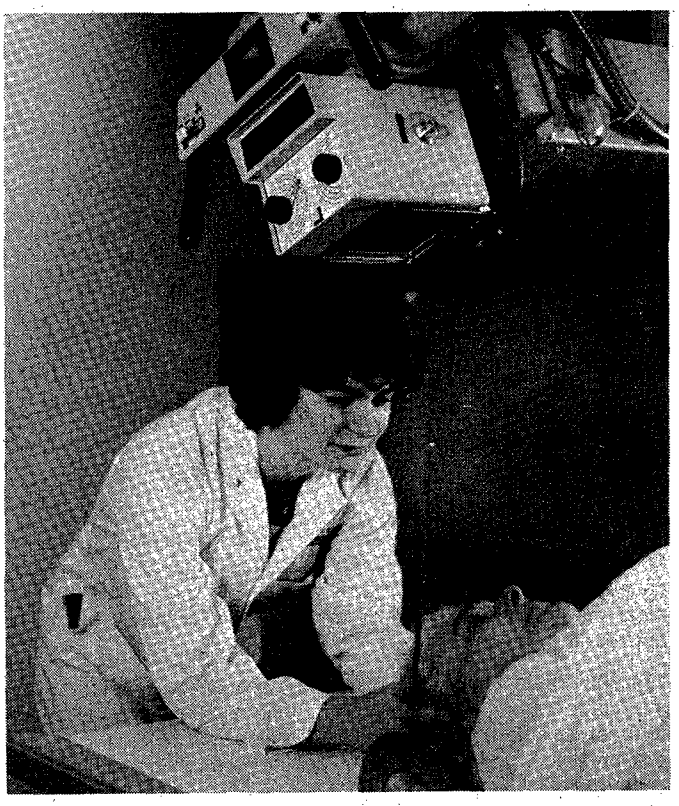
Transfer credits may be awarded for academic work completed at other recognized institutions according to the policy established for Health Continuing Education. For further information see Academic Information in this calendar or contact the Health Care Management Program Consultant at BCIT, Burnaby.

Applicants not wishing to complete the entire program may enrol in any of the mandatory or elective courses.

HEALTH CARE MANAGEMENT CERTIFICATE PROGRAM LEVEL 1

This eight-unit program, offered in cooperation with the British Columbia Health Association (B.C.H.A.), is designed for first level managers. It provides information and practise in the application of management principles in health care situations.

It is appropriate for department heads, assistant head nurses, head nurses, and anyone anticipating a management position.



Participants must complete 5 units of the mandatory core courses plus 3 units of the electives to qualify for the Level 1 Certificate.

The courses are offered in a variety of time frames as outlined in the Course Schedule which is available on request.

Mandatory Courses

		Units
87.510	Health Organizational Behavior	1.0
87.511	Health Care Principles of Management	1.0
87.512	Operations Management in Health	0.5
87.513	Budgeting in Health Care	0.5
87.514	Health Care Systems	0.5
87.515	Human Resource Management	1.0
87.516	Health Labor Relations	0.5

Recommended Discipline Electives

ADMINISTRATIVE (GENERAL) MANAGEMENT

10.905	Managerial Styles
10.907	Discussion Leadership
10.908	Problem Solving and Decision Making
10.913	Selection Interviewing
87.500	Health Care Supervisory Skills

EDUCATION (TRAINING)

10.905	Training Techniques
10.951	Instruction and Facilitation
10.952	Course Design
97.901	Video Production for Educational Programming

FINANCIAL MANAGEMENT

10.135	Economics 1
10.908	Problem Solving and Decision Making
14.050	Data Processing — Introduction
16.904	Accounting for the Manager

PERSONNEL

10.901	Salary Administration
10.910	Personnel Management
10.913	Selection Interviewing
10.914	Manpower Planning

SYSTEMS

14.050	Data Processing — Introduction
14.505	Computer Systems — Introduction
22.902	Inventory Planning and Control
22.948	Methods Study — Office
22.956	Management Information Systems

Recommended Pre-entry Courses

It is assumed that participants have well-developed written and verbal communication skills. For those wishing to upgrade these skills the following courses are recommended.

20.502	Public Speaking and Oral Communication
31.905	Reading Improvement and Study Skills
31.925	Writing for Health Professionals

HEALTH CARE MANAGEMENT CERTIFICATE PROGRAM LEVEL II

This 15 unit program is designed for middle managers in health care agencies and in long term care agencies. The program builds upon the Health Care Management Certificate Program (Level 1) by requiring participants to complete an additional 7 units of course work.

Participants may elect one of two paths. The first consists of administration courses only; the second consists of administration courses and post-basic courses in the participant's own health science specialty. This program is currently under review.

HEALTH CARE MANAGEMENT PROFESSIONAL DEVELOPMENT

Throughout the year courses are featured for graduates from the Health Care Management Certificate program, the Canadian Hospital Association's correspondence courses in management, other management courses, and for those people who simply wish more information about a particular health care topic. Included in these are:

87.904	Assertion with Certainty for Health Care Supervisors and Managers
87.909	Selection Interviewing for Health Care Supervisors
87.911	Health Labor Relations*
87.912	Health Labor Relations for Health Technologists*
87.913	Health Labor Relations for Nurses*
87.914	Performance Appraisal for Health Care Supervisors
87.915	Power in Health Care Organizations: A Guide to Smooth Sailing in Choppy Waters
87.918	Management Information Systems for Long Term Care Administrators
87.919	Layoff and Dismissal in Health Care Organizations
87.920	Employment Interviewing for Health Care Managers
87.921	Quality Circles: A Change of Perspective for Health Care Managers
87.922	Administrative Cost Control for Long Term Care Administrators
87.923	Food Cost Control

*These courses may be offered in any community in B.C. Fees will vary depending on the local arrangements and the location. For further information contact Health Continuing Education at the Burnaby Campus.

HEALTH TECHNOLOGIES

There are two levels of health technology courses, update and advanced. The update courses enable technologists to keep up with the latest developments in their field; the advanced courses examine specific subjects in depth.

For Medical Laboratory, advanced courses can be used as preparation for the Advanced Registered Technologist's examination of the Canadian Society of Laboratory Technologists. For Medical Radiography and Nuclear Medicine the advanced courses have been awarded credit toward Advanced Certification by the Canadian Association of Medical Radiation Technologists. Some of the advanced courses can be used toward the Health Care Management Certificate Program (Level 2) in the administration and post basic option.

Medical Laboratory

Medical Laboratory offers courses at many levels. The refresher courses prepare students for re-entering the work force, while the advanced ones prepare them for the Advanced Registered Technologist examination. Most of the courses help technologists keep up to date with the latest developments in their field.

70.X01	Advanced Haematology
70.901	Medical Laboratory Refresher Program
70.902	Normal Histology and Microanatomy for Medical Technologists

Medical Radiography

Medical Radiography offers advanced level courses in a variety of technical subjects. While most of the courses are designed for Advanced Certification, they can be used to update knowledge.

72.901	Tutorial for CAMRT Registration Examination (Radiography)
72.914	Basic Teaching Skills for the Radiological Technologist
72.911	Computed Tomography (Advanced Certification Credit)
72.912	Radiation Biology for Medical Radiation Technologists (Advanced Certification Credit)

Diagnostic Medical Sonography

New update courses in Diagnostic Ultrasound will be developed to assist sonographers keep abreast of the changes in this field.

73.901	Physics of Diagnostic Ultrasound.

Nuclear Medicine

Nuclear Medicine offers one advanced course. It has been awarded credit toward Advanced Certification.

74.901	Radiopharmaceuticals in Nuclear Medicine.

Biomedical Electronics

Biomedical Electronics technologists are employed to maintain and repair electronic equipment used in medicine and biology. More individuals must have some understanding of the rapidly changing field. Courses are designed to provide specific skills for immediate job application.

78.901	Basic Electronics in Medicine & Biology.
78.902	Intermediate Electronics in Medicine.
78.903	Electronics for ECG & EEG Monitoring.

Advanced Medical Electronics Modules

These three modules are designed for Electronic and Biomedical Electronic Technologists employed in the medical field. They provide both upgrading and continuing education to the technologist wishing to gain more experience with advanced digital electronic devices and microprocessors. The three modules are designed to be taken consecutively, but the preliminary modules may be omitted with proper prerequisites or work experience.

78.904	Advanced Electronic Devices (Module 1)
78.905	Introduction to Microprocessors for Medical Applications (Module 2)
78.906	Microprocessor Based Medical and Clinical Equipment (Module 3)

Health Information Technology

This program is designed for Accredited Record Technicians, persons holding the CCHRA (A) certification obtained from the Canadian College of Health Record Administrators, or health records technician graduates from other Institutes of Technology with more than 2 years work experience. The program will be individualized and will permit recognition of the student's work experience, previous education and individual educational requirements. Upon successful completion of the program the graduate will receive a Diploma of Technology in Health Information Technology and will be eligible to write the Certificant Examination of the CCHRA. For further information, counselling and experiental assessment contact Health Continuing Education at the Burnaby Campus.

80.901	Health Records Administration 1**
80.902	Health Records Administration 2**

Prosthetics and Orthotics

Short courses and workshops in Prosthetics and Orthotics are currently under development. To be placed on the mailing list contact Health Continuing Education, 434-5734 local 666.

Environmental Health

Environmental Health Technologists often face new challenges. Continuing Education courses are designed to assist these professionals to become familiar with key issues in these new areas.

82.901	Basic Sound Measurement
82.902	Basic Pest Control Within Buildings

Occupational Health & Safety

This is a relatively new technology which will graduate its first class in June 1984. At present, credit courses are offered toward a certificate for application to the diploma program. As the need arises short courses will be offered to update and advance employees in this field.

CERTIFICATE PROGRAM IN OCCUPATIONAL HEALTH & SAFETY

This is a 15 unit program designed for people employed in, or interested in, safety of persons and property in industry. Credits accrued in this certificate program may be applied to the Diploma program. Persons not wishing to take the entire program may register for individual mandatory or elective courses.

Participants must complete 10 units of mandatory courses and 5 units of elective courses to qualify for the Occupational Health and Safety Certificate. Course selections must be approved in writing by the Program Co-ordinator in Occupational Health and Safety.

Mandatory Courses

88.501	Accident Prevention 1
88.504	Industrial Health & Safety 1
88.506	Industrial Hygiene 1
88.511	Accident Prevention 2
88.512	Fire Protection 1
88.604	Industrial Health & Safety 2
88.605	Industrial Health & Safety 3
88.606	Industrial Hygiene 2
88.607	Industrial Hygiene 3
88.610	Accident Prevention 3
88.611	Accident Prevention 4
88.612	Fire Protection 2

Electives

10.221	Organizational Behavior 1
10.325	Labor Relations 1
10.904	Supervisory Skills
10.907	Discussion Leadership
10.918	Occupational Safety & Health (B.C.S.C.)
19.905	Safety and Sanitation
20.502	Public Speaking and Oral Communication
22.950	Physical Material Handling: Control and Use of Pesticides
31.911	Business and Technical Report Writing
40.915	National Building Code
49.900	Drafting Fundamentals
49.935	Automatic Sprinkler Design 1
49.936	Automatic Sprinkler Design 2
87.905	Fire Safety and Security in Health Care

PROFESSIONAL DEVELOPMENT COURSES

88.902	Basic Anatomy & Physiology for Occupational Health
88.903	Controlling Loss Through Interpersonal Skills

General and Psychiatric Nursing

Courses are offered for graduates in General and Psychiatric Nursing to update knowledge and skills. Advanced level (Post Basic) programs are under development in areas in Medical/Surgical, Oncology and Home Care Nursing and will be offered commencing January 1984. Basic level courses from health sciences and English are being prepared for delivery by independent study.

REFRESHER COURSES

Nurses who have not been practicing in recent years wishing to upgrade their skills and knowledge may undertake the refresher programs. These are exciting, intensive programs.

76.901	Refresher Course for Graduate Nurses**
77.901	Refresher Course for Psychiatric Nurses**

QUALIFYING COURSES

These courses are offered to assist nurses complete their qualifications for eligibility to become registered in British Columbia.

76.902	Basic Mental Health Nursing**
76.903	Obstetrical Nursing**

ADVANCED COURSES

Advanced courses are designed to provide post diploma qualifications in specialty areas for graduate registered nurses.

76.906/907	Operating Room Nursing — Level I**

PROFESSIONAL DEVELOPMENT COURSES

As the needs for continuing education of Registered Nurses and Registered Psychiatric Nurses are identified, BCIT will design and conduct appropriate courses. Check your hospital noticeboards for postings about new courses or contact Health Continuing Education at Burnaby Campus to have your name placed on our mailing list:

76.909	Enterostomal Therapy: The Role of the Nurse*
76.911	Gerontology Concepts
76.913	Intravenous Therapy*
76.918	Nursing Management of Behavior Patterns*
76.919	Obstetrical Nursing Update
76.931	Cancer Update
76.930	Diabetes Update
76.933	Nursing Management of Respiratory Problems

CERTIFICATE OF CREDIT IN NURSING** (under development)

A program of studies consisting of courses in English, behavioral sciences and biological sciences is being proposed to meet requirements of the general and psychiatric nursing curricula.

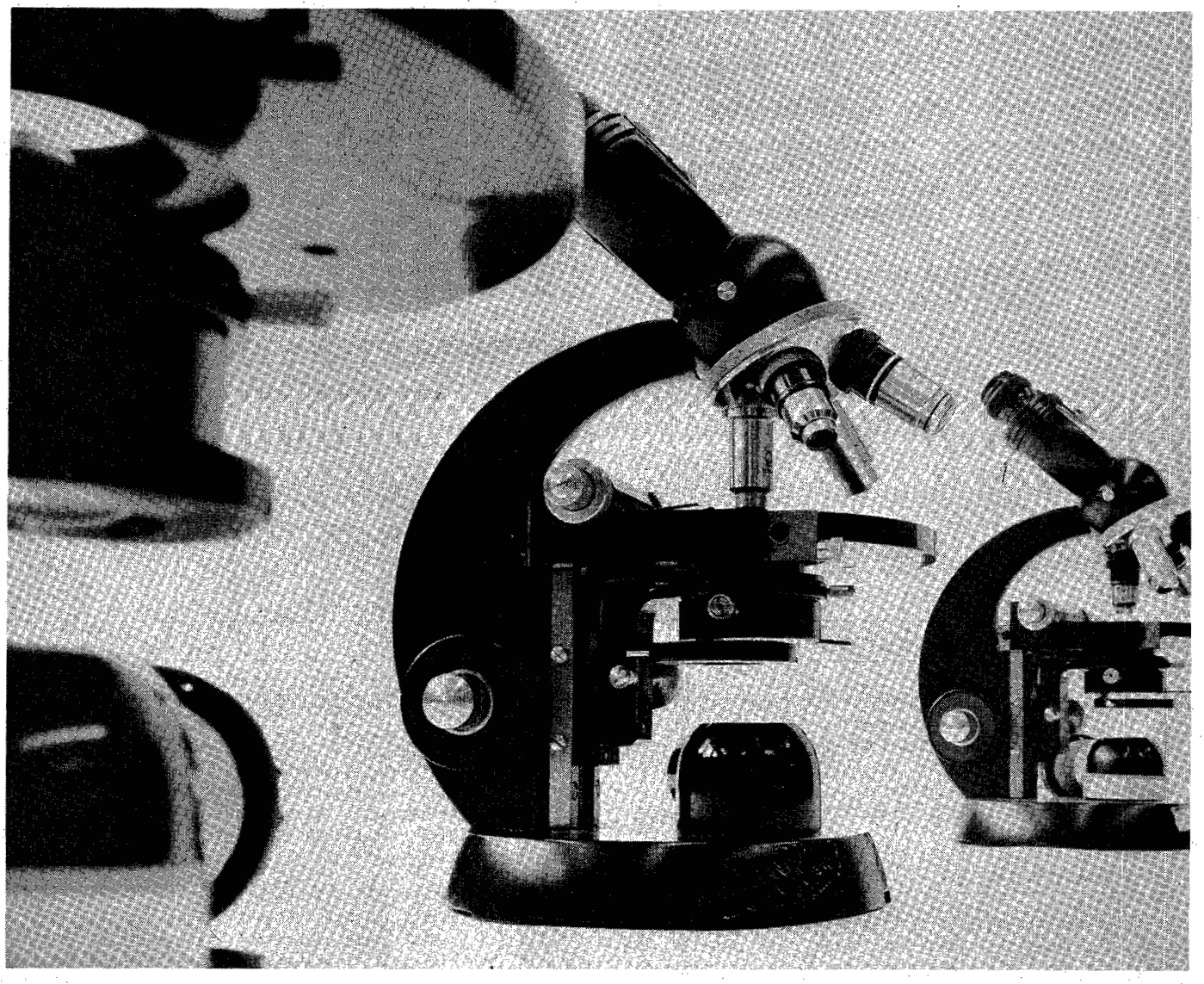
**These courses require approval by the department before registration. Application forms are available by contacting Health Continuing Education, BCIT, Burnaby Campus.

Interdisciplinary Courses

These workshops and courses are developed on a variety of general interest topics for health care professionals. They are offered at various times as indicated by specific need.

Agencies and interested groups of individuals may request the development of courses and workshops on topics not listed, by contacting Health Continuing Education at BCIT, Burnaby Campus.

86.907	Designing Fitness Programs for Mature Adults
97.901	Video Production for Educational Programming
97.905	Infection Control
97.906	Introduction to Human Sexuality in Health Care
97.914	Anatomy and Physiology: Review and Update*
97.915	Basic Principles of the Disease Process*



*This course will travel: These courses can be offered in any community in B.C. Fees will vary depending on the local arrangements and the location. For further information contact Health Continuing Education, Burnaby Campus.

**These courses require approval by the department before registration. Application forms are available by contacting Health Continuing Education, BCIT, Burnaby Campus.

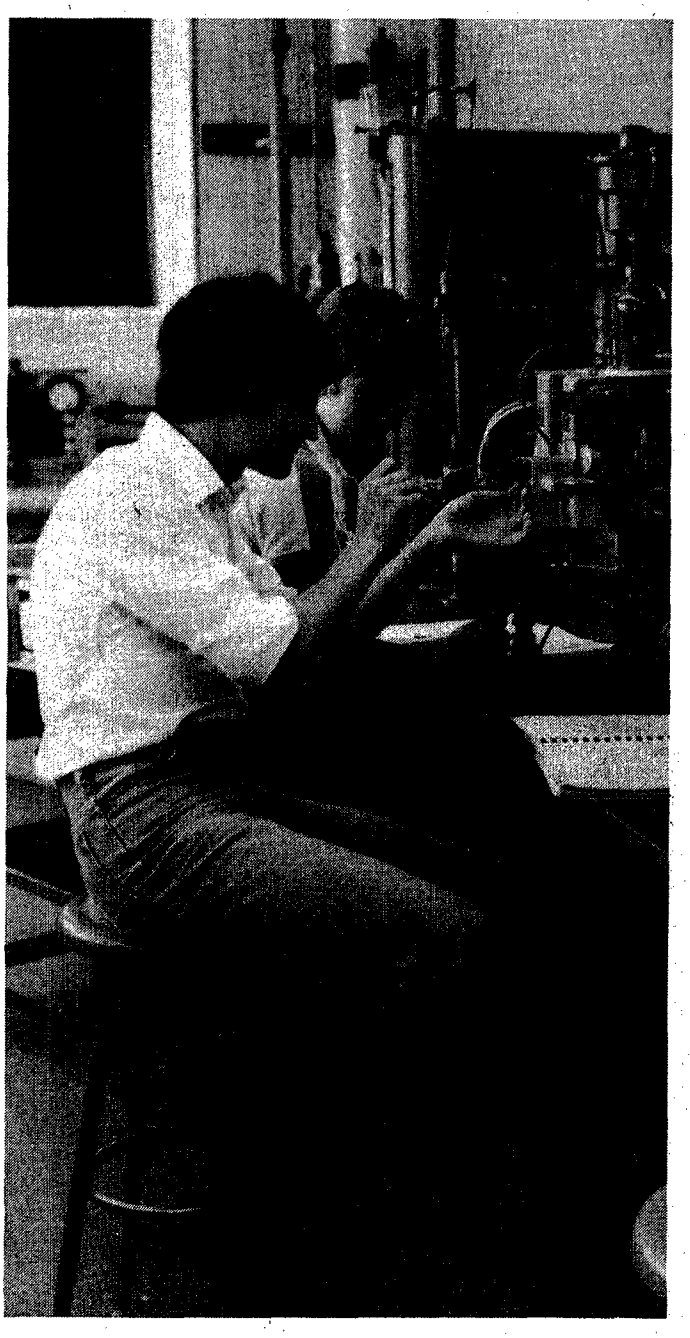
Course Descriptions

*This course can travel.

Following are all BCIT part-time course descriptions with the exception of those offered through the **Directed Study Centre** and those offered through **Industry Services** and the **Training and Development Centre.** For details on these services and programs see the General Information section of this calendar.

The following course descriptions are in numeric sequence. These can be related to the three departments as follows: Business: 10.XXX – 22.XXX; Engineering: 40.XXX – 54.XXX, Core: 30.XXX – 34.XXX, 22.900; and Health: 70.XXX – 98.XXX.

These courses may be taken individually providing all prerequisites are met, or may be taken as part of a program leading to Certificate standing. Prior to embarking on a Certificate Program it is advisable, and in many instances essential, to consult with a Program Consultant prior to registration. This ensures that the student enrols in courses actually appropriate to the desired Certificate. See Academic Information for details.



10.131 — MANAGEMENT 1
(formerly Management in Industry 1)
Unit: 1.0

This course provides a practical and theoretical introduction to the principal functions of modern management and is appropriate for persons with no formal management training as well as current supervisors, managers, and those anticipating such responsibility.

It is also useful in Certificate Program planning for individual career goals.

Topics include communication and management information systems; setting objectives; planning for profit, sales, and personnel; organization theory and structure; leadership styles; decision making; and other aspects of management responsibility.

The course structure includes lectures, films and case discussions with special emphasis on participation.

Text: "Principles of Modern Management, a Canadian Perspective", S.L. Certo/Appelbaum, Wm. C. Brown.

Note: 10.904 Supervisory Skills recommended for new supervisors or those anticipating such responsibility.

10.135 — ECONOMICS 1 — MICRO
Unit: 1.0

This course, designed to improve managerial skills by providing a basic understanding of micro-economic concepts, deals with the functioning of the market place, and the behavior of the firm in different competitive environments.

The course supplies background information for other BCIT courses and is an accepted transfer credit of various professional associations such as the Institute of Chartered Accountants.

Text: "Economics", Lipsey Purvis, Sparks and Steiner, Harper and Row 4th Edition; "Economic Work Book".

Prerequisite: Grade 11 Math or 22.900 Preparatory Business Mathematics.

10.221 — ORGANIZATIONAL BEHAVIOR 1
(formerly Management Psychology 1)
Unit: 1.0

This course gives the person with no formal training in Organizational Behavior, a background in basic behavioral concepts and their application to management situations. This includes exposure to the operational definitions or terminology common to psychology and other social sciences, to allow the student to grasp more readily the information conveyed in reading in all areas of organizational behavior studies.

The course is a combination of lectures, films, case studies, discussion, and group experience. The first part of the course concentrates on the individual, focusing on the determinants of behavior; heredity, culture, motivation, perception, attitudes, learning and leadership. The conclusion focuses on understanding group interactions in an organizational environment.

The succeeding course is 10.321 Organizational Behavior 2.

Text: "Organizational Behavior Concepts and Controversies" 2nd Edition, Robbins, Stephen; Prentice Hall, New York.

10.232 — MANAGEMENT 2
(formerly Management in Industry 2)
Unit: 1.0

A continuation of the study of functions of management begun in 10.131 Management 1.

Text: as in 10.131 Management 1.

Prerequisite: 10.131 Management 1.

10.235 — ECONOMICS 2 — MACRO
Unit: 1.5

The student should have a good understanding of how and why the economy works as it does.

Topics covered include: wages; employment; unemployment; competition; profits; consumer behavior; change theory; supply and demand;

price discrimination; speculation; price-setting behavior; interest; production theory; etc.

Text: "Economics", Lipsey Purvis, Sparks and Steiner, Harper and Row 4th Edition; "Economic Work Book".

Prerequisite: 10.135 Economics 1 — Micro.

10.240 — GOVERNMENT AND BUSINESS
Unit: 1.0

This basic course is particularly helpful to persons seeking a career in the federal, provincial or municipal levels of government and for business people who need to understand the nature and extent of, and the reasons for, government involvement in business.

Lectures, group discussions and selected readings are used to explore federal, provincial and municipal government in the regulation and support of business enterprises in Canada; government policy toward monopoly and combines control; legislation and regulation in such areas as banking, broadcasting, transportation, labor, consumer protection, etc.; support programs for various types of economic development; taxation; licensing; marketing boards; etc.

Text: "Business and Government in Canada: Selected Readings" (2nd Edition), Rea and McLeod.

10.321 — ORGANIZATIONAL BEHAVIOR 2
(formerly Management Psychology 2)
Unit: 1.0

This second part of Organizational Behavior is for persons in counselling situations or with leadership responsibilities who, having completed Part 1, will benefit from a deeper appreciation of motivation theory and its application.

It builds on the base provided in Part 1 so that students may better understand and cope with human behavior in the world of work on completion of the course.

The group will probe deeper into theories of people management which were introduced in Part 1, through lectures, case studies and films. These include organization culture attitudes and their importance in change, leadership styles, and conflict in goals and objectives.

Text: "Organizational Behavior Concepts and Controversies" 2nd Edition, Robbins, Stephen, Prentice Hall, N.Y.

Prerequisite: 10.221 Organizational Behavior 1.

10.325 — LABOR RELATIONS 1
Unit: 1.0

Designed for those involved in or associated with labor relations, either as a member of management or of a union. People in the personnel field, shop stewards, supervisors, or managers find the coverage of the collective bargaining process and day-to-day contract administration extremely useful.

The student can expect to approach his responsibilities in matters covered by a collective agreement with more confidence and expertise.

Lectures, case discussions and exchanges within the group are used to cover related laws, typical contract clauses, grievance procedures, responsibilities of the supervisor and the shop steward, and current activities in the labor relations field.

Text: "The Practice of Industrial Relations", D.A. Peach, D. Kuechle, McGraw Hill Ryerson, 1975. "B.C. Labour Code, Essential Services Disputes Act, Public Service Labour Relations Act" Queens Printer.

10.360 — BUSINESS LAW 1
Unit: 1.0

This course is designed to familiarize students who can benefit from a general coverage of commercial law, or those who require the fundamentals to proceed to more advanced studies outlined in 10.460 Business Law 2.

The course consists of reading assignments, lectures based on the reading, and case studies. It deals primarily with the law of contract. Tort law is also emphasized. Other topics include jurisprudence, organization of courts and agency law.

Text: "Law and Business Administration in Canada", 4th Edition, Smythe and Soberman. "Cases in Canadian Business Law", McPhillips/Davis/Taylor.

10.425 — LABOR RELATIONS 2
Unit: 1.0

This course gives students a thorough understanding of the practical applications of administering the collective agreement, wage issues, economic supplements, arbitration, mediation, preparation for collective bargaining and techniques in collective bargaining.

Case studies, discussion groups and role playing techniques are used in these presentations.

Text: as 10.325 Labor Relations 1.

Prerequisite: 10.325 Labor Relations 1.

10.460 — BUSINESS LAW 2
Unit: 1.0

This second part of the 24-week course gives students carrying on from 10.360 Business Law 1, a considerably greater depth of knowledge of commercial law.

Upon completion students can deal more effectively with lawyers and are better able to handle many of their own affairs. Finally, completion of this course enables students to determine specifically what legal problems should be turned over to a lawyer.

This course consists of reading assignments, lectures based on readings and case study. Topics include Canadian mercantile law; the law of contracts and subjects involved with guarantee; agency employment; mechanics' and wage earners' liens; sale of goods; bailment; corporations; partnerships; bankruptcy; real property; mortgages; landlord and tenant; negotiable instruments; insurance; banks and banking torts; criminal, marriage, and constitutional law.

Text: as 10.360.

Prerequisite: 10.360 Business Law 1.

10.530 — MANAGERIAL SKILLS FOR ADMINISTRATIVE ASSISTANTS
(formerly Administrative Assistant/Executive Secretary 1 & 2)
Unit: 1.0

This course is for those in positions of responsibility or those preparing themselves for career advancement to positions such as administrative assistant or executive secretary.

Students completing this course are comfortable in broadening the scope of their work, increasing their responsibilities, and taking initiative in their administrative function.

Topics include the role of the secretary today, time management principles, expressing ideas (verbal and written), listening skills, handling criticism, and group discussion skills. Student participation is stressed to develop communication skills and to learn from the experience of others.

Text: "Communication Probes", Peterson, Goldhaber and Pace, Science Research Association Inc. 1974.

10.901 — SALARY ADMINISTRATION
Unit: 1.0

On completion of the course the student knows the whys and hows of salary administration and has an introductory level knowledge and understanding of techniques in this field.

Lectures, discussions, case presentations and examples are used to explain alternative methods of job evaluation; elements of a job description; establishing and maintaining salary schedules; administering a salary plan; the various types of general and specific adjustments for promotions and demotions; how to set up a simple plan; etc.

Text: "Compensation Management", Henderson, Prentice Hall.

Prerequisite: 10.910 Personnel Management or equivalent experience.

10.902 — SMALL BUSINESS MANAGEMENT 1
Unit: 1.0

See 20.310 Small Business Development.

Text: "Small Business Management in Canada" R.H. Knight, McGraw-Hill-Ryerson.

10.903 — SMALL BUSINESS MANAGEMENT 2
Unit: 1.0

See 20.410 Small Business Management.

Text: "Small Business Management: A Strategic Emphasis" Raymond Kao, Holt Rhinehart.

10.904 — SUPERVISORY SKILLS
Unit: 1.0

New supervisors or aspirants for leadership responsibilities will find this course designed to meet their needs. It is applicable to people in larger or small companies, institutions, government departments, municipalities, or associations — wherever a supervisory situation exists.

It provides knowledge and techniques for the student to increase his confidence and capabilities as a leader and provides a foundation for further training in supervision and management.

Lectures, films, and case discussions cover the needs of persons taking the first step into supervision.

Topics include getting work done through others, handling grievances, delegation, work planning, and roles and relationships within an organization.

Text: "Supervision: The Direction of People at Work" 3rd Edition, Richard Plunkett, Wm. C. Brown Co.

10.905 — MANAGERIAL STYLES
Unit: 1.0

A practical course designed for supervisors or managers, or for students wishing a better understanding of the "people aspect" in management.

The course assists students in developing a productive management style.

Starting with the roles and relationships of a manager, the course provides a practical application of management psychology, a good examination of how accepted theories may be applied in differing situations, and the implications for organizational behavior and development using lectures, case studies, films and discussion groups.

Text: "Theories of Management" R. Miles, McGraw-Hill.

Prerequisite: 10.131/232 Management 1 and 2, 10.221/321 Organizational Behavior 1 & 2 and/or sufficient working experience in leadership situations.

10.907 — DISCUSSION LEADERSHIP
Unit: 1.0

This course is designed for anyone who is involved in discussion leadership, formal or informal — supervisors, managers, group leaders, association representatives, union leaders, etc. It is aimed principally at problem solving.

Persons completing this course gain confidence and skill in getting the most out of exchanges within a group, a meeting, or a formal conference.

Using lectures, demonstrations, and critiqued practice sessions the instructor leads the group through different kinds of meetings, planning techniques, introducing the subject, question techniques, controlling the discussion, ensuring participation, summarizing, fixing responsibility, and ensuring follow-up action.

10.908 — PROBLEM SOLVING AND DECISION MAKING
Unit: 1.0

Persons completing this course are able to apply various techniques to problem solving and decision making. Emphasis is on problem analysis.

Group dynamics, demonstrations, lectures, and practice sessions relating to real applications prevail. Rational and creative methods, using the principle of learning through interpersonal workshops or group involvement, establish a high level of confidence in the students' ability to deal with problems effectively.

Prerequisite: 10.131/232 Management 1 and 2, or equivalent.

10.910 — PERSONNEL MANAGEMENT
Unit: 1.0

An introductory course for those who have recently joined a personnel or industrial relations department or who plan to enter the field. It is also valuable to supervisors or managers who must implement or are held accountable for administering personnel policies.

On completion the student has a good understanding of the personnel function, its relationship to management, its responsibility to employees, and what it does.

Lectures, case studies, and audiovisual aids give an overview of the major functions of the personnel department, with particular emphasis on the practical application of personnel policies and procedures.

Topics include employment wage and salary administration, administration of pension plans and insurances, employee relations, and other topics. For further in-depth coverage of specific topics supporting courses should be taken.

Text: "Canadian Personnel and Human Resources" Werther, Davis, Schwind, Das and Miner; McGraw-Hill. "Human Right Code of B.C., Employment Standards Act, B.C. Government" Queens Printers.

10.913 — SELECTION INTERVIEWING
Unit: 1.0

This course is presented for people in the fields of personnel, management, supervision, or anyone involved in interviewing applicants for employment. This important skill is seriously under-rated in most organizations. The course identifies techniques, styles, stages, uses, pitfalls, and key points in interviewing with particular emphasis on questioning techniques and selective listening. Classes utilize practice sessions on closed circuit television. The class is limited to 20 students because of the need for individual attention.

Text: "Interviewing: Principles and Practice" Stewart/Cash, Wm. C. Brown Co.

10.914 — MANPOWER PLANNING
Unit: 1.0

Designed for people in personnel training, section managers, supervisors, anyone in a planning organization involving "people resources".

Presented is the philosophy of some of the techniques used in maximizing people potential in an organization.

Lectures, group discussions, and case studies cover the importance of manpower planning; methods of evaluating present resources; future projections; sources of supply; identifying training needs; related personnel policies, budgeting, and costing; and program evaluation.

Text: "Human Resources Planning" Walker, McGraw-Hill, Ryerson

Prerequisite: 10.910 Personnel Management or equivalent.

10.915 — PSYCHOLOGICAL TESTING
(formerly Testing)
Unit: 1.0

Introduces participants to various kinds of tests such as aptitude, personality, and interest measures. Administration, scoring, and the design of "in-house" testing programs are also covered. The various uses of tests, in selection, promotion, training and individual career planning, (including relocation counselling), are described in practical terms.

Issues such as testing and human rights, discrimination, and manpower planning are also discussed.

Note: Laboratory fee — $15. payable at registration.

Prerequisite: 10.913 Selection Interviewing or equivalent experience.

10.916 — COUNSELLING 1
Unit: 1.0

Demonstrates that communication skills can be learned, and that through training, everyone can learn to become a more effective communicator.

The instructional method focuses on learning to discriminate various levels of communication. This is accomplished through lectures, listening, observing and actual practising.

The discrimination training focuses on empathy, respect, genuineness, concreteness, self-disclosure and confrontation. Audiovisual tape recordings, typescripts and live interaction will be used to develop effective ratings. Role playing and observer feedback are essential aspects in this developmental training.

10.918 — OCCUPATIONAL HEALTH AND SAFETY
Unit: 1.0

A practical course for those responsible for occupational safety and health in an industrial setting including managers, supervisors, shop stewards, safety committee members or members of the industrial relations or personnel department.

Lectures, films, and case discussions are used to cover the important aspects of occupational safety and health including The Workers' Compensation Act; Factories Act; rules and regulations; types of organization structure; the role of the committee; creating a "thinking" state of mind; promotional approaches; effective use of statistics; the pros and cons of reward systems; union/management cooperation; industrial hygiene; and other ways and means of getting this important job done.

This course is conducted by the B.C. Safety Council.

10.919 — LABOR RELATIONS RESEARCH
Unit: 1.0

Offers an insight into the information used in collective bargaining and arbitration and familiarizes students with survey techniques, statistical practices, case preparation, costing methods, pension plans, and how to present factual information in negotiations and hearings. The course is designed primarily for people involved in preparing material for labor-management negotiations.

A student completing this course can prepare factual data for negotiations and understands the information presented; can cost wage, salary, and fringe-benefit proposals; and is familiar with sources of information and has an understanding of research concepts.

The course emphasizes discussion following lectures, and employs mock bargaining to demonstrate the importance of emotional and political interference in the communication process. Guest speakers from labor and management are invited to participate in lectures and discussions.

Text: "How to Cost Your Labour Contract" Granoff, Bureau of National Affairs. "Canada Labour Code" (Current) Government of Canada Publication.

10.924 — MANAGEMENT BY OBJECTIVES
Unit: 1.0

For supervisors, administrators, managers and specialists who wish to improve their knowledge of the planning process in management.

On completion, students have a good knowledge of the philosophy, practices, and procedures commonly known as "Management by Objectives".

Using lectures, discussion and group work, the class covers the case for planning and its relationship to strategic plans; identifying key areas; setting objectives; the management cycle; styles of management in a climate appropriate to the process of managing by objectives.

Text: "Managing by Objectives" Raia, Anthony P.; Gage.

10.926 — PARA-LEGAL ASPECTS OF PERSONNEL PRACTICE
Unit: 1.0

Intended to give participants an orientation to and working knowledge of current para-legal issues in human resources. It supplements other personnel courses and provides the personnel practitioner with insight into defining corporate goals and positions in these issues, sources of help, appeal/adjudication channels and when to retain professional assistance.

Participants are given ample opportunity to develop their understanding and skills, and show first-hand how these experiences may be applied to their particular workplace.

Prerequisite: 10.910 Personnel Management, or 10.131 Management 1 or permission of the instructor.

10.928 — MANAGEMENT POLICY
Unit: 1.0

Lectures, case studies and business simulation exercises provide a comprehensive view of the essentials of the general management role and provide practice in making sales, price, production, etc. decisions in the equivalent of a real world situation simulated through a comprehensive computer exercise.

Case studies examine the relationship between the business opportunity and the definition of business purpose, product and general policy and strategy for the guidance of the business activities.

Text: "The Executive Similations" Keys/Leftivid, Kendall Hunt.

Prerequisite: 10.131 Management 1 and 10.232 Management 2; a fundamental ability to understand a Balance Sheet and Profit and Loss Statement.

10.932 — THE OFFICE OF THE FUTURE: MANAGEMENT AND SUPERVISION
Unit: 1.0

Designed to assist the progressive manager to cope with the impact of technological change experienced within the present and future office environment.

Lectures, discussions, case studies, and role playing describe and explain the influence that the developments in word processing, data processing, and communication technology have on the managers' role.

Topics include activities of the office manager; systems in the office of the future; human factors and behavioral implications; analysis; design and implementation of the office of the future.

10.940 — SPECIAL PROJECT
Unit: 1.0 or 2.0

An opportunity for advanced level BCIT Continuing Education students to do an independent, in-depth study of an area of interest in the business management field under the guidance of an instructor.

In this project students take a real "live" problem or situation that they face in their work, and tackle it with the guidance of an "expert" in the field. The specific objectives of the project are set by the student.

Students interested in pursuing this should approach a program consultant for assistance in developing proposals for the project.

10.950 — TRAINING TECHNIQUES
Unit: 1.0

Useful to people responsible for the training of personnel in business, industry, government, and institutions. Members of personnel departments contemplating a training program, and supervisors involved with on-the-job training, will be particularly interested.

On completion the student has a good grounding in current training methodology, techniques and aids.

Formal lessons, demonstrations, and practice sessions cover such topics as learning theory, determining training needs, writing objectives, designing training programs using outside resources, and evaluation. Practice sessions develop instructional ability including the effective use of visual aids.

10.951 — INSTRUCTION AND FACILITATION — ADVANCED TRAINING TECHNIQUES
Unit: 1.0

As a sequel to 10.950 Training Techniques this course develops the skills and knowledge necessary to effectively lead and assess training sessions, workshops, simulation exercises, and group sessions.

This course is intensive and requires considerable commitment from participants to actively demonstrate and assess their developing skills.

Prerequisite: 10.950 Training Techniques.

10.952 — COURSE DESIGN — ADVANCED TRAINING TECHNIQUES
Unit: 1.0

As a sequel to 10.950 Training Techniques, this course develops skills and knowledge necessary to effectively plan, design, construct and evaluate training programs and courses.

This course is intensive and requires considerable commitment from participants to actively demonstrate and assess their developing skills.

Prerequisite: 10.950 Training Techniques.

10.954 — OFFICE MANAGEMENT
Unit: 1.0

For new office supervisors or people anticipating a move into such a position, this course will provide the knowledge and techniques to enable them to approach their responsibilities with increased confidence.

Lectures, case studies and group discussions are used to cover such topics as clarification of the role of the supervisor; planning of work, delegation; establishment of systems and organization of methods; control; training and development of employees; assessing performance; communications, etc.

Note: This course is not recommended for those students who have completed 10.904 Supervisory Skills.

Text: "Office Management and Control" G.R. Terry, Irwin Dorsey.

10.955 — MANAGEMENT OF TIME
Unit: 0.5

Designed for administrators who wish to improve their performance on the job and still have time to enjoy living.

On completion, students have acquired the knowledge and skills to use the basic tools of time management, and a framework in which to make better decisions and effectively manage their responsibilities.

A comprehensive analysis of time used and abused furnish the student with a working knowledge of how to manage this resource. Films, lec-

tures, assignments, discussions and direct interpretation of the individual's time in working and personal life expand the topics. Topics include: time robbers — cause and cure; planning, setting goals and priorities; creative time analysis; deciding what not to do; ending procrastination forever; rediscovering lost time; overcoming the "paperwork" habit; myths about hard work; a manager's time inventory; etc.

Text: "Successful Time Management" Jack D. Ferner, John Wiley & Sons.

10.957 — MUNICIPAL LAW
Unit 1.0

In addition to providing the student with an overview of the B.C. Municipal Act and other provincial statutes governing local government activities, this course covers those areas of administrative law, constitutional law and contract law, which have an impact upon municipal administrative practice.

The course gives students the basics of the law as it applies to the operation and management of municipalities in B.C.

Additional topics include municipal powers and duties; municipal councils; elections; by-laws; acquisition and disposal of land; contracts and franchises; revenues; assessment and taxation; actions by and against municipal government; B.C. statutes and case law relating to the principal services provided by municipal authorities.

10.981 — COUNSELLING 3
(formerly Interpersonal Communication Skills)
Unit 1.0

This course is the second phase of the interpersonal communications skill development. It is an opportunity to practice communication skills in supervised training sessions.

This communication skill training focuses on the application, integration and refinement of the core dimensions: empathy, respect, genuineness, concreteness; self-disclosure and confrontation. This training is performed through use of dyads and double dyads comprised of counsellor, client and peer-group observers.

Audio and video tapes are an integral part of the counselling, training, feedback and evaluation processes.

The instructional method focuses on actual counselling relationships with ongoing feedback from peer group observers and instructors.

Prerequisite: 10.916 Counselling 1, or permission of instructor.

12.512 — TV PRODUCTION TECHNIQUES
Unit: 1.0

Provides students who have completed 12.902 Television Broadcasting — Intro with more study time and lectures designed to broaden their knowledge of how the equipment works and how to use it.

Each session consists of a lecture followed by setup and shooting of interviews, demonstrations, commercials and promos, etc. Students are able to add a more professional polish to their work; special techniques are introduced to help them attain this goal.

12.612 — TV OPERATIONS TECHNIQUES
Unit: 1.0

Gives students the opportunity to simulate the continuous, hour-by-hour operations of a TV station's regular broadcast day. Students prepare and use daily logs and become proficient at running a station "to time". The objective is to attain a sustained operational period that is fault-free with all elements occurring at their scheduled times.

12.901 — RADIO BROADCASTING — INTRODUCTION
Unit: 1.0

Of interest to people contemplating a career in radio broadcasting and those currently employed in non-broadcast positions in the industry who wish to move into the operations area of a radio station.

Introduces students to broadcast equipment, station operation and hierarchies, regulations, commercial production, broadcast procedures and jargon.

12.902 — TELEVISION BROADCASTING — INTRODUCTION
Unit: 1.0

Designed for persons interested in television broadcasting as a career, those in the industry working in non-production areas or other interested persons.

Introduces the television equipment necessary to the operation of a TV station. Theory and procedures of operation are explained in detail. Participants operate equipment in production exercises with the ultimate goal of producing a full-length program.

12.903 — FILM FOR BEGINNERS
Unit: 1.0

Introduces the basics of professional film making including scripting, equipment operation and filming techniques to people who are interested in cinematography. Additional topics are optical and magnetic sound, special effects, animation, lighting and editing.

12.905 — COPYWRITING FOR RADIO AND TELEVISION
Unit: 1.0

The "how" and "why" of writing radio and TV commercials. Ideal for non-production or writing employees in the broadcast industry looking for a move into this area, or for anyone wishing to explore copywriting as a career.

12.908 — BROADCAST NEWS WRITING
Unit: 1.0

Writing techniques used in radio and TV news writing for those in the field who wish to develop additional skills, employees in the industry who wish to add news writing to their present skills and for general interest.

12.910 — INVESTIGATIVE REPORTING
Unit: 1.0

Anyone who would like insight into the motives and processes of investigative reporting will find this course of interest. Although the course should not be regarded as sufficient preparation for employment as an investigative reporter, content is detailed enough to be useful to anyone contemplating a reporting career with the addition of a broader journalism course.

12.911 — RADIO: COMMERCIAL AND AUDIO PRODUCTION
Unit: 1.0

Learn how to produce radio commercials and other audio features using modern radio commercial production and recording theories and techniques. For those who have completed Radio Broadcasting — Intro or who have industry experience.

12.912 — RADIO AND TELEVISION ANNOUNCING
Unit: 1.0

As an introduction to basic announcing skills this course improves students' presentation and articulation. Several styles and techniques of announcing practice followed by critiques and evaluation. Please note: a voice audition may be required.

12.913 — BROADCAST JOURNALISM — INTRODUCTION
Unit: 1.0

As an introduction to all aspects of news operation in the broadcast industry this course covers basic reporting, writing and presentation of radio and TV news; newsroom operations, methods and practices; editing, line-up and content of news stories.

12.917 — BROADCAST SALES AND MANAGEMENT
Unit: 1.0

A unique insight into the complexities involved in the operation of a broadcast outlet as a business. Through a combination of informal lectures, guest speakers, and tours of local broadcasting stations, students receive an understanding of many of the key aspects of the business side of broadcasting.

Lectures cover sales, sales management, advertising (theory and practice), sales and station promotion, advertising agencies, programming, an over-view of economics in broadcasting, market measurement, contemporary management styles, computers in broadcasting, etc.

Through this course, potential broadcasters develop an understanding of the work done by the "suits that run the store."

12.921 — RADIO OPERATIONS LAB
Unit: 1.0

Provides 36 hours of advanced practice in the radio lab facilities. Most students find upon completion of Radio Broadcasting — Introduction that they are just becoming familiar with equipment and operations

when the course ends. Radio: Lab allows students 12 weeks practice in simulated station operations. Group and individual critiques are made after simulation sessions to evaluate performance.

12.925 — THE MUSIC BUSINESS AND THE BROADCAST INDUSTRY
Unit: 1.0

Course topics include the roles, responsibilities and operation of talent agencies and management; concert promotion and merchandising; song-writing and publishing, copyright; record companies and manufacturing, recording studios; getting "air-play" on radio stations, contracts etc.

12.926 — DEVELOPMENT OF CONTEMPORARY MUSIC
Unit: 1.0

The music we listen to today has evolved through many channels, including rhythm, blues, jazz, country, rock-a-billy and pop. This course examines changes that have taken place in our music over the past few decades, with particular emphasis on the music known as "Rock and Roll" and "Rock."

The course will be of great interest to persons wishing to broaden their musical knowledge whether for personal information or professional development in the music business and/or broadcasting.

The topics are approached through informal lectures and guest speakers. Considerable time will be spent auditioning, analyzing and discussing recordings of the major contributors to the development of today's contemporary music. The course is both informative and enjoyable.

12.927 — DRAMATIC WRITING FOR FILM AND TELEVISION
Unit: 1.0

For people interested in pursuing opportunities in the expanding areas of film and television dramatic writing.

As the satellite age develops, programmers will be seeking more and more material to supply the dozens of channels available with new programming. This course addresses that demand and prepares students for those opportunities by discussing the many different approaches to dramatic writing, special techniques involved, different types of scripts, marketing of material, etc.

Provides a solid base for those considering developing dramatic scripts for film and television use.

12.928 — BROADCAST INDUSTRY ORGANIZATION
Unit: 1.0

For people interested in finding out how the Broadcast Industry operates from an organizational point of view.

Discussions center on individual station hierarchies, the Canadian Radio-Television and Telecommunications Commission, the Canadian Association of Broadcasters and provincial and regional Associations, international affiliations and associations, regulatory agencies and broadcast-related industries, networks, the CBC and broadcasting companies.

The focus is on regulations affecting broadcasters in Canada, accounts of the history of broadcasting with an emphasis on Canadian pioneers, and insights into the future of the Broadcast Industry.

This course is ideal for those wanting more information about the operation of our Canadian Broadcasting system and its relationship with the rest of the world.

12.930 — WRITING FOR THE MEDIA
Unit: 1.0

A practical guide to freelance writing for radio and television. Prepares students for writing opportunities with CBC Information Radio, CBC Television, the National Film Board and other markets. Emphasizes proper formats, writing styles, use of equipment and professional business practice as well as assisting writers to package material for sale.

14.050 — DATA PROCESSING — INTRODUCTION
Unit: 1.0

Introduces the principles and concepts of business data processing to people with little or no programming experience. It may be useful to those who need a better understanding of computer operations in their firms. This course is a prerequisite for most of the systems and programming courses in this technology for people considering the computer field as a career.

Lectures and laboratory sessions with "hands-on" computer experience, include an introduction to the computer: input/output, hardware, uses of computers, background, data representation: Applied systems: files; magnetic tape and disk, master and transaction files; data entry and control, batch processing, on-line data entry; computer programming: flowcharting; input/output; processing, decisions, arithmetic, branching.

Students will write and test five programs in the BASIC programming language.

14.052 — COMPUTERS IN BUSINESS
Unit: 1.0

This course is designed for those who are not directly involved in data processing, but require a familiarity with the current terminology and concepts used in the computer industry. Participants must have a basic understanding of programming and computer systems.

Upon successful completion students are able to communicate effectively with data processing personnel, recognize the potential use of computers in a business environment, and understand the implications of installing an in-house computer or data centre system.

Lectures, laboratory sessions and discussion groups cover topics such as the "state of the art" of computer equipment and programming; data entry techniques; batch, on-line and distributed processing; telecommunications; control and security over computers; the criteria for evaluating and selecting various computer systems; and the implications computers have on the financial and staff resources of companies. Students analyze the characteristics of several computer systems used to meet the computer needs of a medium-sized company.

Prerequisite: 14.050 Data Processing — Introduction or 14.914 Introduction to Data Processing — Microcomputers.

14.503 — COMPUTER PROGRAMMING PL/1 — INTRODUCTION
Unit: 1.0

This course allows students with some previous programming experience to learn the PL/1 "high-level" language using typical business programming techniques.

On successful completion the student can code, test and debug PL/1 programs of a relatively complex nature.

Each three-hour period consists of a mixture of lecture and lab sessions. Topics include data declaration; record and stream I/O; PL/1 arithmetic; structures; arrays; built-in functions; procedure and begin blocks.

Prerequisite: 14.902 Assembler 1

14.505 — COMPUTER SYSTEMS — INTRODUCTION 1
Unit: 1.0

An introduction to the basic skills required to begin the definition and design of computer systems. Emphasis is on the fundamentals of systems analysis which includes development of system objectives, problem definition, information gathering, and effective written and verbal communication.

The course presents the systems development process and develops the ability to communicate effectively with user department personnel about their systems problems and possible computer solutions.

Topics include: basic systems theory; the systems development cycle; information gathering; flowcharting; report writing; forms design and presentation techniques.

Upon finishing this course the student should proceed to 14.605 to learn additional techniques and how to apply them to common business systems.

Prerequisite: 14.050 Data Processing — Introduction or 14.914 Introduction to Data Processing — Microcomputers.

14.515 — COMPUTER SYSTEMS DEVELOPMENT 1
Unit 1.0

This course provides a working knowledge of the practice of systems analysis, and develops job skills and techniques related to the design of information processing systems. On successful completion the students contribute actively in the investigation, analysis and design phases of systems development projects.

The student should continue with 14.615 where the implementation phases of the systems development life cycle are covered.

Using lectures, discussion and extensive case study practice, students are guided through phases of systems design including feasibility studies, fact finding and analysis, and design alternatives. Other topics include forms design, hardware considerations, standards and documentation.

Prerequisite: 14.505/605 Computer Systems — Introduction, or an advanced programming course.

14.603 — COMPUTER PROGRAMMING PL/1 — ADVANCED
Unit: 1.0

Students learn the PL/1 "high-level" language using typical business programming techniques.

On successful completion students can code, test and debug PL/1 programs of a relatively complex nature.

The course is a continuation of 14.503, and includes tapes and disk processing, and more advanced programming techniques and language features.

Prerequisite: 14.503 Computer Programming PL/1 Introduction

14.605 — COMPUTER SYSTEMS — INTRODUCTION 2
Unit: 1.0

This course, expanding on the fundamentals learned in 14.505 allows students to develop their analytical skills and learn basic computer systems design techniques. The techniques include common business applications as processed on small to medium-sized computers.

On completion a student can expect to be able to gather and organize systems data, prepare systems flowcharts, design files, set up an implementation schedule and other documentation. Coding structures and application systems, i.e. invoicing accounts payable and accounts receivable are discussed in detail. Scheduling techniques such as Gantt charts, PERT/CPM are introduced.

The roles of data communications, data base usage and small computers in systems design, are also discussed. A major systems project utilizes the material presented in 14.505 and 14.605.

Prerequisite: 14.505 Computer Systems 1 — Introduction.

14.615 — COMPUTER SYSTEMS DEVELOPMENT 2
Unit: 1.0

This course expanding on material covered in 14.515, provides a working knowledge of the practice of systems analysis and develops the job skills and techniques related to the implementation of information processing systems.

On successful completion the student can contribute actively in the documentation and implementation phases of systems development projects.

Using lectures and discussion, and a continuation of the case study from Term 1, students are guided through phases of documenting and implementing systems. Other topics covered include controls, communication techniques, scheduling systems conversion and post implementation auditing.

Prerequisite: 14.515 Computer Systems Development 1.

14.750 — DATA PROCESSING — INTRODUCTION
Unit: 1.0

A one week intensive course covering material presented in 14.050 Data Processing — Introduction. Full 0900-1700 days plus some evening work required. See 14.050 for course content.

14.902 — COMPUTER PROGRAMMING — ASSEMBLER 1
Unit: 1.0

This course provides an introduction to programming for persons intending to become computer programmers. IBM assembler language is used so that the student will become more familiar with the actual programming steps taken by the computer.

On successful completion students can produce working, fully documented assembler programs for elementary business problems.

A combination of lectures and lab practice allow students to write, test and debug a series of assembler programs that illustrate the problems encountered in the business data processing field. Topics include computer storage devices; assembler instruction set; decimal, binary and hexa-decimal number systems; character and packed data; decimal arithmetic operations; problem analysis; flow-charting; coding and testing; debugging; programming standards; documentation, control and validation of data; data controls; and, multi-level totals.

Prerequisite: 14.050 Data Processing — Introduction or 14.914 Introduction to Data Processing — Microcomputers (65% or better), or equivalent data processing experience.

14.903 — COMPUTER PROGRAMMING — ASSEMBLER 2
Unit: 1.0

This course provides a continuation of the introductory course 14.902 Computer Programming — Assembler 1, and more detailed practical knowledge of IBM assembler language and computer architecture.

On completion, students are knowledgeable about the architecture and principles of operation of the IBM computer, and can use assembler language in common business programming situations.

This course includes lectures and lab problem sessions. Topics include: assembler instruction formats; binary instructions; registers; base/displacement addressing; tables and table look-up techniques; sub-routines and program structure; and IOCS: file definition and imperative macros.

Prerequisite: 14.902 Computer Programming — Assembler 1

14.904 — COMPUTER PROGRAMMING — ASSEMBLER 3
Unit: 1.5

This course provides advanced knowledge of IBM assembler language and the ability to write extensive programs in this language. Persons already employed in programming will find this course helpful in broadening their understanding of programming concepts and IBM operating systems.

On successful completion students can understand input/output control and operating interfaces; use the assembler macro language; and use magnetic tape and disk storage devices.

Lectures and laboratory exercises provide practical experience and cover operating system interfaces, tape and disk storage, macro writing, subprograms, and Logical IOCS operations.

Prerequisite: 14.903 Computer Programming — Assembler 2.

14.909 — FORTRAN IV — INTRODUCTION
Unit: 1.0

This course allows students who have some introductory experience of computers and computer programming, to gain an insight into a "high-level" programming language. Students already familiar with another programming language find the course helpful in understanding computing in general.

This course is a preparation for 14.913 FORTRAN IV — Intermediate.

On completion, students have sufficient knowledge and experience in the use of FORTRAN IV, to enable them to design, flow-chart, write, test and debug simple computer programs as assigned.

The course consists of a balance between lectures, tutorials, and practical experience.

Additional topics include the syntax and use of a subset of the statements comprising the FORTRAN IV language; the application of these statements to solve simple numeric problems; and preparation and submission of programs to an available computer.

Prerequisite: Grade 12 mathematics and 14.050 Data Processing — Introduction or 14.914 Introduction to Data Processing — Microcomputers.

14.913 — FORTRAN IV — INTERMEDIATE
Unit: 1.0

Provides students with continuing progress into aspects of FORTRAN IV language beyond those covered in 14.909 FORTRAN IV — Introduction.

Students expand their knowledge and experience in the use of FORTRAN IV, enabling them to design, flow-chart, write, test and debug programs as assigned and programs within their own field of endeavor, and follow the logic within programs written by others.

The course consists of a balance between lectures, tutorials, and practical experience. Topics include the syntax and use of FORTRAN IV statements as related to areas such as: double precision and logical constants; variables and expressions; subroutine, function and block data sub-programs; processing sequential files on tape and disk devices; the application of these statements to solving both numeric and non-numeric problems; preparation and submission of programs to an available computer.

Prerequisite: 14.909 FORTRAN IV — Introduction.

14.914 — INTRODUCTION TO DATA PROCESSING — MICROCOMPUTER
Unit: 1.0

Introduces the principles and concepts of business data processing to people with little or no programming experience. It may be useful to those who need a better understanding of computer operations in their firms. This course is a prerequisite for most of the systems and programming courses in this technology for people considering the computer field as a career.

Lectures and laboratory sessions with "hands-on" micro computer experience include an introduction to the computer: input/output, hardware, uses of computers, data representation; applied systems: files, magnetic tape and disk, master and transaction files; data entry and control, batch processing, on-line data entry; computer programming: flowcharting, input/output, processing, decisions, arithmetic; branching.

Students will write and test five programs in the Applesoft programming language.

14.915 — MICROCOMPUTER PROGRAMMING — APPLESOFT BASIC
Unit: 1.0

This course teaches the operation of a microcomputer and its peripherals, and provides an understanding of Applesoft II BASIC, and Apple II DOS. Material includes screen control, printer operations, strings, substrings, sequential and random access files, one and two dimensional arrays and structured programming.

Prerequisite: 14.050 Data Processing — Introduction; 14.914 Introduction to Data Processing Microcomputers, or equivalent experience in programming and the BASIC language.

14.917 — FORTRAN IV — ADVANCED
Unit: 1.0

Provides continuing progress into aspects of FORTRAN IV language beyond those covered in 14.913 FORTRAN IV — Intermediate.

On successful completion, students can make a meaningful contribution to projects assigned in industry with a minimum of supervision.

The course consists of a balance between lectures, tutorials, and practical experience. Topics include the syntax and use of FORTRAN IV statements related to areas such as complex variables, constants and expressions; varying dimensions of arrays and format elements during processing of a program; processing direct access files on disk devices; the application of statements to solving both numeric and non-numeric problems; preparation and submission of programs to an available computer. Emphasis will be placed on students developing programs within their own field of endeavor rather than on assigned projects.

Prerequisite: 14.913 FORTRAN IV — Intermediate.

14.919 — BASIC — INTERACTIVE PROGRAMMING 1
Unit: 1.0

This course provides introductory programming for those who intend using the BASIC language on an interactive computer terminal system.

On successful completion, students can produce working programs for elementary business problems, and have a reasonable knowledge of the BASIC language.

Using a combination of lectures and "hands-on" experience on the BCIT Hewlett-Packard computer, students write, test and debug a series of programs that illustrate the problems encountered in the business data processing field. Topics include logical development of a program; problem analysis; flowcharting; coding and testing; debugging; validation of data; data totals; two levels of totals; print formatting; system commands; sequential disk storage.

Prerequisite: 14.050 Data Processing — Introduction, or 14.914 Introduction to Data Processing — Microcomputers.

14.920 — BASIC — INTERACTIVE PROGRAMMING 2
Unit: 1.0

Provides advanced programming for those persons who expect to work with the BASIC language on an interactive computer terminal system.

The student learns to program effectively and efficiently in BASIC on an interactive mini-computer.

The course includes lectures and practical "hands-on" experience on the BCIT Hewlett-Packard mini-computer. Topics include tape and disk storage; file processing; sequential and direct disk accessing; print formatting; arrays; BASIC instruction set; system commands; functions; subroutines; program efficiency; the interpreter concept.

Prerequisite: 14.919 BASIC — Interactive Programming 1.

14.921 — DATA COMMUNICATIONS CONCEPTS
Unit: 1.0

An introduction to the analysis and design of business and data communications systems. With the rapid changes in telecommunications, this course could be valuable to systems programmers and analysts including individuals directly or indirectly involved in the communications or computer industry.

Upon successful completion students are conversant in the area of data communications, and are capable of assisting in the analyzing and designing of data communications systems for business applications.

Topics presented include basic principles of data communications; various types of terminal equipment and their characteristics; line facilities and service offerings as provided by the common carrier companies, and the economics of these services and equipment. Also the methods and techniques necessary to develop data communications systems, and computer teleprocessing and time sharing concepts are dealt with briefly.

Prerequisite: Programming or systems design experience.

14.923 — COMPUTER PROGRAMMING — COBOL — INTRODUCTION
Unit: 1.0

For persons who want to learn business computer programming using the widely used "high-level" COBOL language. The course is also suitable for accountants or accounting students who want to understand programming in a data processing environment. The course serves as preparation for 14.924 Advanced COBOL for those who want to program in COBOL as a career.

The student learns and can apply the basic principles and practices of business computer programming, and can write simple programs in COBOL.

Lectures and lab sessions cover topics including programming methods; structured programming; documentation standards; flowcharting; report design; sequence checks; page overflow, and control breaks. COBOL topics include all language components required to write simple business report programs. Students will write, compile and run COBOL programs using BCIT's IBM computer.

Prerequisite: 14.050 Data Processing — Introduction, or 14.914 Introduction to Data Processing — Microcomputers.

14.924 — COMPUTER PROGRAMMING — COBOL — ADVANCED
Unit: 1.0

Designed for persons who want to write COBOL programs in a data processing environment using disk and tape files.

On completion, students have a good understanding of tape file organizations and the COBOL instructions associated with tape files; disk file organizations, including indexed-sequential and random access files, and the COBOL instructions associated with their use; utility programs and proper libraries; special techniques.

Topics include: efficient COBOL programming techniques; sequential and binary table look-ups; subprograms; overlay techniques; multiple disk and tape file handling; indexed sequential and direct (random) file organizations, and all the associated COBOL instructions. The disk libraries, DOS utility support, and sort programs are also taught. Students will write a number of programs which apply these techniques.

Prerequisite: 14.923 Computer Programming — COBOL Introduction, or previous programming experience in COBOL.

14.926 — COMPUTER OPERATIONS MANAGEMENT
Unit: 1.0

Intended for experienced operators, shift supervisors, or operations manager candidates, by providing theoretical and practical training in operations management.

On completion the student understands commonly used techniques and the responsibilities of computer operations management.

Lectures, discussion and practising techniques are used. Topics include standards policy; department organization and training; budgeting, esti-

mating and costing; planning, forecasting and scheduling; performance measurement; personnel evaluation; security.

Prerequisite: Practical operations experience.

14.927 — RPG II — INTRODUCTION
Unit: 1.0

This course teaches the fundamentals of programming in RPG II to people who have an understanding of data processing concepts.

It provides students with an understanding of RPG II programming concepts and techniques as applied in business batch processing. Students will learn to write programs of medium complexity, and during the course will develop, write, test and run three batch programs.

The course is a combination of lectures and practical programming. Topics include disk and card input; printed output; the basic RPG II logic cycle; control breaks; matching records; arrays; tables, and programming techniques.

Prerequisite: 14.050 Data Processing — Introduction, or 14.914 Introduction to Data Processing — Microcomputers.

14.928 — DATA BASE CONCEPTS — INTRODUCTION
Unit: 1.0

This course exposes data processing personnel to the principles involved in the evaluation, selection and implementation of data base management systems.

It introduces students to the purpose of data base systems, their functions and facilities. On completion students are familiar with the various approaches taken to data base software and the procedure for installing a data base management system.

Lectures, discussions and practising of techniques are used to explain and review the evaluation of data structures, advantages and disadvantages of data base, existing data base applications, and insights into the various data base management systems on the market. The role of the data base administrator is developed.

Prerequisite: Programming or systems design experience.

14.929 — DATA BASE CONCEPTS — ADVANCED
Unit: 1.0

Designed for persons who are involved in the logical and physical design of data bases. Information modelling, logical object analysis, and normalizing relationships are addressed in greater detail. Students are confronted with problems related to design compromises and performance optimization. They are also encouraged to investigate details of specific DBMS and present their conclusions.

Prerequisite: 14.928 Data Base Concepts — Introduction.

14.930 — MANAGING WORD PROCESSING
Unit: 1.0

Provides a foundation and definition of word processing and office systems concepts, including the evolution of these techniques, and a study of current applications in this area.

On completion the student is familiar with the terminology and concepts associated with this technology; understands the role of management and secretarial staff; understands how to analyze, select, implement and maintain word processing systems.

Topics include: defining word processing and office systems; evolution in word processing; dictation equipment evolution; office systems as a functional unit; applications in text editing; word volume surveys; statistical analysis of typing and administrative tasks; work flow case studies; office equipment selection process; introducing word processing and office systems to others; the importance of record keeping; the management role in office systems.

Note: This course is not designed to train operators of word processing equipment.

14.940 — COMPUTER PROGRAMMING — PASCAL
Unit: 1.0

Pascal is a relatively new, structured language which is rapidly gaining popularity, particularly on mini and micro computer systems. This course is intended for students who have had significant exposure to other languages and who already understand general programming principles, but who wish to add Pascal to their repertoire. The entire Pascal instruction set is covered, so that students will be ready to use the language productivity upon successful completion of the course.

On completion, the student is (a) aware of the characteristics and advantages of structured and modular programming and (b) able to read and write structured programs in Pascal.

Students are encouraged to choose programming assignments relevant to their own particular needs (subject to instructor approval). Alternatively they may select assignments provided by the instructor. Programs are entered on-line. Topics include: structured programming; modularity; basic and complex data types and structures including arrays, trees, lists and pointers; control statements and structures including recursion, procedures, and functions; and Pascal syntax diagrams.

Prerequisite: work experience in programming and/or one of the following BCIT language courses (or equivalent): 14.503, 14.902, 14.909, 14.920, 14.923

Note: Course 14.050/14.914 DATA PROCESSING-INTRODUCTION is not a sufficient prerequisite to this course.

14.945 — MICROCOMPUTER — APPLE PROJECTS
Unit: 1.0

Students learn to develop medium sized systems on microcomputers (BCIT's Apple II).

Through lectures and laboratory/workshop experience and projects the student becomes familiar with the basic programming language and instruction as applicable to Applesoft Basic. Where appropriate the features of other versions of Basic are also discussed. Topics include structures analysis, program documentation, machine code and assembler languages, program optimization, and graphics.

Prerequisite: 14.915 Microcomputer Programming — Applesoft Basic.

14.947 — MICROCOMPUTERS: EXPLORING TECHNICAL ASPECTS
Unit: 1.0

Provides the student with a theatrical perspective of the micro-computer field.

The student is exposed to the capabilities and limitations of a number of real microprocessor devices and microcomputer systems; learns to recognize the wide range of microcomputer applications, including logic design and control as well as traditional data processing applications; becomes familiar with microcomputer software — operating systems, languages, program development systems and applications software and microcomputer technology and learns to read and interpret popular and trade literature associated with the microcomputer industry.

Topics include definition of microcomputer, microprocessor; LS1 or VLS technology; micro CPU concepts; microcomputer families, popular real devices; introduction to the pin-outs of a micro-processor, data-bus, address bus, control lines, clock, memory (RAM, ROM, PROM); integration of microcomputer system, connection of memory, I/O ports, common buses (e.g. S-100), power supplies, peripherals, other hardware; hierarchy of levels of computer description: system, PMS, programming (A/L), register transfer (RT), Boolean logic, circuit, device physics; comparing some real micro systems (Apple vs North Star vs IBM PC etc.); software, operating systems, languages, compile vs interpretation, CPM, Pascal, Basic, Pilot, FORTH, C, LOGO, etc.; trends, costs, chips, manufacturers, Who's Who in Silicon Valley.

Prerequisite: Minimum of 14.050 Data Processing Introduction or 14.914 Introduction to Data Processing — Microcomputers. An understanding of the computer field from 14.902 Computer Programming — Assembler 1 or other computer language courses is highly recommended.

14.948 — MICROCOMPUTERS: BUSINESS APPLICATIONS
Unit: 1.0

Introduces the potential and use of microcomputers in the business environment. It is assumed that the students have some understanding of accounting, general business practices and a basic knowledge of data processing.

On completion the student can evaluate and select microcomputer hardware and software for use in business applications.

Lectures and laboratory sessions with "hands-on" experience cover hardware — microcomputers and peripheral devices, selection criteria, sources of information; software — operating systems, business application packages, selection and usage criteria, and sources of information. The more widely used business application packages such as: electronic spread sheets, word processing, business graphics, accounting packages (G/L, A/R, A/P, INVT) are reviewed and used in the laboratory sessions.

Prerequisite: 14.050 Data Processing — Introduction or 14.914 Introduction to Data Processing — Microcomputers; Accounting course (equivalent to BCIT's 16.140) or appropriate business experience.

14.949 — OFFICE AUTOMATION (the Office of the Future)
Unit: 1.0

Presents the latest equipment and techniques in the field of Office Automation. Emphasis is on the identification of areas for improvement, feasibility studies, cost benefit analysis, equipment/supplier selection criteria.

On completion the student can actively lead or participate in studies in the area of Office Automation and the Introduction of the Office of the Future.

Topics include information transfer, information retrieval, conferencing, personal processing, and activity management.

Prerequisite: Students require working experience in an office environment, preferably in a supervisory position. 14.050 Data Processing Introduction or 14.914 Introduction to Data Processing — Microcomputers and 14.505/605 Computer Systems — Introduction or 22.948 Method Study — Office are useful for this course.

16.140 — ACCOUNTING 1
Unit: 1.0

Permits individuals with little or no accounting background to become familiar with the techniques required in working through the full accounting cycle. It provides theoretical and practical training in basic accounting. Persons already employed, or seeking employment in accounting, will find this course helpful in broadening their employment possibilities; it also serves as preparation for 16.240 Accounting 2.

On completion the student will have an understanding of basic accounting functions; be able to maintain the financial records and prepare the financial statements of any small business; and have an appreciation for the accounting history which sets the foundation for accounting procedures.

Topics include: accounting as an information system; introduction to accounting theory; income measurement; traditional record-keeping procedures; the accounting cycle; special journals; cash; investments and receivables.

Text: "Fundamental Accounting Principles" Third Edition; Pyle, White, Larson, Zin.

16.140 — ACCOUNTING 1L
Unit: 1.5

This course enables students to start the basic course in accounting in January. It covers the equivalent of 16.140 Accounting 1 and the first six weeks of 16.240 Accounting 2 for a total of 18 weeks of the 30-week presentation. The balance of the course may be taken in either May or September (16.240 Accounting 2S). For a description of the course content see 16.140/240.

Text: "Fundamental Accounting Principles" Third Edition; Pyle, White, Larson, Zin.

16.145 — CREDIT AND COLLECTION
Unit: 1.0

Students develop a thorough understanding of the uses of credit in business today at various levels of the economy: government (a brief study only); financial institutions; manufacturing and construction; wholesaling; retailing; hotel, motel and restaurant credit; consuming.

The course is suitable for persons contemplating employment in the field who have little or no experience in credit work; persons whose knowledge of credit is specialized wishing to broaden their understanding; persons in areas such as marketing, accounting, etc., to whom a knowledge of credit would be advantageous.

There will be a detailed examination of credit granting, collection techniques, and credit philosophy in all levels of business. On completion the student will be competent to assist the credit manager of a large business in any area of the subject.

Topics include: determining credit risk; credit instruments and collateral security; types of consumer credit and credit cards; sources of consumer credit information; mercantile credit terms and limits; sources of mercantile credit information; collections; credit and collection letters; credit department management; credit manuals; sales department cooperation; credit history, past and present.

Text: "Credit Management in Canada" First Edition, Jackson: Mapleton.

16.240 — ACCOUNTING 2
Unit: 1.5

Individuals with a basic course in accounting can expand their practical and theoretical training in financial and management accounting techniques. Persons already employed or seeking employment in accounting will find this course helpful in broadening their employment possibilities. It also serves as preparation for 16.347/447 Financial Accounting 1 and 2, and 16.341/441 Cost Accounting 1 and 2.

The student will develop an appreciation of a number of financial and management accounting techniques; qualify to prepare and interpret detailed financial statements and management reports; and be competent to converse with and understand the requirements of professional accounts.

Lectures, laboratories and a practice set will provide an interesting course. Topics include inventory; long-lived assets; liabilities; forms of business organizations; cash-flow and working capital analysis; manufacturing accounting; management accounting; consolidated statements; analysis of financial statements; price level changes.

Text: "Fundamental Accounting Principles" Third Edition; Pyle, White, Larson, Zin.

Prerequisite: 16.140 Accounting 1, or permission of the Financial Management Coordinator.

16.240 — ACCOUNTING 2S
Unit: 1.0

This is the follow-up course to 16.140 Accounting 1L and enabling students to complete the last 12 weeks of the basic accounting courses. For a description of course content see 16.240 Accounting 2.

Text: "Fundamental Accounting Principles" Third Edition; Pyle, White, Larson, Zin.

16.341 — COST ACCOUNTING 1
Unit: 1.0

This course will enable the student with some background in introductory accounting to understand the basic tools of management planning and control. Problems related to inventory valuation and income determination in manufacturing enterprises will also be introduced.

The student will learn to apply the learned techniques to problem areas in his own employment situation.

16.341 is a prerequisite of 16.441 Cost Accounting 2 or its equivalent.

The course emphasizes the role of the management accountant, cost terms and purposes, cost-volume-profit relationships, job order accounting, budgeting, responsibility accounting and standard costs.

Text: "Cost Accounting: A Managerial Emphasis" Fifth Edition; Hornaven.

Prerequisite: 16.240 Accounting 2 or its equivalent, or permission of the Financial Management Coordinator if claiming equivalent experience.

16.341 — COST ACCOUNTING 1L
Unit: 1.5

Designed to permit students to start Cost Accounting in January, 16.341 is equivalent to 16.341 and the first 6 weeks of 16.441 for a total of 18 weeks of the 30-week presentation. The remaining 12 weeks can then be completed either by taking 16.441S over 6 weeks, 2 nights per week commencing in May, or over 12 weeks commencing in September (16.441 Cost Accounting 2S).

For a description of the course content and prerequisite see 16.341 and 16.441.

Text: "Cost Accounting: A Managerial Emphasis" Fifth Edition; Hornaven.

16.346 — AUDITING 1
Unit: 1.0

Equips students with general knowledge of auditing principles, specific techniques in analytical auditing, and some asset classifications.

It gives students an understanding of the meaning and purpose of the audit function, and introduces them to techniques and procedures. The successful student will be equipped to move on to Auditing 2.

Topics for lectures and discussions include: history; professional ethics; internal control; auditing EDP systems; gathering evidence; audit work papers.

Prerequisite: 16.240 Accounting 2, or equivalent, or permission of the Financial Management Coordinator.

16.347 — FINANCIAL ACCOUNTING 1
Unit: 1.0

The course provides students who have completed the study of basic accounting with a more advanced course, to enrich and broaden their understanding of the accounting process and its underlying theory. Completion of this course and 16.447 Financial Accounting 2 prepares them for more responsible employment in the accounting field and will enable them to determine their aptitude for more advanced study of accounting as a career objective.

Lectures, discussion, and practical work will cover the development of financial information for proper presentation on company financial statements, for external circulation. This segment of financial accounting specifically covers a review of the accounting process from a more analytical standpoint; an overall view of the income statement and balance sheet; and a study of cost, valuation, presentation and income measurement problems, associated with current assets and current liabilities.

Text: "Intermediate Accounting" Third Edition; Welsch, Zlatkovich, Harrison, Nelson and Zin.

Prerequisite: 16.140 Accounting 1 and 16.240 Accounting 2, or permission of the Financial Management Coordinator if claiming equivalent experience.

16.347 — FINANCIAL ACCOUNTING 1L
Unit: 1.5

Designed to permit students to start Financial Accounting in January. It covers the equivalent of 16.347 and the first 6 weeks of 16.447 for a total of 18 weeks of the 30-week presentation. The remaining 12 weeks can be completed either by taking 16.447 over 6 weeks on a 2 nights per week basis commencing in May, or over 12 weeks commencing in September (16.447 Financial Accounting 2S).

For course description and prerequisites see 16.347 and 16.447.

Text: "Intermediate Accounting" Third Edition; Welsch, Zlatkovich, Harrison, Nelson and Zin.

16.361 — BUSINESS FINANCE 1
Unit: 1.0

To familiarize people with little or no knowledge of financial management with the various methods of optimizing the economic position of a firm.

It trains people in business finance, as members of middle management, to make the best decisions on the financing of a firm.

Lectures and discussions are used to consider control and financial management of the business firm, a study of profit planning, cash and capital budgeting, and inventory control.

Text: "Essentials of Canadian Managerial Finance"; Weston, Brigham, Halpern.

Prerequisite: 16.140/240 Accounting 1 and 2. A knowledge of economics.

16.441 — COST ACCOUNTING 2
Unit: 1.5

Enables the student who has completed 16.341, has considerable practical cost accounting experience, or has had accounting training through a recognized professional accounting organization, to understand accounting techniques which will assist management in planning control, income determination, and decision making.

The student learns to apply these diversified management accounting techniques to their particular area of employment at the management, cost accounting or audit level within the business community.

The course emphasizes direct costing; relevant costs; cost allocation; capital budgeting; inventory planning and valuation; joint and by-product costs; process costing; payroll; factory ledgers and decentralization; and transfer pricing.

Text: "Cost Accounting: A Managerial Emphasis" Fifth Edition; Hornaven.

Prerequisite: 16.341 Cost Accounting 1, or permission of the Financial Management Coordinator if claiming equivalent experience.

16.441 — COST ACCOUNTING 2S
Unit: 1.0

As a follow-up course to 16.341 Cost Accounting 1L, 16.441 completes the last portion of the cost accounting courses.

For a description of the course content and prerequisite see 16.441 Cost Accounting 2.

Text: "Cost Accounting: A Managerial Emphasis" Fifth Edition; Hornaven.

16.446 — AUDITING 2
Unit: 1.5

Building on 16.346 Auditing 1, 16.446 equips students with specialized skills in all areas of auditing and strengthens their knowledge of accounting procedures through critical assessment.

This should prove helpful in entering employment in such fields as public accounting, internal auditing or business management.

The student will come to understand general auditing principles and specific audit procedures, and learn to critically assess accounting procedures.

Lectures and discussions cover auditing, including assets, liabilities, owner's equity, revenues, cost, expenses, financial statements and audit reports. A short audit case will be undertaken.

Prerequisite: 16.346 Auditing 1 or equivalent, or permission of the Financial Management Coordinator.

16.447 — FINANCIAL ACCOUNTING 2
Unit: 1.5

Enables students to complete the study of accounting at the intermediate level, which is the necessary background for employment in more responsible accounting positions.

Students develop sufficient accounting knowledge to perform competently in an intermediate level financial accounting position, and to be exempt (subject to achieving a prescribed mark) from the equivalent course offered by certain professional accounting bodies, should the student intend to continue studies towards a professional designation.

Lectures, discussions, and practical work on weekly assignments carry on from 16.347.

Topics include cost, valuation, presentation, income measurement problems associated with long-term assets and liabilities (where appropriate), shareholders' equity accounts, income tax allocation, statement of charts in financial position, statements from incomplete data, accounting changes, and price-level and fair-value accounting.

Text: "Intermediate Accounting" Third Edition; Welsch, Zlatkovich, Harrison, Nelson and Zin.

Prerequisite: 16.347 Financial Accounting 1, or permission of the Financial Management Coordinator if claiming equivalent experience.

16.447 — FINANCIAL ACCOUNTING 2S
Unit: 1.0

The follow-up course to 16.347 Financial Accounting 1L, 16.447 enables students to complete the last portion of the financial accounting courses.

For a description of the course content and prerequisite see 16.447 Financial Accounting 2.

Text: "Intermediate Accounting" Third Edition, Welsch, Zlatkovich, Harrison, Nelson and Zin.

16.461 — BUSINESS FINANCE 2
Unit: 1.5

Instructs students in the various methods of obtaining capital to finance a firm.

The course lecture and discussion topics include the cost of capital; short, medium and long term financing leasing; refinancing; security analysis; the Canadian capital and money markets and pension portfolios as they affect business decisions of the Canadian firm.

Prerequisite: 16.361 Business Finance 1.

16.904 — ACCOUNTING FOR THE MANAGER
Unit: 1.0

Designed for the manager wanting to understand basic accounting principles without taking a formal introductory accounting course. It also serves as a refresher for those who have taken an introductory course,

or for persons who wish to know more about the accounting functions as a vocation.

The student develops a good understanding of the accounting function and the services it can provide to the manager, and learns how to interpret statements, reports, budgets, etc. in managerial decision making.

Through lectures and problem solving labs the student is exposed to the accounting cycle, inventory valuation and control, depreciation methods, credit control, budgeting and analysis of financial statements.

Text: "Financial Accounting" Third Edition; Meigs, Meigs.

16.906 — FINANCE FOR THE MANAGER
Unit: 1.0

For the manager or entrepreneur who wants an understanding of the basic principles of business finance without taking formal study in finance or the usual preparatory courses for formal study.

The student develops a working understanding of business finance, cash flow management, and financial planning. Finance in large and small businesses will be explored through lectures, labs, case studies, and guest lecturers.

16.911 — SECURITY ANALYSIS
Unit: 1.0

Persons with little or no knowledge of security markets learn how to invest more successfully in bonds, debentures, preferred and common shares.

The objective is to impart to students the knowledge necessary to analyze industries and companies with a view to building and managing portfolios for the individual.

Lecture and lab topics include sources of information, financial analysis, technical analysis, and taxation.

16.912 — TAXATION 1
Unit: 1.0

Individuals with little or no background in income tax become familiar with the basics of Canadian income tax. Of particular interest to those who operate their own businesses, those having various sources of income, or those planning a career in the accounting field. The course constitutes the first half of taxation, with 16.913 Taxation 2 completing it.

The student develops a general understanding of Canadian income tax law as it applies to sources of revenue.

Lectures, discussions, assigned readings and technical problems cover the areas of tax information sources, residency, classes of taxpayers, employment income, business income, investment income, capital cost allowance, and capital gain rules.

Text: "Tax Principles to Remember"; CICA. "Income Tax Act"; CCH.

Prerequisite: 16.240 Accounting 2, or its equivalent, or permission of the Financial Management Coordinator if claiming equivalent experience. Very proficient oral and written communication skills essential.

16.913 — TAXATION 2
Unit: 1.0

Permits students who have completed 16.912 Taxation 1 to continue their study of Canadian income tax.

Students develop a strong basic knowledge of the subject and become aware of the complexity and problem areas involved in tax planning.

Lectures, discussions, assigned readings and technical problems cover the areas of individuals (including proprietors and partners), corporations and trusts, corporate surplus distributions, international income, appeal procedures, tax planning and tax avoidance versus tax evasion.

Text: "Tax Principles to Remember"; CICA. "Income Tax Act"; CCH.

Prerequisite: 16.912 Taxation 1.

16.914 — PERSONAL FINANCIAL PLANNING
Unit: 1.0

Designed to introduce students to a variety of savings and investment options used to develop a sound program to attain term financial goals.

At the conclusion the student should be in a position to follow an investment program tailored to his needs.

Lectures and discussions provide an interesting course for people of all ages. Topics include money management, life insurance, investments and portfolio distribution, home ownership, wills and estates.

16.918 — PRINCIPLES OF ACCOUNTING (Accelerated)
Unit: 2.0

As the equivalent of 16.140/240, 16.918 enables students to take a full introduction-to-accounting in 14 weeks.

Prospective students are cautioned against enrolling in this course unless they have a strong background in accounting or are prepared to spend a minimum of 10 hours per week out of class working on the course material.

For a description of the course content see 16.140 and 16.240.

Text: "Fundamental Accounting Principles" Third Edition; Pyle, White, Larson, Zin.

16.926 — FINANCIAL ACCOUNTING 1 AND 2
Unit: 2.5

As the equivalent to 16.347/447, 16.926 enables students to take the equivalent of both financial accounting courses (16.347 and 16.447) in 15 weeks.

Prospective students are cautioned against enrolling in the course unless they have a reasonable background in financial accounting, and are prepared to spend a minimum of 12 hours per week out of class working on the course material.

For a description of the course content and prerequisite see 16.347 and 16.447.

Text: "Intermediate Accounting" Third Edition; Welsch, Zlatkovich, Harrison, Nelson and Zin.

Prerequisite: 16.140/240 Accounting 1 & 2

18.313 — FOOD AND BEVERAGE COST CONTROL
Unit: 1.0

Enables persons interested in the food service industry field to understand internal control procedures and information systems. The course deals particularly with interpretation of data obtained through such procedures/systems and the making of appropriate management decisions. Participants should have an aptitude for basic arithmetical calculations.

Students learn the fundamentals of internal control and information systems for food and beverage operations of all types.

The following are the major control points that will be covered: sales; ordering; purchasing and receiving; storeroom and inventory; production (costing). Lectures, problem solving exercises, and some take-home assignments are used.

18.331 — INTRODUCTION TO TOURISM
Unit: 1.0

An introduction to the travel and tourism industry for persons who are engaged in, or who anticipate employment in this industry.

Students will learn to:

a) describe the components of the tourism industry, their functions and interrelationships;

b) discuss the major organizations within tourism and the jobs and careers available within them;

c) explore selected employment areas with emphasis on entry-level positions: travel agent, tour wholesaler, passenger agent, sales and reservations;

d) describe Tourism British Columbia's role and organization.

Topics are covered through lectures, films, guest speakers, case studies and presentations. Content includes components of the industry; the social and economic effects of tourism; marketing; tourism B.C.; tour operators; travel agents.

18.418 — NIGHT AUDIT PROCEDURES
Unit: 0.5

An advanced course preparing persons for employment as night audit clerks in the hotel and motel industry.

Students learn to understand and perform standard night audit procedures using an NCR 4200 system with some instruction in the use of electronic, memory-capable equipment.

The course is problem-oriented. Practical exercises are designed to simulate typical hotel/motel situations. Classes of 5 students allow for close instructor/student contact.

To create a realistic training situation, the course is scheduled as a 15 hour weekend workshop. All students attend a Friday evening session followed by full Saturday and Sunday sessions.

Prerequisite: 18.925 Front Office Posting Practicum, or front desk experience using an NCR 4200 machine plus an aptitude in working with numbers.

18.422 — MENU PLANNING
Unit: 1.0

Enables persons with limited experience in the food service industry to gain theoretical and practical experience in the planning and design of menus.

Students learn the factors that influence the make-up of a menu, such as types of market served, price structure, staffing, physical plant limitations, storage, availability of foods and costing; learn to analyze the above data and compose suitable menus; and come to understand layout, color, print-type, and manufacture of menus for use in advising management.

Lectures and discussions introduce new material, followed by practical exercises and some take-home assignments, allowing students to apply theory to practice.

18.900 — CAREER EXPLORATION FOR THE HOSPITALITY INDUSTRY*
Unit: 0.5

Provides basic information on the career opportunities in hotels, motels, food service operations, resorts and related industries; training opportunities in B.C. (full-time and part-time); entry requirements into the job market; and employment and advancement opportunities.

Students learn to define the job market for the hospitality industry in terms of training and opportunities for entry and advancement; to discuss specific job functions and working conditions for hospitality industry positions; and to prepare a systematic plan for their own career decisions.

The sessions feature a lively mixture of mini-lectures, audio visual presentations, guest instructors from industry, etc. Individual projects and group discussions will add to the information gathering process.

The course is strongly recommended for people with little or no hospitality industry experience, and for high school students intent on further training in hospitality and tourism or interested in entering the industry directly.

18.901 INTRODUCTION TO BARTENDING
Unit: 0.5

An introductory session in the fundamentals of bartending for those wishing to work in the restaurant industry, or wishing to upgrade in the field of bartending.

The student develops a good understanding of the mixing of drinks and their recipes. Coupled with a course in waiter/waitress training or practical experience, the student should be capable of working in an operation selling alcoholic beverages.

The course includes practical experience behind a cocktail lounge bar with emphasis on mixing, glassware, service and knowledge of wines, spirits, beers and liqueurs.

Please note: Course is given on demand only. A variety of dates is available. Class size is limited to 8.

Text: Bar Management Training Manual

18.902 — PROPERTY INVESTMENT FOR HOSPITALITY OPERATIONS
Unit: 1.0

Designed for mature students intending to establish or expand their own operation or one they will manage.

Basic accounting, marketing, real estate, and credit management backgrounds would be an asset to the prospective student. This course would be of interest to persons with entrepreneurial pursuits, owners/managers of present operations and speculators/investors.

The student will develop a fundamental knowledge of the following topics: benefits of buy, sell, rent or lease; problems of zoning with regional authorities; site evaluation; site selection, what to look for in buying an existing business; leasing; cashing in on the franchise boom; foreclosure and bankruptcy; putting your business up for sale; analyzing financial statements; financing the building; interim financing; legal, contractual obligations.

Content will be presented using lecturers with specialized knowledge, handout materials, current examples, discussions with operators and class participants, and practical assignments. Students will develop their own action kit and check lists.

Prerequisite: 18.908, Hospitality Management Accounting, would be helpful.

18.905 — INTRODUCTION TO FOOD AND BEVERAGE MANAGEMENT
Unit: 1.0

Directed to persons intending to enter the food service industry with management/ownership as a goal.

Students are challenged to consider the many facets and multiple pitfalls of this industry.

The student will develop a fundamental understanding of the basic organization of a food enterprise or department; the theory and classification of foods, equipment, and supplies needed and purveyors available; basic elements of esthetics and design; the importance of menu, location, plant layout; basic cost controls; setting of objectives; sanitation, and storage principles.

Lectures, case studies, small group discussions, films and problem solving will be included. A number of take home assignments will be given.

18.908 — HOSPITALITY MANAGEMENT ACCOUNTING
Unit: 1.0

Persons with some background in accounting are familiarized with the specific principles and procedures of hospitality management accounting. An understanding of general accounting principles is necessary to benefit fully from the course. If you are unsure of your skill level, contact the technology coordinator prior to registration.

Students develop an understanding of hotel and restaurant departmental income statements and balance sheets enabling them to interpret and analyze the results. They learn the use of management tools such as the break-even technique, budgeting and investing.

The course is problem-oriented. Brief lectures are used to introduce the different concepts, followed by discussion and problem solving exercises directly related to present-day hospitality industry accounting practices.

Prerequisite: 18.313, Food and Beverage Cost Control, would be helpful.

18.909 — RESTAURANT PLANNING
Unit: 1.0

Students gain theoretical and simulated practical experience in planning a food service operation from the initial concept to the eventual opening.

This course is primarily for persons who expect to be involved in the planning of a new operation or alteration to existing facilities.

Participants come to understand and are able to initiate a thorough planning procedure for the establishment of a restaurant or similar food service operation.

Participants work in groups for assigned in-class projects. Through small classes and close consultation with the instructor, active participation of all participants will be possible and expected. Topics include development of concept, styles of management, location, menu development, staffing, equipment, buildings, design and functional layout, financing, promotion and operational planning.

Prerequisite: Experience in the food service industry would be an asset.

18.911 — PROFITABLE RESTAURANT OPERATION
Unit: 1.0

Persons involved in the restaurant business can question and analyze their particular cost problems and solutions. This detailed course is directed at persons who wish to reduce restaurant operating costs.

Success can be determined weekly as the participant institutes suggestions for cost reduction within his operation; the positive effect can be seen immediately.

Brief lectures on proven cost-saving techniques are followed by group discussion and on-site evaluation. Cost areas covered include management, product, service, staff, utilities and advertising.

Prerequisite: Experience in food service industry at supervisory level.

18.912 — FINANCIAL MANAGEMENT FOR THE HOSPITALITY INDUSTRY
Unit: 1.0

Presents practical illustrations for financial decision making. This is the senior course in the finance/accounting area that has direct application to the hotel food service industry.

Students learn how to develop financial goals for a company; obtain financing to help meet objectives; prepare cash budgets; determine rates of financial return; calculate costs of stock; develop a plan for a feasability study.

The course is problem solving in nature, with the instructor available for consultation and assistance (with practical applications). Brief lectures (with some class discussions) acquaint students with different concepts.

Prerequisite: 18.908 Hospitality Management Accounting or 16.140 Accounting 1 or sufficient previous accounting experience.

18.913 — UNDERSTANDING WINES AND SPIRITS
Unit: 1.0

Of interest to those working and dining in restaurants this course examines the origins, production, marketing, sensory evaluation, and service of domestic and imported wines with the focus on "wine in restaurants".

The student learns to describe the characteristics of popular wines and spirits; describe the growing and manufacturing processes of wines; list the requirements for storing and handling wines; distinguish basic types of wine using acceptable tasting procedure; conduct staff training sessions on the merchandising aspects of wines in restaurants; and identify elements of spirits and liqueurs.

Topics covered, using lectures, film and slide presentations, discussions, field trip, guest presentations, samplings and student projects, include: the wine growing process; wine making; geographical and grape differences; government regulations; label terminology; storage and selling techniques; serving procedure; staff training.

18.918 — DOMESTIC AIR
Unit: 1.0

Working with the official North American Passenger Tariff and the official Airline Guide, students receive instruction in the fundamentals of domestic (within Canada and the U.S.A.) passenger air travel. The course includes the construction of normal and special fares, terminology, schedules, ticketing procedures, etc., related to today's world of travel. Approximately 3-5 hours per week of home study is required.

Note: A deposit will be required on the second night of class for tariff and schedule books. Fifty per cent is refundable upon return of the materials to the course instructor. On no account can the tariff materials be retained by the student.

18.919 — INTERNATIONAL AIR 1
Unit: 1.0

Provides instruction in Transatlantic and Transpacific passenger rules, regulations and fares. It familiarizes students with the terminology and fundamentals of Transatlantic and Transpacific fare construction and enables them, under supervision, to handle all facets of these air travel sales for travel agencies and carriers' ticket offices.

Topics include the Air Tariff Book 1 general rules; fare construction rules (fare construction units, the mileage system, HIPs, backhauls, etc.); and, special rules for fare types which are generally saleable from Canada and/or the U.S.A. Lectures and prescribed itineraries will be used. Approximately 2-6 hours per week of home study is required.

Ticketing is limited to discussions of specific ticket entries.

Note: A deposit will be required on the first night of classes for tariff and schedule books. Fifty per cent is refundable upon return of the materials to the course instructor. On no account may the tariff materials be retained by the student.

Prerequisite: Previous direct sales experience in the industry, or completion of 18.918 Domestic Air.

18.920 — AUTOMATED RESERVATIONS
Unit: 1.0

Designed for persons who have completed the Domestic or International Air courses, and/or those who have had at least one year of experience in the air travel industry and are familiar with city codes, terminology, etc. Although not mandatory, basic typing skills are beneficial. A pre-course booklet is supplied to each student to provide some basic knowledge of the computer system.

Students learn to activate a reservations computer terminal as installed in many travel agency offices, and to perform all functions relative to booking airline reservations, tours, hotels, and/or car rentals.

This course consists of "hands-on" training in the use of a CRT terminal. The building, cueing, changing and cancelling of PNRs (Passenger Name Records), automated hotel booking, car rental and tour reservations, and the relevant transactions are explained and practised.

Enrolment is limited to 8 students. Taught in downtown Vancouver.

18.921 — INTERNATIONAL AIR 2
Unit: 1.0

Provides detailed instruction in passenger rules, regulations and fares on a world-wide basis. This course is designed for persons having completed 18.919 International Air 1 and/or currently involved and experienced in direct passenger sales.

It familiarizes students with the terminology and fundamentals of fare construction and world-wide currency regulations as related to PTAs (fare and equivalency AMT paid procedures), rerouting (fares, additional collections/refunds).

Topics include air tariffs, lectures and prescribed itineraries, etc., illustrating fare construction and rerouting examples for fare types which are generally saleable to, from or via Canada. Approximately 3-6 hours per week of home study is required.

Ticketing and fare construction to/from TC1 is extremely limited, and students must have a sound knowledge in these areas before enrolling in this course.

Note: A deposit will be required on the first night of classes for tariff and schedule books. Fifty per cent is refundable upon return of the materials to the course instructor. On no account may the tariff materials be retained by the student.

Prerequisite: Completion of 18.919 International Air 1 or related work experience.

18.922 — TOURISM GEOGRAPHY
Unit: 1.0

Designed for persons wishing to enter the travel and tourism industry as travel counsellors, travel agents or ticket agents, and for those who are interested in travel destinations.

Students study the countries of the world where the tourism industry plays a significant part in the economy, and develop a good knowledge of tourism geography.

Films, guest speakers, student participation and presentations, and maps cover the following areas: geographic location; tourism regions; climate; population; culture; language; natural and man-made tourist resources; currency, and transportation. Major tourism destinations to be studied will be selected from North, Central and South America; Europe, Asia; the South Pacific and the Far East.

18.924 — FRONT OFFICE PROCEDURES
Unit: 1.0

Provides theoretical and simulated practical training in most aspects of front office operation, for persons with little or no hotel/motel experience. Persons employed in hotels/motels will find this course helpful in broadening their employment opportunities. It also serves as preparation for courses 18.925 Front Office Posting Practicum and 18.418 Night Audit Procedures.

Students become familiar with the specific functions of the front office department, and learn to perform the duties of a front desk clerk in a hotel or motel (after a brief period of on the job training).

Topics studied in lectures, discussions, and simulated practice sessions include: who does what in a hotel or motel; personal requirements of a front desk clerk; reservation systems; credit procedures; dealing with guests, management and fellow employees; effective sales techniques; cash and credit handling; handling emergencies; career opportunities and steps to gain employment as desk clerk; communication skills.

This class is limited to 20 students.

18.925 — FRONT OFFICE POSTING PRACTICUM
Unit: 0.5

A 10 hour, weekend seminar, designed to give those interested in working at the "front desk" of a hotel or motel a complete understanding and knowledge of how to operate the NCR 4200 billing machine and new electronic equipment.

Students learn to handle all procedures and transactions relating to the machines, i.e. posting debits and credits to guest accounts; handle transfers to city ledger; correct errors; cash reports; etc.

Lectures, handouts, exercises and practical exposure to various equipment are included.

This class is limited to 5 participants and is available by request.

Prerequisite: 18.924 Front Office Procedures or desk clerk experience is recommended.

18.926 — DINING ROOM SERVICE
Unit: 1.0

Introduces persons with limited experience in restaurants to the fundamentals, techniques and prerequisites of successfully operating a quality dining room.

Students learn how to operate a first class dining room. With some practical experience in the field the course allows students to assume relevant responsibilities at the junior management level, and gives them a better understanding of the supervisory role.

Mini-lectures, lab sessions, demonstrations and discussions cover such topics as staff supervision; supervisory responsibilities; hiring of personnel; menu terminology; salesmanship; equipment knowledge; table settings and arrangement; proper service techniques; staff scheduling and safety; and fundamentals of table-side cooking. A nominal lab fee may be required.

18.927 — CUSTOMER RELATIONS AND COMMUNICATION SKILLS
Unit: 1.0

A course for those in contact with the public or seeking this type of employment: travel clerks, ticket agents, restaurant staff, desk clerks and others serving the travelling public. Also an ideal course for people re-entering the work force in service industries.

Students learn to speak confidently and clearly to customers; use good telephone techniques; deal effectively with a variety of unusual situations; demonstrate and practice good communication skills (attending, listening, responding); and analyze their personal grooming and professional appearance.

Mini-lectures, demonstrations by the instructor, practice by students, evaluation, role-playing, student presentations, group discussions and guest speakers are used in this course.

18.928 — AUTOMATED TICKETING
Unit: 0.5

A two weekend course for persons fully conversant with the operation of reservations computer terminals as installed in many travel agency offices, and/or those who have successfully completed 18.920 Automated Reservations.

Students learn to activate a ticket printer linked to a reservations computer terminal and to perform all functions relative to producing a computer generated ticket.

The course consists of "hands-on" training in producing computer generated tickets, both computer and manually priced. All relevant transactions are explained, and instruction in loading, changing and minor trouble-shooting of a ticket printer is given.

The course is held in the downtown area of Vancouver and is scheduled on demand.

Prerequisite: The student should be fully conversant with IATA ticketing procedures (Domestic Air and International Air), and/or have at least two years in the industry working international itineraries.

18.930 — BEVERAGE MANAGEMENT — LOUNGES AND PUBS
Unit: 1.0

Designed for prospective Managers, owners and operators of beverage sales operations, with the intent to familiarize the student with day-to-day operations. It develops and enhances managerial skills in such locations as Neighbourhood Pubs, Cocktail Lounges in Hotels, Restaurants, and Clubs.

The course focuses primarily on principles of management, internal controls, supervision of employees and their functions as related to drink production and service, inventory control procedures, liquor costing and sales controls, determining guidelines for purchasing of accessories, equipment, and supplies, cocktail lists, and in-house merchandising ideas.

Purchase of a Bar Management training manual would be an asset to the student for this course.

18.935 — MARKETING CONCEPTS — HOSPITALITY AND TOURISM
Unit: 1.0

An introduction to techniques of marketing. Experience in marketing in the Hospitality or Tourism Industry is not essential, although students with some background in these areas, or in accounting, economics or statistics, would find it an asset.

The course engages the student in discovering the involvement of marketing within the hospitality industry.

Topics include marketing theory and how marketing works; principles of marketing; product cycle; the gathering and application of research; interpretation of trends and forecasting; and positioning your package for consumer acceptance. Using lectures and case studies students will be expected to propose a full marketing plan.

18.936 — DEVELOPING AN EFFECTIVE SALES PROGRAM — HOSPITALITY AND TOURISM
Unit: 1.0

An introduction to sales promotion.

Students are expected to understand basic marketing principles and, with guidance, learn to quickly evaluate a case study and develop a realistic sales program strategy.

Lectures, some group work, and individual case study assignments cover the major topics of applying marketing objectives in the production of sales material, advertising copy and layout; evaluation of media productions; developing an annual promotional budget; consideration of personal selling and actual practice in making sales calls, which will be categorized.

18.940 — TOUR MANAGING, ESCORTING AND GUIDING
Unit: 0.5

For those who enjoy close contact with tourists, and who wish to become professional Tour Managers or Local "Sight-seeing" Guides this very practical course concentrates on how to supervise and conduct an escorted tour (domestic and/or international), and on the role and responsibilities of the Tour Manager and the Local Guide.

Course content includes mini-lectures, demonstrations by the instructor, practise by students, and guest speakers. Topics include: meeting, escorting and looking after tour participants; dealing with emergencies, and tourists' complaints; sightseeing procedure; care of baggage; airport/hotel procedure; personal demeanour and dress; etc.

18.941 — TOURISM DESTINATIONAL STUDY: EUROPE
Unit: 0.5

Acquaints students with historical and practical tourist-related aspects of Continental Europe and Great Britain. Practical hints for the travel counsellor and traveller familiarize students with tourism conditions in these countries. The instructor is well versed in the countries to be studied, as a professional world traveller.

Using slides, 16 mm film, mini-lectures and class discussion the course covers the following countries: England, Germany, France, the Netherlands, Italy, Spain, Ireland, Scotland, Austria and Switzerland. Subject areas include historical and geographical knowledge of the areas; culture, dress and language of the people; social and family traditions; economic conditions and currencies; climate; foods; artifacts and souvenirs; important places to see; industry; educational standards; etc.

Some research and home study required.

18.942 — TOURISM DESTINATIONAL STUDY: AFRICA
Unit: 0.5

Acquaints students with historical and practical tourist-related aspects of the African continent. Practical hints for the travel counsellor and traveller alike, familiarize students with the sights, sounds, and living styles in these countries. The instructor is well versed in the countries to be studied, as a professional world traveller.

Countries to be studied include: Kenya, Nigeria, Zaire, South Africa, Zambia, Rhodesia, Tanzania, the Sudan, Algeria, Saudi Arabia, and others. Topics include historical and geographical knowledge of the area; dress, culture and language of the people; social and family milieu; economic conditions and currencies; climate; foods; artifacts and souvenirs; industry; educational standards; etc; as well as places of particular interest to the visitor.

Slides, 16 mm film, lectures and class discussions are used and some research and home study required.

18.943 — TOURISM DESTINATIONAL STUDY: THE PACIFIC RIM
Unit: 0.5

Acquaints students with historical and practical aspects of Pacific Rim countries as seen through the eyes of a tourist. Practical hints will help both the traveller and travel counsellor. The instructor is well versed in the countries to be studied, both as a professional travel consultant and a world traveller.

The course examines the background and current conditions in Japan, Thailand, Malayasia, Hong Kong, Indonesia and the Phillipines. Topics include historical and geographical knowledge of the areas; culture, dress and language of the people; social and family milieu; economic conditions and currencies; climate; foods; artifacts and souvenirs; industry; educational standards; etc., as well as places of particular interest to the visitor.

Slides, 16 mm film, mini-lectures and class discussion illustrate the course. Some research and home study required.

18.944 — TOURISM DESTINATIONAL STUDY: SOUTH PACIFIC
Unit: 0.5

Acquaints students with the historical and practical tourist-related aspects of the South Pacific now well-frequented by Western Canadians. Practical hints for the travel counsellor and traveller, familiarize students with the sights, sounds and living conditions in these lands. The instructor is well versed in the countries to be studied, as a professional consultant and as a world traveller.

The course covers the countries and/or areas of Hawaii, Fiji, Tahiti, the Samoan Islands, New Zealand and Australia. Subject areas include historical and geographical knowledge of the areas; culture, dress and language of the people; social and family milieu; economic conditions and currencies; climate; foods; artifacts and souvenirs; industry; educational standards; etc., as well as places of particular interest to the visitor.

Slides, 16 mm film, mini-lectures and some class discussion illustrate the course. Some research and home study required.

18.950 — COMMUNICATION IN JAPANESE (from a Tourism and Hospitality perspective)
Unit: 1.0

Acquaints English-speaking persons with the basic conversational language skills necessary to communicate with persons from a Japanese-speaking background. Persons employed in restaurants, hotels and motels, travel offices, information, customs and government offices will greatly benefit from the course. In addition, persons intending to travel to Japan will find the course informative and beneficial.

Topics include cultural differences; geographical and historical background; language technique; Hirigana in Roman lettering; foods, clothes, souvenirs and items of general interest for Japanese travellers; currency and exchange; dealing with tour guides and limited-English translators; the importance of this language group to tourism in Canada and British Columbia.

Practical subjects include basic vocabulary and pronunciation skills; sentence structuring; making initial approaches conversationally; and basic reading, spelling and pronunciation from written matter.

Slides, films, discussion seminars are used, however, the major emphasis is on in-class practise of Japanese conversation and pronunciation in small groups.

Prerequisite: No previous knowledge of Japanese is necessary.

18.951 — COMMUNICATION IN FRENCH (from a Tourism and Hospitality perspective)
Unit: 1.0

Acquaints English-speaking persons with the basic conversational language skills necessary to communicate with persons from a French-speaking background. Persons employed in restaurants, information, government and customs offices will greatly benefit from the course.

Topics include cultural differences; geographical and historical background; techniques of speaking the language; how to deal with tour guides and limited-English translators; importance of this language group to tourism in Canada and British Columbia.

Practical subjects include basic vocabulary and pronunciation; sentence structuring; basic reading, spelling and pronunciation from written matter; and making initial approaches conversationally.

Slides, films, discussion seminars are used, however, the major emphasis is on in-class practise of French conversation and pronunciation.

Prerequisite: No previous knowledge of French is required.

18.952 — COMMUNICATION IN SPANISH (from a Tourism and Hospitality perspective)
Unit: 1.0

Acquaints English-speaking persons with the basic conversational language skills necessary to communicate with persons from a Spanish-speaking background. Persons employed in restaurants, hotels and motels, travel offices, information, customs and government offices will greatly benefit from the course. In addition, persons intending to travel to Spanish-speaking areas will find the course informative and beneficial.

Topics include cultural differences; geographical and historical background; techniques of speaking the language; how to deal with tour guides and limited-English translators; importance of this language group to tourism in Canada and British Columbia; food; souvenirs, and currency differences related to Spanish-speaking tourists.

Practical subjects include basic vocabulary and pronunciations; sentence structuring; making initial approaches conversationally; basic reading, spelling and pronunciation from written matter.

Slides, film, and discussion seminars are used, however, the major emphasis is on in-class practise of Spanish conversation and pronunciation, in small groups.

Prerequisite: No previous knowledge of Spanish is necessary.

18.953 — COMMUNICATION IN GERMAN (from a Tourism and Hospitality perspective)
Unit: 1.0

Acquaints English-speaking persons with the basic conversational language skills necessary to communicate with persons from a German-speaking background. Persons employed in restaurants, hotels and motels, travel offices, information, customs and government offices will greatly benefit from the course. In addition, persons intending to travel to German-speaking areas will find the course informative and beneficial.

Topics include cultural differences, geographical and historical background; techniques of speaking the language, how to deal with tour guides and limited-English translators, importance of this language group to tourism in Canada and British Columbia, food, souvenirs, and currency differences related to German speaking tourists.

Practical subjects include basic vocabulary and pronunciation, sentence structuring, making initial approaches conversationally, basic reading, spelling and pronunciation from written matter.

Slides, film and discussion seminars are used, however, the major emphasis is on in-class practise of German conversation and pronunciation, in small groups.

Prerequisite: No previous knowledge of German is required.

18.955 — TRAVEL AGENCY AND TOUR OPERATIONS — AN INTRODUCTION
(formerly Tours and Hotels 18.916 and Rail, Bus and Ship 18.917)
Unit: 1.5

A framework for students considering a work situation in the Travel Counselling and Tour Arranging field. To be completed before, or in conjunction with Domestic Air.

Topics include hotel terminology, classifications and bookings, cruise and tour bookings, marketing of tours; Club Med, Sun destination Tours, and product comparisons. Basic functions and responsibilities of travel agencies are covered.

19.902 — MAINTENANCE AND CONTROL
Unit: 1.0

Prepares candidates for a supervisory role in the building management field, and assists people in this line of work who have not had formal training.

Students acquire considerable depth of understanding of maintenance from a supervisory viewpoint and, in particular, of the chemicals involved in various types of maintenance.

Lectures, demonstrations, visual aids and viewing equipment provide knowledge of chemicals, disinfectants, equipment and techniques for maintaining floors, carpets, windows, blinds etc., with particular attention to hotel, hospital and institutional maintenance.

19.903 — INTERIOR DESIGN — BASIC
Unit: 1.0

Students completing this course will have an understanding of interior design versus interior decoration.

Through lectures, slides, class projects, assignments, and field trips the instructor will cover the elements and principles of design as they relate to the interior environment.

Other topics include space planning, colour, materials, furniture, lighting, accessories, and the relationship between interior and exterior design.

Text: "Inside Today's Home".

19.905 — SAFETY AND SANITATION
Unit: 1.0

Hospital executive housekeepers, maintenance employees, hotel and residence building managers, or anyone aiming at achieving such a position acquire a sound understanding of the causative factors of diseases and the methods available to control their incidence. The student learns to identify and evaluate biological, physical and chemical safety hazards and their potential dangers. Established methods are utilized so that adequate controls can be used for protection and prevention.

Lectures, visual aids, demonstrations, and discussion sessions cover sanitation terminology, related bacteriology, behavior control via physical and chemical agents, cleaning techniques, waste material handling, insect and rodent control, plumbing, and case studies; safety — ergonomics, chemical hazards, ventilation, protective equipment, dangerous liquids, tools and machinery, accident prevention, safety training, radioactive materials, disaster planning, evacuation, and case studies.

19.920 — COLOR AND LIGHTING
Unit: 1.0

Provides students with the necessary information on color and lighting to enable them to carry out the duties of an assistant in an Interior Design business.

Topics include physics of color, color theories, physiology of color, psychology of color, color in art, advertising and merchandising, color in the home, lighting methods, effects, trends and technology.

Prerequisite: 19.903 Interior Design — Basic (65% minimum)

19.924 — HISTORY OF FURNITURE
Unit: 1.0

Covers the history of furniture from ancient Egyptian to contemporary.

Topics include ancient and European furniture to 1500, the Renaissance, the Baroque Period, the Rococo period, the Neoclassical period, the Victorian period, and modern period. Oriental furniture is also covered.

Illustrated lectures, discussions, class projects, assignments, and field trips introduce the student to periods, construction, and quality. Some sketching and design will be included to encourage individual expression.

Text: "World Furniture" Noel Riley.

19.927 — SPACE PLANNING 1 and 2
Unit: 1.5

An introduction to the varying factors involved in residential and commercial space planning and how to deal with these using recognized techniques.

Residential planning topics include zone and bubble diagrams, group spaces, private spaces, support spaces, analysing and selecting floor plans, and the major elements in planning.

Commercial planning topics include offices, hotels, restaurants, and retail stores.

Fifty-four hours of classroom time features lectures, slides, in-class assignments, plus residential and commercial design projects.

Text: "Anatomy of the Interior Designer".

Prerequisite: 19.903 Interior Design — Basic, 40.901, 40.902, 40.903 Drafting and Design (65% minimum)

19.928 — GRAPHIC PRESENTATION
Unit: 1.0

Develops the student's ability to present design plans, elevations, and perspectives.

Subjects include the importance of presentation in the design process, seeing texture graphically, various presentation methods in rendering plan, elevation, and perspective sketches.

Prerequisite: 40.901, 40.902, 40.903 Drafting and Design (65% minimum).

19.930 — MATERIALS AND DETAILING
Unit: 1.0

To acquaint the student with properties, characteristics, and uses of materials used for interior construction, custom furnishing, and decor.

It introduces the student to methods and techniques involved in preparation of working drawings for interior construction elements, building components, millwork, custom furniture, and built-in cabinets.

Prerequisite: 19.903 Interior Design — Basic, 40.901, 40.902, 40.903 Drafting and Design and students are asked to bring drafting samples to first class.

19.932 — DIRECTED STUDY PROJECT
Unit: 0.5

The student is required to complete all other Interior Design Certificate program courses prior to enroling in the Directed Study Project.

The student incorporates all material from previous courses in a major project representing a 450 square metre (5000 sq. ft.) residential and commercial space.

The project will include planning, colour scheme selection, furniture selection, lighting and electrical planning, developing drawings of custom millwork. Graphic presentation is of major importance.

Classroom time will be available for advice from various instructors.

Prerequisite: All other courses of the Interior Design Certificate Program (65% minimum).

19.940 — ORIENTATION AND TECHNIQUES FOR THE EXECUTIVE HOUSEKEEPER
Unit: 1.0

An introduction to opportunities in industrial, institutional and hotel housekeeping. There are no prerequisites to this course.

Persons presently employed in related fields who desire promotional opportunities and management responsibilities are encouraged to participate. The course is under consideration by the National Executive Housekeepers Association, Inc. for the purpose of applying credit toward the N.E.H.A. Certificate. Please contact your program consultant for more information.

Topics include the definition of housekeeping as applied to hotels, motels, clubs and schools; housekeeping as applied to health-related institutions such as hospitals, nursing homes and places of incarceration; housekeeping as related to office complexes, factories, chemical and pharmaceutical, and food organizations, etc.; basic procedures and surfaces to be cleaned; selection of appropriate equipment and supplies; selective and unusual cleaning procedures; cleaning standards and inspection; work measurement and simplification; time/motion study; etc.

Classroom time is augmented by practice at home or on the job. Students who wish NEHA accreditation may be required to write N.E.H.A. examinations, and give in-class demonstrations.

19.941 — HOUSEKEEPING DEPARTMENT ORGANIZATION AND RECORDS
Unit: 1.0

This course is under consideration by the National Executive Housekeepers Association, Inc. for the purpose of applying credit toward the N.E.H.A. Certificate. Please contact your program consultant for more information.

Topics include setting up a housekeeping department in a large operation; housekeeping management as a coordinative function of methods, manpower, machines, materials, controls, etc.; manpower structuring, description of tasks, and job specifications of manpower in housekeeping; lines of responsibility and coordination with other departments; staff recruitment and interviewing techniques; departmental policies regarding employees; employee motivation; personnel recordkeeping; records used in housekeeping; use of records as a planning function, etc.

Classroom time is augmented by applied practicums and home study. Students who wish accreditation from N.E.H.A. may be required to write N.E.H.A. examinations.

19.942 — HOUSEKEEPING DEPARTMENT BUDGETING, PURCHASING AND EQUIPMENT
Unit: 1.0

This course is under consideration by the National Executive Housekeeping Association Inc., for the purpose of applying credit toward the N.E.H.A. Certificate. Please contact your program consultant for more information.

Topics include using the budget as a management tool; the mechanics of the budget process; elements of a housekeeping departmental budget; budget control; the purchasing process, problems, and evaluation; product research techniques; storage and selection on the basis of effectiveness; determination of supplies; equipment textiles, etc.

Classroom time features demonstrations and lectures by the instructor.

Student demonstrations are encouraged and reports, budgets and tests will be required. Students who wish NEHA accreditation may also be required to write N.E.H.A. examinations.

Prerequisite: 19.940 Orientation and Techniques for the Executive Housekeeper or current employment in housekeeping function in industry.

20.180 — MARKETING 1
Unit: 1.0

This course conveys skills in assessing market demand for consumer and industrial goods, and applies principles of product planning to capitalize on well defined market opportunities.

Students who have little or no experience in marketing or sales, will develop a basic understanding of the role and the activities carried out by marketing personnel in business organizations.

The course includes the use of a comprehensive textbook; lectures designed to expand and illustrate applications; case studies and discussions to develop decision-making skills, and project assignments to bring acquired knowledge into practice. Specific topics include market analysis, target market determination, research methods, forecasting, marketing program design and control, determination of buyer behavior, classification of goods, and product planning.

Text: "Basic Marketing — Learning Aid", "Basic Marketing" 3rd Canadian Edition, McCarthy and Shapiro, Irwin Dorsey.

20.275 — PROFESSIONAL SALES
(formerly Salesmanship 1)
Unit: 1.0

Provides basic training for the sales aspirant and those already in sales who have had no formal training. It provides the opportunity to make an in-depth study of the mechanics of salesmanship, and develops skills to a professional level.

Using a series of lectures, reading assignments, and training films, the student covers the pre-approach, demonstration/presentation, handling of objections and closing techniques.

Students develop selling skills through practical application of the various sales techniques to a product or service of their choice. Sales practice (role playing) with the use of video tape and critique is of great assistance.

Text: "Personal Selling: Function, Theory and Practice" Young and Mundy, Dryden.

20.280 — MARKETING 2
Unit: 1.5

This course is a continuation of 20.180 Marketing 1.

The student learns the elements of the marketing mix — product, price, promotion and distribution. The course also briefly introduces the student to some of the other areas of marketing such as industrial marketing, international marketing and marketing of services.

The secondary objective is to further expose the student to the decision making process.

Prerequisite: 20.180 Marketing 1.

20.310 — SMALL BUSINESS DEVELOPMENT
Unit: 1.0

All the planning stages involved in starting a new business are covered including market, financial and legal feasibility requirements. Major emphasis in this course is placed on the preparation of a business plan.

Text: "Small Business Management in Canada" R.M. Knight, McGraw-Hill-Ryerson.

20.323 — SALES MANAGEMENT
Unit: 1.0

A basic overview of the sales management process as well as a close examination of selected topics such as: selection, assimilation, training, supervision and performance appraisal techniques. The course content emphasizes human resources. Supplementary topics include: sales morale, motivation, planning, organization and sales management problems. Students should be able to demonstrate the basic "sales management skills" upon completion.

Lectures, discussions, case studies, films and readings are used throughout the course.

Text: "Management of the Sales Force" 6th Edition, Stanton and Buskirk, Dorsey.

20.351 — PRINCIPLES OF PROPERTY MANAGEMENT
Unit: 1.0

This course lays the foundation for a sound education in property management. It thoroughly familiarizes the student with the basic theories and techniques of managing investment real estate, and is useful to any person interested in property mangement.

The student develops an insight into the long range welfare of the investment property, and becomes familiar with the day-to-day skills necessary to manage residential properties.

It also discusses the responsibilities of the property manager such as management agreements, merchandising rental space and leasing, controlling the physical investment through maintenance, real estate economics, property taxation and appeal procedures, financing and valuation, neighborhood analysis, property analysis and apartment management. Students gain an overall view of the many types of property in which management opportunities abound.

Credit for this course is available toward the designation of Certified Property Manager with the Institute of Real Estate Management.

Text: "Housing: Its Your Move Vol. 1" Pennance et al, Urban Land Economics Division of U.B.C.

20.360 — EXPORT/IMPORT DEVELOPMENT
Unit: 1.0

A good explanation of export/importing functions and how to start an exporting or importing business.

This course covers nature of export markets, types of export organizations; Canada's external trade and import markets, areas of opportunity for exporting, ways of locating a foreign market, sources of market information, product modification, branding, packaging, pricing, the sales contract.

The course is designed to give practical experience in different aspects of exporting.

Text: "International Business" Dhawan Eternand Wright, Addison-Wesley.

20.371 — ADVERTISING 1
Unit: 1.0

A carefully designed course to help creatively inclined persons assess their potential and abilities for careers in the advertising field; to assist newcomers to advertising in expanding their knowledge of the craft and expose them to the newest trends and to creative techniques in advertising.

Students become competent critics of advertising and are able to measure their own abilities and talents in one of the phases of advertising. Students have a deeper understanding of advertising in the marketing picture, the problems and challenges of advertising, the factors affecting creative endeavors, and can make a more effective contribution if involved in an advertising career.

Topics include the history of advertising — the field today and tomorrow; definitions of local and national advertising; the advertising spiral; advertising planning; the media and media mix — newspapers, radio, TV, magazines, direct mail and transit advertising.

Classroom projects and field visits are included.

Text: "Contemporary Advertising" Bovee and Arens, Irwin Dorsey.

20.372 — INDUSTRIAL MARKETING
Unit: 1.0

This course examines the special applications of marketing strategies when dealing with professional buyers or purchasing agents.

BCIT BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

3700 Willingdon Avenue, Burnaby, B.C. Canada V5G 3H2 Phone: (604) 434-5734

FOR OFFICIAL USE ONLY

REGISTRATION FOR CONTINUING EDUCATION AND INDUSTRY SERVICES COURSES

Social Insurance (this becomes your student number)

Application Date: Year / Month / Day

Title: Mr., Miss, Mrs., Ms (circle)

Surname

First and Middle Initials

First Name in full

Home Address

Postal Code

Home Phone Number

Date of Birth: Year / Month / Day

Full-time BCIT Day School Student? Yes / No

BCIT Staff Member? Yes / No

If working towards a BCIT Certificate, state name of Certificate Program

Name of Employer

Business Address

Postal Code

Depart-ment

Business Phone Number

Local

Position

No. of years experience in this field of work

If a former BCIT student, check whether : Day School / Continuing Education

Last grade completed

Country where attended secondary school

Date of final year at secondary school 19

VISA / MasterCharge

Card Number

Valid Date: Year / Month / Day

Signature

Cheque/Money Order Enclosed

Expiry Date: Year / Month / Day

Type of Post-Secondary Institution	Name of Institution	No. of years attended	Graduate Yes	Graduate No
Vocational				
College				
Institute of Technology				
University				
Other				

Reason for taking courses listed below:

- Related to current work
- Preparation for advancement with employer
- Preparation for completely new vocation
- General interest

Payment of fees:

- Full fees to be paid by you
- Paid jointly by you and employer
- Full fees to be paid by employer
- Payment of fees not applicable

Name of Course	Course No.	Day of Week	Time	Cost	Downtown Yes	Downtown No	Start Date

APPLICANTS SHOULD NOTE THE FOLLOWING:

1. Register early. Watch for registration deadlines.
2. Course(s) fees must accompany this Registration form. Registration forms not accompanied by fee payment will not be processed.
3. Mailing this Registration Form and payment of fees does not insure a seat in the class.
4. If it is not possible to register you in the class of your choice, you will be put on a waiting list or your money will be refunded.
5. Program planning assistance is available throughout the year.
6. All cheques or money orders must be made payable to BCIT. The **back of the cheque must clearly indicate the Student's Name, Social Insurance Number, and phone number**.
7. Mail in applications must be accompanied by a cheque, money order or charge account number and expiry date.

REGISTRATION FORM FOR
THE DIVISION OF CONTINUING EDUCATION
& INDUSTRY SERVICES
COURSES

PLEASE SUBMIT TO:

Division of Continuing Education & Industry Services
British Columbia Institute of Technology
3700 Willingdon Avenue
Burnaby, British Columbia
V5G 3H2

BRITISH COLUMBIA INSITUTE OF TECHNOLOGY

3700 WILLINGDON AVENUE, BURNABY, BRITISH COLUMBIA, CANADA V5G 3H2 434-5734

CEIS — CONTINUING EDUCATION REV. 4 81-09

APPLICATION FOR PROGRAM APPROVAL/TRANSFER CREDIT

(See pages 7 and 97 of Calendar before completing)

NAME: _____ (Surname) _____ (Initials) _____ (First name in full)

ADDRESS: _____ (Street) _____ (City) _____ (Postal code)

PHONE No. (Home) _____ (Business) _____ S.I.N. _____

Name of proposed program:

_____ Certificate/Diploma in _____ Technology

BCIT Course Number:	BCIT Course Name:	Units of Credit:	✓ if Course completed:

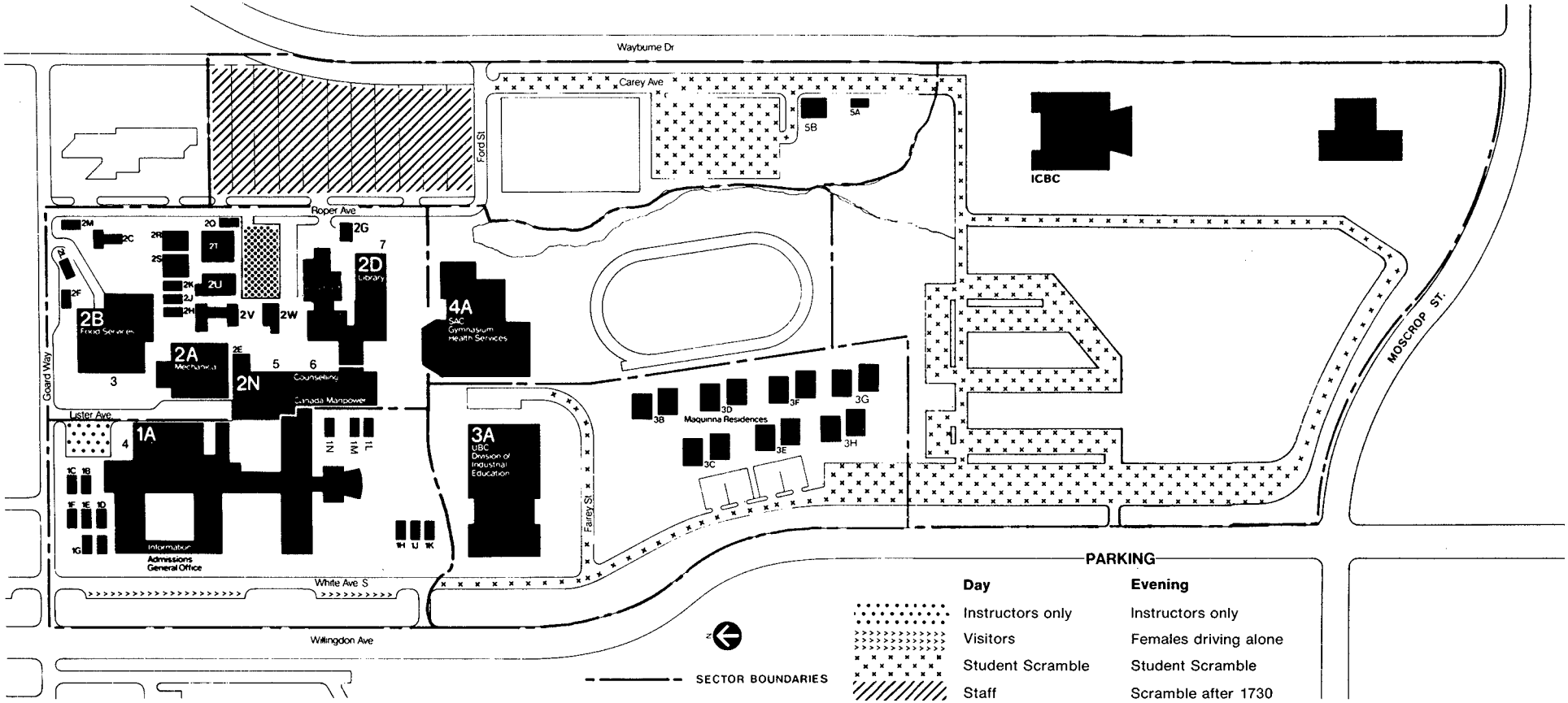
If transfer credit is requested, **transcripts and course outlines** must be attached.

Institution:	Course Name	Course No.	BCIT Course replaced:	OFFICE USE: Technology Approval of equivalence:

Student Signature: _____ Date: _____

Total Transfer Units Allowed: _____ Recorded: _____

Program Approved by: _____ Date: _____



Building Identification

1A	Information; Admissions; Continuing Education; 1962/67 Classroom/Laboratory; Administration
1B	Developments
1C	Distance Education
1D	CEIS Division Offices Training and Development Centre
1E	Mathematics
1F	Mathematics
1G	Industry Services
1H	General Nursing
1J	Psychiatric Nursing
1K	RN and RPN Administration
1L	Continuing Education
1M	Continuing Education
1N	Continuing Education
2A	Mechanical
2B	Food Services and Training (Cafeteria)
2C	Greenhouse; Animal Holding
2D	Library; Broadcasting; Audiovisual; Bookstore
2E	Telephone Exchange
2F	Electrical Sub-Station
2G	PEMC
2H	Distance Education
2J	Distance Education
2K	Food Services
2L	Food Services
2M	Food Training; PVI
2N	1976 Classroom Laboratory; Counselling; Student Financial Aid; Computer Centre; Canada Employment Centre
2Q	Parking
2R	Staff Offices
2S	Classrooms
2T	Security; Lost & Found; Physical Plant
2U	Classrooms
2V	Staff Offices
2W	Classrooms
3A	Teacher Training Centre
3B-3H	Maquinna Residences
4A	Student Activity Centre; Medical Services
5A	Loggers Sports

3 Cafeteria
4 TNT -
5 Snack bar
6 TNT
7 Bookstore

NOTE: A map outlining campus wheelchair routes is available at the information desk.

The student develops a working knowledge of how to identify the supplier services needed to compete successfully for large volume contracts with commercial firms, government buying offices and institutions such as schools, hospitals, etc.

Using a mixture of lectures, films, cases, and student field studies, the practical procedures followed by buying organizations are explained and discussed in relation to real examples.

Text: "Industrial Marketing Management" 1981, Hutt and Speh, CBS College.

Prerequisite: 20.180/280 Marketing 1 and 2, or equivalent.

20.387 — MARKETING PLANNING
Unit: 1.0

Students wishing to take this course must have some marketing background through experience or training. Prior completion of Management 1 & 2 and Management by Objectives would also be helpful.

The course is for people who can benefit from understanding the highly important principles and techniques of planning in a marketing situation.

Develops an understanding of the need for planning in both strategic and operational time frames, and presents the benefits of an organized approach to marketing a product or service.

Class lectures, discussions, case studies and a term project combine to provide a comprehensive range of knowledge in this important marketing area. Topics include analyzing and reaching present and potential markets; improving various aspects of the product mix; applying marketing research methods and techniques; determining marketing objectives; utilizing advertising; promotion, distribution, and price strategies.

Prerequisite: 20.180/280 Marketing 1 and 2, or equivalent.

20.410 — SMALL BUSINESS MANAGEMENT
Unit: 1.0

For the manager or owner of a small business, and for students who have completed 20.310 Small Business Development and wish to be exposed to operating techniques before embarking on a new business venture.

It will assist in planning, organizing, directing and controlling each of the key functional areas of a small business. It is designed to improve the effectiveness of the student in tackling his day-to-day business problems.

Lectures, case studies, films and general discussion cover financial control, recordkeeping, budgeting, forecasting, product and inventory control, pricing, sales promotion, staffing and other functions pertinent to successful business operation.

Text: "Small Business Management: A Strategic Emphasis" Raymond Kao, Holt Rhinehart.

Prerequisite: 20.310 Small Business Development or equivalent experience.

20.411 — MERCHANDISING/RETAILING
(formerly 20.384 Retailing and 20.411 Merchandising)
Unit: 1.5

Those with limited experience in retailing will gain an understanding of the basic concepts and practices in merchandising. Specifically, this course deals with the techniques of establishing, procuring, maintaining, evaluating, and promoting a merchandise assortment.

Students will become familiar with assortment planning, factors in selection of resources, buying plans, characteristics of fashion and staple operations, fundamentals of budgets, standards, assortment maintenance, selection techniques, vendor relations, merchandise presentation, and basics of sales and/or promotion. With such training the student would be in a position to seek advancement in specialty retail and department stores.

Text: "Retailing Principles and Practices" Lewison and Delozier, Charles E. Merrill Publishing Co.

Prerequisite: 20.180/280 Marketing 1 and 2.

20.452 — APPRAISING REAL PROPERTY — SREA — INTRODUCTION
Unit: 1.5

This introductory course is designed for beginning appraisers, real estate brokers, lenders, builders, and assessors and assumes no further background than an interest in appraising and the ability to learn. It may also serve as a refresher for experienced appraisers who feel a need to update their knowledge and skills.

On completion the student will not be an appraiser, but will have learned how to apply appraising principles and techniques to actual residential appraisal problems. To become a professional appraiser the student must add meaningful practical appraisal experience and further advanced training. This course is recognized for credit on most formal appraisal programs.

Lectures, discussion groups, reading assignments, and practical case problems cover such topics as principles of real estate; elements of urban land economics; nature and principles of real estate value; appraising as applied economics; analysis; the appraisal framework; area analysis; neighborhood analysis; site analysis; site valuation; improvements analysis; direct sales comparison approach; gross rent multiplier analysis; cost approach; reproduction cost of new improvements; estimation of accrued depreciation (diminished utility). Summary of the cost approach: cost approach reconciliation analysis and final value estimate; writing the appraisal report; professional ethics and standards of practice.

Text: "Introduction to Appraising Real Property" #101 Student Reference Manual, Society of Real Estate Appraisers.

20.462 — INTERNATIONAL MARKETING MANAGEMENT
Unit: 1.5

This course features a computer game on "international marketing of a consumer and industrial product" designed to give the student an understanding of various marketing problems.

Topics include international marketing research techniques, problems in researching foreign markets, provincial, federal and international sources of market information, CANSIM, searching market data through computer, product modifications, branding, packaging, dynamic costing/pricing.

Text: "International Marketing" Catendra and Hess, Irwin Dorsey.

Prerequisite: 20.180/280 Marketing 1 and 2, and some knowledge of marketing research desirable.

20.463 — FINANCING INTERNATIONAL TRADE
Unit: 1.0

An emphasis of the various financing methods practised in international trade and the different types of financial documents used in trade.

Topics include methods of payment in international trade, letters of credit, collection procedures, spot and forward foreign exchange markets, convertibility, exchange restrictions, arbitrage, balance of payments, dynamic costing/pricing, taxation and incoterms.

Text: "An Introduction to International Financial Management" Suk. H. Kim, University Press of America.

20.471 — ADVERTISING 2
Unit: 1.0

This course brings into sharp focus the subject material covered in Advertising 1 by enabling persons holding advertising positions to advance to more responsible areas. It also explains the interrelationship between marketing and advertising.

On successful completion the student should expect to possess a fair grounding in aspects of measuring advertising effectiveness; differentiate between advertising and sales promotion; understand media planning and budgets; know the make-up of advertising campaigns; know how an advertising agency operates; implement marketing planning; understand coordination, controls and measurements and be able to take on greater responsibilities in an advertising operation.

A blend of active learning lectures, assignments, competitive team projects (backed up by analysis and performance critiques), provides a unique learning experience in advertising and marketing planning. Media, sales promotion, radio and TV writing, film production, creative processes, the principles and practices of marketing planning, coordination, controls and measurements are included.

Text: "Contemporary Advertising" Bovee and Arens, Irwin Dorsey.

Prerequisite: 20.371 Advertising 1.

20.490 — DIRECTED STUDIES
Unit: 1.5

Under the supervision of the instructor, the student is required to research an actual business problem and write a detailed report (in business

format) on the problem, research methodology used and findings. There are no formal classes for this course.

Prerequisite: First and Second level Marketing Management Technology courses.

20.502 — PUBLIC SPEAKING AND ORAL COMMUNICATION 1
Unit: 1.0

Primary emphasis is placed on developing skills in Public Speaking and in understanding the principles of effective oral communication.

Topics emphasized in Part 1 include the principles of communication as they apply to Public Speaking, and the rudiments of improving the speaking voice. Films, buzz groups and closed circuit TV are utilized. Each person is expected to prepare and deliver an oral assignment weekly.

Text: "Confidence in Public Speaking", Wm.C. Brown and Company (optional).

20.602 — PUBLIC SPEAKING AND ORAL COMMUNICATION 2
Unit: 1.0

Avoiding communication breakdown, one to one communication, and the techniques used in briefing business groups are covered. Further opportunity for improving Public Speaking skills is given in the areas of speaking on abstract subjects, the persuasive speech, and the dinner speech.

Various types of communication are examined. Films, buzz groups and closed circuit TV are utilized. Students prepare and deliver an oral assignment on most nights. The course concludes with a dinner banquet when the class and invited guests hear each class member speak. (Banquet costs extra.)

Text: "Confidence in Public Speaking", Wm.C. Brown and Company (optional).

20.903 — MARKETING RESEARCH
Unit: 1.0

A fundamental course designed to assist persons who are, or will be, involved in the marketing research function or its application, to understand better the theoretical and operational aspects of this important area of marketing. It provides the knowledge and ability to apply basic marketing research methods and techniques to a wide variety of marketing problems.

A combination of class lectures, discussions, case studies and a field project, are used to provide comprehensive knowledge of this integral marketing function. Specific topics are sampling theory and practice, questionnaire design and field interviewing, consumer behavior, media, advertising, product, and industrial marketing research.

Text: "Marketing Research, Text and Cases" 4th edition, Boyd, Westfall, Stasch; Irwin.

20.906 — PUBLIC RELATIONS
Unit: 1.0

This course is designed for people in business, government, municipalities, associations, and organizations who are responsible for communicating with the public and within the organization.

Through this course students learn to carry out their information and communication assignments with increased confidence and competence.

Using lectures, examples, case studies and discussion sessions, the course material covers planning and executing a public relations program; communication techniques; principles of news writing and preparation of news photographs; utilizing the media; press and community relations; external and internal communications, and meetings.

Text: "This is P.R.: The Realities of Public Relations" 2nd Edition, Newsom and Scott; Wadsworth.

20.907 — TECHNICAL SALES
(formerly Salesmanship 2)
Unit: 1.0

This course focuses on applied selling techniques and emphasizes motivational skill training. It is designed for those already employed in sales and is also suitable for those employed in an "inside sales position" who wish to move into the sales representative category.

It gives those already in the sales field an opportunity to further develop their sales skills and eliminate the costly "trial and error" method of learning.

Students study the mechanics of sales including the pre-approach, approach, demonstration, objection handling, and closing. Emphasis is on selling practice and role playing using video tape. A number of sales training films are employed.

20.914 — GENERAL MARKETING
Unit: 1.0

This is an introductory course in marketing for persons who wish to have a short 12-week course rather than the longer combined marketing courses. It is useful to persons concentrating their studies in areas other than marketing who wish limited exposure to the field of marketing.

Students are asked to relate many concepts in the general field of marketing to their own business situation. This provides students with a conceptual framework of marketing in their own firm as well as a theoretical understanding of the discipline.

Topics include market analysis, market concepts; uncontrollable factors; total product; market segmentation; product differentiation; packaging; branding; product classification for consumer and industrial goods; product life cycle; style and fashion; channels of distribution; retailing; wholesaling; promotion blending; pricing policies. Students are examined on the textbook readings as assigned, and are expected to prepare out-of-class assignments relating to their own company or to some business situation.

Text: "Foundations of Marketing" 2nd Canadian Edition, Beckman, Boone, Kurtz; Holt Rinehart and Winston.

20.930 — ADVERTISING CREATIVE PRINT
Unit: 1.0

Students who have a basic knowledge of advertising and print media planning learn the creative development of graphic art concepts and printed publications.

Students develop a thorough, practical knowledge of design, layout, typography, printing, and their applications to both advertising and general publishing. At completion they understand the fundamentals of effective copywriting and the criteria used to determine effective design and are familiar with those production processes necessary for transforming rough art concepts into the published form.

Topics including design, layout, typography, color, printing and publication planning are covered through a combination of lectures, demonstrations, workshops and field trips. Attention is focused on the role of graphic design houses, printers, photographers and commercial artists.

Text: Recommended reading: "Pocket Pal" Graphic Arts Production Handbook; International Paper Company.

Prerequisite: Suggest 20.371 Advertising 1 or practical related experience.

20.971 ADVERTISING FOR THE SMALL BUSINESS
Unit: 1.0

Designed for the manager or owner of a small business this course demonstrates how to make the most of a limited advertising budget. Students gain an understanding of the inter-relationship between marketing and advertising; types of media; media planning; budgeting; measuring advertising effectiveness; co-ordination and controls, and advertising agencies.

22.100 — BASIC MATHEMATICS OF FINANCE
Unit: 1.0

This course is for persons who wish to know about the concept of interest and its effects upon business and industry applications, and for those wanting to acquire competency in performing the appropriate calculations involving interest.

The student learns to disciminate between the more common situations involving interest, and to apply the necessary analysis to obtain solutions to these situations. The subject material is covered through lectures and readings accompanied by assignments and periodic tests. Topics include simple and compound interest, present values and discounts, annuities, evaluation methods and basic replacement analysis.

Prerequisite: Basic algebraic skills to at least the Grade 11 level. Others should consider 22.900 Preparatory Business Mathematics.

22.900 — PREPARATORY BUSINESS MATHEMATICS
Non-Credit

This course upgrades and refreshes the mathematical knowledge of students intending to pursue Business Management programs. It provides students with a suitable prerequisite for the mathematics programs in the Business Management Division and meets the Algebra 11 entrance requirement.

The course consists of arithmetic, basic algebra, graphical techniques, ratios and per cents, and the elementary business applications of these concepts. The operation of electronic calculators is also covered. The method of instruction is basically lecture classes using extensive practice problems as student assignments.

22.901 — PURCHASING
Unit: 1.0

This course is for people preparing to enter the purchasing field and for those whose responsibilities include buying in a small operation; for people newly appointed to a purchasing department, and for those in related fields who will benefit from knowing the fundamentals of purchasing, e.g. production; warehousing; maintenance personnel.

Students gain fundamental knowledge of the principles and practices of purchasing.

This course includes the functions of a purchasing department and its relationship and responsibilities to management; centralized purchasing; negotiating; buying for quality, quantity and price; timing and sources of supply; receiving and warehousing; inventory control. See 22.902 for a supporting course in Inventory Planning and Control.

22.902 — INVENTORY PLANNING AND CONTROL
Unit: 1.0

This course is designed for people preparing to enter the inventory planning field, and for those who interface with an inventory system and would benefit from knowing the fundamentals of inventory planning.

It is of particular interest to people intending to enter the operations planning field, and others such as purchasing agents buyers, maintenance planners, production schedulers, sales managers, warehouse managers, mill storekeepers and parts men.

On successful completion students have a basic knowledge of the techniques used in the design and control of inventory systems.

Topics include forecasting inventory requirements (the need and the techniques); the ABC classification; material requirements planning; the role of the computer; inventory information flow and inventory control design.

Prerequisite: Students enroling in this course must have some understanding of basic algebra.

22.904 — QUALITY CONTROL METHODS 1
Unit: 1.0

Students gain a basic understanding of the principles of modern methods of quality control.

On successful completion students have an insight into the problems encountered achieving quality levels, and an understanding of the important techniques used to solve problems of product quality in industry.

The course examines development, planning and organizing for quality; engineering a quality product; reliability and maintainability assurance; material control systems, inspection and non-destructive testing; metrology and quality costs.

22.905 — QUALITY CONTROL METHODS 2
Unit: 1.0

This course is a continuation of Quality Control Methods 1 and is designed to enable the student to handle some of the advanced techniques of quality control.

On successful completion students can prepare to write the American Society for Quality Control examinations for Quality Technician and/or Quality Engineer.

The main topics covered are quality control management, engineering technology of quality control, statistical technology of quality control, motivational methods, and applying total quality control in the company.

Prerequisite: 22.904 Quality Control Methods 1.

22.906 — ADVANCED PURCHASING
Unit: 1.0

This course builds on 22.901 Purchasing, and expands on several of the topic areas to provide the buying practitioner with detailed knowledge.

Students gain a detailed knowledge of the principles and practices of sales taxes, negotiation and law.

This 12-week course examines the areas of importing goods, federal and provincial sales and excise taxes, negotiating contracts, and law as it pertains to the purchasing function.

Prerequisite: 22.901 Purchasing.

22.910 — SUPERVISORY TRAINING FOR OPERATIONS MANAGEMENT
Unit: 1.0

This course is designed to prepare new or aspiring supervisors for leadership, or to refresh supervisors' leadership skills. The course uses self analysis, simulated meetings, group work, case studies, research and lectures. These methods enable students: 1) to become aware of the implications of an early assignment to first line supervision; 2) to review and expand upon the application of management to organizational problems at the supervisory level. Topics include change and conflict management, managing marginal and unsatisfactory employees, safety, and on the job training.

Student skills in planning, decision-making, inter-personal and inter-group relations and communications, are developed using experiential methods.

Students develop a framework for analyzing and coping with career choice decisions, by identification of personal attributes and plans for self improvement.

22.915 — PRINCIPLES OF LOGISTICS (an Introduction to Transportation and Distribution)
(formerly Principles of Transportation)
Unit: 1.0

Designed to introduce the student to the activities of the total distribution concept with emphasis on profitability and cost trade-offs in a firm's distribution system, including transportation and traffic, purchasing and inventory management, warehousing, order processing and customer services.

Students gain an overall appreciation of the complexities of moving goods from A to B. As an introductory rather than a technical course, it is designed to provide people with an overview of transportation/distribution management and its interfaces with production and marketing. The course also allows the student who is presently employed in related activities to gain a sound general knowledge of the total distribution systems' effect on the firms profitability.

Topics include the economics of business logistics, customer service effectiveness and measures, transportation modes, transportation regulations, traffic management, the buying of transportation services, purchasing, inventory management, materials handling, warehousing, international shipping and logistics information system.

22.916 — PRINCIPLES OF EXPORTING/IMPORTING
Unit: 1.5

This course assists those in industry to understand the complexities of international trade and the concepts of exporting/importing in the present Canadian environment.

Students learn the terminology and activities of international trade, tariffs and non-tariff barriers, the effects of protectionism, countervailing duty, countries and their tariff status, the interpretation of dumping, the fair market value's determination as well as the role of bonded warehouses and free trade zones.

The course is designed to present practical knowledge in handling export/import documentation, costing, financial, insurance and pricing. Details of export/import procedures are discussed together with tariff classification, federal sales and excise tax, refund claims and duty drawbacks.

Special emphasis is placed on the responsibilities of the exporter/importer and roles of the government agencies in assisting and governing exportation and importation in Canada.

22.917 — TRANSPORTATION ECONOMICS
Unit: 1.0

The various procedures used to cost transportation are presented.

Each mode of transportation is analyzed to show the specific importance of economics in relation to the movement of goods.

Many outside factors must be considered by transport operators, not just the cost that they control. The course includes many points of interest to both public and private carriers. The material is also of interest to users of transport services as it will give them an understanding of the many facets of transport costing.

Topics are the need for accurate costing in transportation; economic and geographic considerations that directly or indirectly affect costing patterns of transport modes; a concept approach to costing transportation; practical examples of transport costing (ship, airline, pipeline, highway, railroad, transport terminals); the relationship of freight rates to costs; economic aspects of transport development; cost-benefit analysis and its use in transport costing; marginal cost pricing and its use in transport costing; the significance of the operating department in the transport cost.

22.918 — TRANSPORTATION REGULATION
Unit: 1.0

This course is designed to assist people who will have, or who now have, employment in traffic departments, distribution departments and shipping in the transportation industry, to understand the complexities of transportation in Canada and the international transport regulations that affect Canadian trade.

This course relates to transportation law and its application regarding: first – B.C.; second – Canada; third – the Pacific Rim trading community; fourth – world trade.

Students study the various regulations and their application to the package of goods and people as a service and how they affect the user of the service. The duties, liabilities and responsibilities of the carrier and the shipper are outlined. The primary purpose is to relate how transportation regulation has a bearing on the economics of a firm, and the relationship to a firm's pricing policy and service.

Topics include a definition of economic regulation; the reason for economic regulation; contracts of carriage, viz: rail and truck bills of lading, through bills of lading, operating authorities, ocean bills of lading, carrier liability, embargoes, shipper liability.

22.919 — STRATEGIC DISTRIBUTION MANAGEMENT
(formerly Distribution Management)
Unit: 1.5

The course presents the role and contribution that physical distribution functions provide in the business. An overview of the total distribution concept forms the core. It is assumed that the students taking this course have a thorough understanding of traffic and transportation or that they are or will be taking courses in transportation regulations, traffic and transportation management etc.

Emphasis in this course is placed on logistics information systems, customer services, order processing, materials handling, warehousing, warehouse locational analysis, protective packaging, containerization, unit loads as well as an overview of purchasing and inventory control.

The course is designed to give the student an appreciation and understanding of the cost factors and cost trade-offs available to a firm within the total distribution concept, and to enable the student to contribute to the firm's profitability by becoming a better decision maker.

22.921 — TRAFFIC AND TRANSPORTATION MANAGEMENT
Unit: 1.5

The course is designed to equip the student with the skills and knowledge to understand the complexities of both the industrial traffic department and the operations department of a transportation company (and the departments within a transportation company).

The course provides the comprehensive practical knowledge required by both the shipper and receiver of goods in an industrial setting.

Students are introduced to the various types of freight tariffs, how to overcome problem areas of freight claims, marine insurance, and the topic of areas concerning de-regulation in the United States and its implications for Canadian shippers and receivers. In the section concerning transport management emphasis is on the various aspects that affect the carrier from the carrier management point of view. Each function within a transport company is examined to some degree.

Topics include traffic management; decision making; carrier rate setting variables; freight tariffs; important tariff provisions used in determining the applicable rate; special services and ancillary services; tariffs; routing and misrouting; freight claims; marine cargo insurance and other types of marine insurance; transport management; the effect of regulations on the transport operator; competition route structure; ownership patterns; pricing and ratemaking from a carrier viewpoint; control and organization; the operations department; carrier marketing; public relations and advertising; equipment selection; finance and credit; human relations; personnel management and training; labor relations and collective bargaining; location of transport operations.

Prerequisite: 22.918 Transportation Regulation.

22.935 — STATISTICS FOR BUSINESS AND INDUSTRY
Unit: 1.5

This course provides a comprehensive understanding of the techniques of elementary statistical methods as applied to objective decision making. It is generally suitable for persons requiring statistics for initiating research in the fields of marketing, audit sampling, quality control, inventory control and business forecasting.

The course includes an introduction to the use of statistics in business and industry; descriptive statistical techniques involving the collection and the treatment of data, and a review of elementary set theory and probability; inferential statistical topics including sampling, estimation, hypothesis-testing, goodness of fit, regression analysis, correlation, and time-series analysis.

22.941 — METHOD STUDY — MANUFACTURING
Unit: 1.0

A fundamental course in operations management designed to create a systematic approach to problem-solving in manufacturing or warehousing operations. Students create a plan for solving problems and learn to apply this technique to the daily environment.

The course examines the principles of systematic scientific problem-solving as related to manufacturing or warehousing operations; selection of study areas including economic feasibility; recording techniques, including assembly and display of data for analysis and dissemination; critical examination and development of alternative solutions for design and production problems; installation and maintenance of preferred solutions; importance and implications of human factors related to method study; motion economy and workplace design, supplemented by the application of all topics to practical situations.

22.943 — PERFORMANCE MEASUREMENT
Unit: 1.0

Students proceed from method study into the area of time analysis and related costs of time.

The course familiarizes the student with various systems of recording time and establishing standard times for work.

The course covers historical times; work sampling techniques, predetermined time systems, and the development of standard times from these techniques.

Prerequisite: 22.941 Method Study — Manufacturing or 22.948 Method Study — Office.

22.944 — PROJECT STUDY — MANUFACTURING
Unit: 0.5

This course allows the student to apply the knowledge obtained in 22.941 Method Study — Manufacturing, 22.943 Performance Measurement to an industrial problem.

It allows the student to do a complete study through to the final report.

Prerequisite: 22.941 Method Study — Manufacturing, 22.943 Performance Measurement.

22.946 — FACILITY LAYOUT AND MATERIAL HANDLING — MANUFACTURING
Unit: 1.0

This course is designed to present a systematic procedure for designing layouts as well as determining alternative material handling systems.

It enables students to do layout planning (both over-all and detailed) for plant or warehouse, in conjunction with determination of material handling systems.

Lectures, films and group working sessions, coupled with home assignments develop a basic working knowledge of how to solve layout and material handling functional design.

Prerequisite: 22.941 Method Study — Manufacturing; 22.943 Performance Measurement; 22.944 Project Study — Manufacturing, and 22.902 Inventory Planning and Control.

22.947 — FACILITY LAYOUT AND MATERIAL HANDLING — OFFICE
Unit: 1.0

This course is designed to present a systematic procedure for designing layouts as well as determining alternative material handling systems.

It enables students to do layout planning (both over-all and detailed) for office environments, in conjunction with physical handling of paper, and equipment selection.

Lectures, films and group working sessions, coupled with home assignments develop a basic working knowledge of how to solve layout and material handling functional design.

Prerequisite: 22.948 Method Study — Office; 22.952 Systems and Procedures Manual; 22.954 Project Study — Office, and 22.902 Inventory Planning and Control.

22.948 — METHOD STUDY — OFFICE
Unit: 1.0

This course is a fundamental course in operations management and is designed to create a systematic approach to problem-solving in office systems. Students create a plan for solving problems and learn to apply this technique to office environments.

The course examines the principles of systematic scientific problem-solving as related to office environments; selection of study areas, including economic feasibility; recording techniques, including assembly and display of data for analysis and dissemination; critical examination and development of alternative solutions for design and office systems; installation and maintenance of preferred solutions; importance and implications of human factors related to method study; motion economy and workplace design; which is supplemented by the application of all topics to practical situations.

22.950 — PHYSICAL MATERIAL HANDLING AND INVENTORY SPACE PLANNING
Unit: 0.5

An introduction to sensitivity analysis as it pertains to purchasing, inventory planning and control.

The student is also introduced to the concepts and techniques required to design and analyze the physical space requirements for the storage and handling of products in warehouses, retail, and manufacturing facilities.

Prerequisite: 22.941 Method Study — Manufacturing.

22.952 — SYSTEMS AND PROCEDURES — MANUAL
Unit: 1.0

This course is geared for people in office environments who require an understanding of information flow and its analysis.

It gives the student competence in documenting office systems and analyzing those office systems.

The broad areas of business funding, purpose, goals and strategy are examined. Conventional systems analysis techniques are introduced to examine these areas in detail. In addition, selected topics in current developments regarding the economic and human elements of the work structure are examined.

22.953 — PROJECT PLANNING AND SCHEDULING
Unit: 1.0

This course is designed for those who have a limited knowledge of the critical path method (CPM) or who wish to acquire a basic grounding in the CPM technique and its application to project management. It introduces the fundamentals of the critical path technique, especially in the area of planning, scheduling, resource allocation, and project management.

Using lectures, case studies, and a simulated construction project, the course covers introduction to planning and scheduling techniques; Gantt charts; arrow diagrams; precedence diagrams; PERT; time-cost relationships; resource allocation; bid determination; project management; and the role of the computer.

22.954 — PROJECT STUDY — OFFICE
Unit: 0.5

This course allows the student to apply the knowledge obtained in Method Study — Office together with knowledge learned in Systems and Procedures — Manual to an office problem.

Students do a complete study through to the final report.

Prerequisite: 22.948 Method Study — Office and 22.952 Systems and Procedures — Manual.

22.956 — MANAGEMENT INFORMATION SYSTEMS
Unit: 1.0

This course enables the student to use an overall managerial systems approach when working in the management information area; review, assess and evaluate information processing hardware and software; evaluate management needs for information and integrate those needs into the management system; and design and implement a simple management information system.

The course is not intended to produce highly skilled MIS practitioners but rather to provide an understanding of basic MIS concepts. It enables the student to relate to MIS specialists and to managers in a large organization. In addition there is sufficient detail to ensure that the student knows how to approach an MIS problem in a small organization that would not normally have MIS specialists on staff.

22.963 — MATHEMATICS FOR MANAGEMENT
Unit: 1.5

This course provides a solid foundation in the mathematics fundamental to many of the quantitatively oriented business subjects, techniques, or formal programs of study (BCIT Business Certificate, M.B.A., B.Comm., R.I.A.).

On successful completion, students can demonstrate fundamental knowledge of the common quantitative methods in business and industry by recognizing where these methods are appropriate, and formulating solutions to elementary problems.

This course is an introduction to quantitative methods for business. Based upon the scientific method, the techniques utilize mathematics, statistics, and model building as an aid in the decision-making process for the operation of organizations. These techniques include cost-volume-profit analysis, linear programming, inventory control, queuing theory, simulation, and scheduling networks (CPM). The method of instruction is basically lecture-classes using extensive practice problems as student assignments.

Prerequisite: 22.935 Statistics for Business and Industry and, preferably, 22.100 Basic Mathematics of Finance.

22.965 — OPERATIONS MANAGEMENT
Unit: 1.0

This course is designed to give the student a broad familiarity with the field of operations management and a comprehensive appreciation of some of the problems faced by different types of enterprises (private and public) in the management of their production systems.

Upon completion the student should understand the nature, purpose and processes associated with operations management; the relevance to systems design, resource allocation, operations planning and control to the individual firm; how to identify and solve operational problems using quantitative methods.

Topics include operations management concepts, probabilities, facility location and layout, material management, product and process analysis, forecasting, inventory control, aggregate planning and master scheduling, production control, project management, queuing, quality control, maintenance and cost control.

30.204 — CHEMICAL LABORATORY TECHNIQUES
Unit: 1.5

This is a day school course. Students require permission of the Department Head to attend.

This laboratory course allows persons with some chemistry background to improve their analytical techniques.

Topics include basic techniques in sampling, weighing, moisture determination, ashing, extraction, filtration gravimetric and volumetric methods. Instrumental analysis and separation methods will be described, demonstrated and, whenever possible, practiced.

Prerequisite: 30.902/903 Chemical Principles 1 and 2, or equivalent.

30.305 — CHEMICAL INSTRUMENTATION 1
Unit: 1.0

Allows persons engaged in chemical and related industries to understand and to perform the simpler aspects of servicing and maintenance of common chemical instruments.

Topics include electrodes and transducers, electrical components, power supply modules; pH meters, potentiometric recorders, colorimeters, gas chromatographs. Laboratory work consists of examination of components, calibration, and fault-finding on instruments.

30.405 — CHEMICAL INSTRUMENTATION 2
Unit: 1.0

Allows persons with some background in instrumental analysis to understand basic signal-processing techniques, and to construct some useful auxiliary circuits.

The course examines the fundamentals of operational amplifiers, methods used in detecting equivalence points in potentiometric titrations, coulometric titrators, integrators in polarography, and gas chromatography; uses of logarithmic amplifiers, and analogue to digital converters. Laboratory work consists of construction and evaluation of instruments described in lectures.

Prerequisite: 30.305 Chemical Instrumentation 1.

30.510 — ANALYTICAL CHEMISTRY
Unit: 2.0

Conventional inorganic methods of analysis for determining the common metals in ores and alloys. Basic methods of fire assaying for gold and silver are also covered.

30.610 — ANALYTICAL CHEMISTRY
Unit: 3.0

Advanced analytical techniques using various instruments such as the polarograph, spectrophotometer, colorimeter, gas chromatograph, spectrograph, X-ray scintillometer and X-ray diffractometer.

30.902/903 — CHEMICAL PRINCIPLES 1 AND 2
Unit: 2.0 — 30.902
3.0 — 30.903

Allows persons with little chemistry background to understand the basic concepts and techniques of chemical analysis. Emphasis is on practical application of chemical theory to laboratory problems.

Topics include: chemical symbols; molarity; normality; balancing of equations; acid-base reactions; redox reactions; theory of volumetric solubility equilibrium; colligative properties; electrochemistry and organic chemistry.

Prerequisite: Students should have at least Chemistry 11 or equivalent standing.

30.903 See 30.902

30.905/906 — ORGANIC CHEMISTRY
Unit: 2.0

Gives students with little or no background in chemistry an opportunity to obtain a basic knowledge of organic chemistry. Persons wishing to prepare for the Association of Professional Engineers' fundamental examination in organic chemistry would find this course helpful.

The course covers nomenclature, physical properties, reactions, and preparations of the major classes of organic compounds: aliphatic, aromatic, halides, alcohols, ethers, carboxylic acids, esters, aldehydes, ketones, amines and amides. Attention is focused on the uses of organic chemicals in industrial preparations and applications, e.g.: oil refining, the petrochemical industry, polymers, etc.

Discussions of infrared, nuclear magnetic resonance, mass spectrometry, and ultraviolet spectroscopy are included. Attempts are made to give a working knowledge of interpretation of spectra; theory of chromatography (column, paper, thinlayer) and its application to organic qualitative analysis.

30.906 See 30.905

30.909 — PRE-ENTRY CHEMISTRY
Non-credit

An upgrading course for people whose background in chemistry is weak, and a refresher course for those who have not studied chemistry for several years. Meets the Chemistry 11 program entrance requirements for BCIT.

Text: Morris Hein: Foundations of College Chemistry (Alternate Edition).
Special fee.

30.910 — CHEMISTRY
Non-credit

This course meets the Chemistry 12 entrance requirement for BCIT. It is an upgrading course for people with a weak background in chemistry, or a refresher course for those who have not studied chemistry for several years. Applicants must have passed Chemistry 11 or an approved equivalent chemistry course to register.

30.913 — GAS AND LIQUID CHROMATOGRAPHY
Unit: 1.0

Introduces students to the uses of gas chromatography (GC) and high performance liquid chromatography (HPLC) in solving organic analysis problems. Applications of GC and HPLC are found in energy, chemical, food and forest industries, as well as laboratories concerned with environmental and clinical work.

Topics are separation theory; instrument operation and trouble shooting; quantitative and qualitative analysis; columns, detector application and sample preparation.

30.914 — MASS SPECTROMETRY
Unit: 1.0

Of interest to individuals who are presently working in analytical laboratories who require more knowledge of the application and instrumentation of mass spectrometry.

On successful completion students are more familiar with the use and application of a mass spectrometer.

Topics are instrumentation, clinical environmental and industrial applications; combination analytical techniques (Gas/Liquid Chromatography — Mass Spectrometry).

30.918 — LABORATORY SAFETY AND ORGANIZATION
Unit: 1.0

Enable the following people to manage science laboratories efficiently and safely using a scientific approach to overcome inherent problems and dangers: a) laboratory assistants, technicians, teaching assistants, and science support staff in education establishments; b) stores personnel in industry, research organizations, schools, hospitals, colleges, and universities; c) laboratory assistants and technicians in industrial and research laboratories; d) secondary school students, graduates.

Consists of lectures, laboratory instruction and open discussion on the general rules, dangers and precautions from general operations, chemicals, poisons and explosions.

31.900 — ENGLISH FUNDAMENTALS
Non-credit

A basic course for students wishing to upgrade their ability to write correct and effective English.

Students review the fundamentals of clear and effective writing and will develop practical language skills.

The course discusses planning and organizing techniques, elements of effective paragraphs, sentence structure and word choice. Students do written exercises at every session.

Note: This course requires a level of English language proficiency approximately equivalent to Grade 12. It is not designed to diagnose and remedy second language difficulties.

31.902 — BASIC BUSINESS AND TECHNICAL COMMUNICATION
Unit: 1.0

For those wishing to improve their basic communication skills. An excellent first course for those who have had little formal training in business and technical communication. Students learn the basic concepts and skills necessary to communicate effectively in the business and industrial world.

The course covers basic principles of effective style and organization; appropriate formats for letters, memos, and reports; oral reporting, telephone and interview techniques; dictating skills.

Note: Students with basic English language difficulties will be referred to other, more appropriate courses.

31.905 — READING IMPROVEMENT AND STUDY SKILLS
Non-credit

Designed for those who wish to improve their work-related reading skills. It is also appropriate for those planning to return to school.

Students learn to adapt their reading styles to the job at hand, to improve their reading rate and comprehension, and to organize and use information they read.

This course emphasizes the development of reading rate and comprehension. Major skills taught include pre-reading, surveying, skimming and scanning, note-taking and related learning and thinking techniques.

Note: Students with basic English language difficulties will be referred to other, more appropriate courses.

31.908 — DEFENSIVE WRITING
Unit: 0.5

This short weekend course is a new approach to the organizing and writing of memos, letters and reports.

It teaches you how to avoid some common accidents in spelling, grammar and sentence construction.

31.910 — BUSINESS AND TECHNICAL CORRESPONDENCE
Unit: 1.0

This course is for anyone who wishes to improve letter and memo writing skills. Those who have, or soon will have, letter and memo writing duties find the course especially relevant.

The course includes effective letter and memo style and organization, and techniques for completing the writing task efficiently. Specific types of corresondence covered include sales letters, collection letters, application letters and résumés, and a variety of memoranda.

Note: Students with basic English language difficulties are referred to other, more appropriate courses.

31.911 — BUSINESS AND TECHNICAL REPORT WRITING
Unit: 1.0

A special combination of 31.912 Business Report Writing and 31.914 Technical Report Writing. Designed to improve the report writing skills of persons presently employed in business or industry.

The organization and presentation of a wide variety of reports are discussed and practised. Particular attention is given to those types of reports that best meet the students' vocational needs.

The course includes collecting and using data, organizing report format and structure, summarizing, using graphics and developing an effective business writing style.

31.912 — BUSINESS REPORT WRITING
Unit: 1.0

For those who wish to improve their ability to write effective business reports.

Students learn to report business information clearly and convincingly.

The course includes collecting and using data, organizing report format and structure, summarizing, using graphics and developing an effective business writing style.

Note: Students with basic English language difficulties are referred to other, more appropriate courses.

31.914 — TECHNICAL REPORT WRITING
Unit: 1.0

Designed for those who need to write technical, engineering, or scientific reports.

Students learn how to report technical and scientific information clearly, effectively, and quickly.

The course includes collecting and using data, organizing report format and structure, summarizing, using graphics and developing an effective technical writing style. Specific types of reports covered will be determined by the vocational needs of the students.

Note: Students with basic English language difficulties are referred to other, more appropriate courses.

31.915 — BUSINESS AND TECHNICAL WRITING
Unit: 1.0

For those who wish to improve their business and technical correspondence and report writing.

It covers the organization and presentation of material, formats, and clear style. Students are encouraged to bring in writing samples and work for individual instruction.

31.922 — WRITING FOR THE COMPANY
Unit: 1.0

Designed to help anyone in a position requiring major writing or editing skills, including those whose duties include editing the work of others, writing for public consumption, preparing manuals or documentation and other major writing jobs. The course is designed so that students with either technical or non-technical writing backgrounds will profit from it.

Topics include editing, writing specialized documents (manuals, proposals, house journals, etc.), supervising the writing of others and printing-related topics (layout, graphics, etc.).

31.925 — WRITING FOR HEALTH PROFESSIONALS
Unit: 0.5

Designed for health professionals who want to improve their ability to write clearly, concisely, and efficiently.

Topics include the writing process, letters and memos, informal informational and analytical reports, instructions and process descriptions.

Students must submit samples of their writing when they register for the course.

31.930 — WRITING FOR BUILDERS
Unit: 0.5

Designed to improve the occupational writing skills of persons engaged in the construction industry.

Topics include organizing information, writing concisely, planning reports, writing effective letters and memos.

31.970 — WRITING FOR RESULTS
Unit: 0.5

This weekend course is for those who wish to improve their letters, memos, reports and other major forms of written communication. Participants learn simple techniques to make their writing clearer, better organized and more effective in getting the job done.

Students are requested to bring samples of their writing to the first class.

31.972 — WRITING REPORTS
Unit: 0.5

This weekend workshop begins with how to organize the report writing task efficiently and then covers selection and organization of information, effective use of formats and layout, analysis of the audience, reporting factual information and making recommendations. Participants may choose either a technical or a business focus in the workshop exercises.

31.976 — WRITING EFFECTIVE LETTERS
Unit: 0.5

This weekend course is for those whose major writing task is letters. It deals with clear, effective and appropriate letter style and organization, and applies these principles to various types of letter writing including sales, collection, inquiries and general, claim, adjustment, and application letters.

31.980 — GENERAL TELEPHONE ANSWERING SKILLS
Non-credit

This non-credit course is designed for everyone whose work involves answering and making telephone calls. Through classroom discussions, written assignments, pre-recorded sample calls and role playing students are introduced to effective telephone skills. Participants learn how to answer and transfer incoming calls efficiently, plan and make outgoing calls effectively and acquire effective, efficient telephone communication skills.

31.996 — COMPREHENSIVE READING, WRITING AND STUDY SKILLS
Non-credit
(80 hours)

An integrated course which provides extensive coverage of all reading, writing and study skills necessary for successful completion of technology programs.

31.997 — EFFECTIVE WRITING
Non-credit
(24 hours)

This course develops the basic skills of effective writing and their application to business and technical writing. Covers organization, paragraph development and effective sentences, in letter and memo writing.

Note: Fees will be reduced for students registered concurrently in 31.997 Effective Writing and 31.998 Textbook Reading and Study Skills.

31.998 — TEXTBOOK READING AND STUDY SKILLS
Non-credit
(24 hours)

The course develops the skills necessary for success in learning. It covers reading textbooks, taking notes, writing exams, managing time.

Note: Fees will be reduced for students registered concurrently in 31.997 Effective Writing and 31.998 Textbook Reading and Study Skills.

32.X95 — PRE-ENTRY MATHEMATICS (Correspondence)
Non-credit

A self-study version of 32.950 Pre-Entry Mathematics. Meets the BCIT Algebra 12 entrance requirements.

Students must have a 'C' or better in Algebra 11 or approved equivalent mathematics course to register.

Contact the Directed Study Centre at BCIT for registration details.

Note: Students who have had difficulty with math, or those who have been away from school for some years are advised to take 32.950 Pre-Entry Mathematics.

32.507/607 — PROBABILITY AND STATISTICS 1
Unit: 2.0

An introduction to statistical methods and their application to technological problems.

The course includes the organization and graphical representation of data; frequency distributions; measures of central tendency — the arithmetical mean, the median, the mode quartiles, deciles, percentiles; measures of variation — the mean deviation, the standard deviation, quartile deviation; introduction to probability; the rules of addition and multiplication; random variables; mathematical expectation; theoretical distributions — the binomial distribution, the Poisson distribution, the normal distribution curve and use of tables to obtain normal curve areas; populations and samples — sampling techniques, sampling distributions, problems of estimation, small samples and Student's distribution; confidence intervals; tests of hypotheses; types of error; operating characteristic curves; linear regression; method of least squares; correlation.

Note: This course requires a working knowledge of mathematics at the Grade 12 level.

32.508/608 — PROBABILITY AND STATISTICS 2
Unit: 2.0

The course covers further hypothesis testing; the Chi-square distribution; analysis of variance and experimental design; non-parametric statistics; non-linear and multiple regression; introduction to quality control.

Prerequisite: 32.507/607 Probability and Statistics 1.

32.509/609 — INTRODUCTORY NUMERICAL METHODS AND COMPUTER PROGRAMMING
Unit: 2.0

These units cover a course on introductory numerical methods together with computer programming techniques, the nature of numerical methods algorithms, iterative methods in the solution of algebraic and transcendental equations; matrix methods, systems of linear equations and their solutions; the Gauss-Jordan method; numerical integration trapezoidal and Simpson's rules; Taylor's series and the numerical solution of elementary differential equations. The emphasis is on technical problems, and computer programming methods are presented which allow numerical solutions to be processed on the IBM 4341 system.

Prerequisite: 32.931 Calculus 1 and programming experience.

32.522/622 — MATHEMATICS 1 FOR ELECTRICAL TECHNOLOGY

This course is no longer offered. Students must register in 32.980 Mathematics 1A for Electrical Technology.

32.524/624 — MATHEMATICS 2 FOR ELECTRICAL TECHNOLOGY

This course is for students who have successfully completed 32.522/622 Mathematics 1 for Electrical Technology. All others should register in 32.981 Mathematics 1B for Electrical Technology.

32.526/626 — MATHEMATICS 3 FOR ELECTRICAL TECHNOLOGY
Unit: 2.0

A course in calculus and its application in the electrical and electronic fields.

Topics include functions and graphs; rates of change and the derivative; higher derivatives; maxima and minima; the differential and small changes; the differentiation of algebraic products, quotients, and composite functions; integration, the indefinite and definite integrals involving algebraic functions; the differentiation and integration of trigonometric, exponential, and logarithmic functions.

Prerequisite: 32.980/981/982 — Mathematics 1A, 1B, 1C for Electrical Technology, or equivalent.

32.528/628 — MATHEMATICS 4 FOR ELECTRICAL TECHNOLOGY
Unit: 2.0

A course in further calculus and its application in the electrical and electronic fields.

The course gives a brief review of essential calculus items offered in courses 32.526/626 Mathematics 3 for Electrical Technology; calculus of hyperbolic functions; special integration techniques; partial derivatives; first and second order differential equations.

Prerequisite: 32.526/626 Mathematics 3 for Electrical Technology, or equivalent.

32.530/630 — LAPLACE TRANSFORM METHODS FOR ELECTRICAL TECHNOLOGIES
Unit: 2.0

The course covers development of a table of Laplace transform pairs for functions and operations: finding inverse transforms, tables of transforms, partial fractions, simple order, double order, and complex poles; poles and zeros; circuit problems; single loops with DC inputs; R-L, R-C, and R-L-C; initial condition voltage generators; d-domain circuit diagrams; analysis of circuits in the s-domain (AC and DC); review of determinants and Cramer's Rules; self and mutual impedances; driving point and transfer impedances, transients in multimesh circuits; transfer functions and frequency responses; as well as selected topics from control engineering.

Text: "Transform Circuit Analysis for Engineering and Technology", Stanley.

Prerequisite: 32.528/628 Mathematics 4 for Electrical Technology.

32.540/640 — MATHEMATICS FOR ELECTRICAL TECHNOLOGY
Unit: 2.0

An accelerated course based on the material covered in 32.980/981/982 Mathematics 1A, 1B, 1C for Electrical Technology. Open only to students currently registered in 43.529/629 Electrical Circuits AC/DC and 32.980/981/982 Mathematics 1A, 1B, 1C for Electrical Technology.

32.607 See 32.507
32.608 See 32.508
32.609 See 32.509
32.626 See 32.526
32.628 See 32.528
32.630 See 32.530
32.640 See 32.540

32.900 — ALGEBRA 1
Non-credit

A review of appropriate mathematical topics designed especially as preparation for 32.901 Algebra 2. The course is tailored to meet the individual needs of the students in the class.

To assist in the correct placement of students in either 32.900 Algebra 1 or 32.901 Algebra 2, a diagnostic test, based on the content of 32.900, will be given to all students in the first meeting of 32.900 and 32.901.

Text: "Introduction to Technical Mathematics", A.J. Washington, Cummings.

32.901 — ALGEBRA 2
Unit: 1.0

A course in the application and theory of algebraic equations and functions as used in engineering technologies. Such equations and functions are considered from both analytical and graphical points of view. The program includes an introduction to right triangle trigonometry.

Text: "Basic Technical Mathematics with Calculus", 3rd Edition, A.J. Washington, Cummings.

Prerequisite: 32.900 Algebra 1, or recent Math 12.

32.902 — LOGARITHMS AND ANALYTIC GEOMETRY
Unit: 1.0

A study of the theory and applications of common and natural logarithms. Emphasis will be placed on the plotting of logarithmic and semilogarithmic graphs and their interpretation and use.

The course includes an introduction to analytic geometry, in particular a study of the geometrical and practical properties of the conic sections. A brief consideration of quadratic surfaces is included.

Text: "Basic Technical Mathematics with Calculus", 3rd Edition, A.J. Washington, Cummings.

Prerequisite: 32.901 Algebra 2.

32.903 — TRIGONOMETRY
Unit: 1.0

A course for students in Engineering Technologies in the application and theory of trigonometric functions.

The course includes right angle trigonometry, vector and triangle problems, trigonometric identities and graphing, polar coordinates, transformations and radian measure.

Text: "Basic Technical Mathematics with Calculus", 3rd Edition, A.J. Washington, Cummings.

Prerequisite: 32.901 Algebra 2.

32.931 — CALCULUS 1
Unit: 2.0

This is an introductory course in calculus and its technical applications involving the differentiation and integration of algebraic functions. Some of the topics included are related rates, curve sketching, applied maxima and minima, areas, volume, centroids, and moments of inertia.

Text: "Basic Technical Mathematics with Calculus", 3rd Edition, A.J. Washington, Cummings.

Prerequisite: 32.901 Algebra 2, 32.902 Logarithms and Analytic Geometry, and 32.903 Trigonometry.

32.932 — CALCULUS 2
Unit: 2.0

The course covers further calculus and technical applications involving differentiation and integration of trigonometric, logarithmic, and exponential functions. Included in the course are the conics, power series, partial differentiation, and an introduction to differential equations.

Text: "Basic Technical Mathematics with Calculus", 3rd Edition, A.J. Washington, Cummings.

Prerequisite: 32.931 Calculus 1, or equivalent.

32.933 — CALCULUS 3
Unit: 2.0

A course in differential equations with emphasis on technical applications throughout.

Topics include first order differential equations; variables: separable, homogeneous, linear, and Bernouilli's, second order differential equations with constant coefficients; complementary functions and particular integrals, the D operator, miscellaneous methods of solving differential equations.

Prerequisite: 32.932 Calculus 2.

32.935 — BASIC 1 — AN INTRODUCTION TO MICROCOMPUTERS
Unit: 1.0

Designed for engineering technology students who have had no previous experience with BASIC programming or microcomputers. Students become familiar with computer terminology and can write sample BASIC programs. Topics include computers, input/output devices, graphics, languages, interpreters, monitors and operating systems; BASIC concepts and features (variables, algebraic operators, assignments); input/output; elementary system commands; branching; termination; comments; statement and program editing. Students use microcomputers.

32.936 — BASIC 2 FOR ENGINEERING TECHNOLOGY
Unit: 1.0

Presents further concepts and features of the BASIC language for engineering technology students. After completing this course students will be literate in BASIC. Topics include further I/O (READ, DATA, RESTORE), array variables, looping, system commands, subroutines, machine level statements, arithmetic and error conditional branching, graphics statements and files and file operations.

Prerequisite: 32.935 — BASIC 1.

32.937 — INTRODUCTION TO COMPUTER AIDED DESIGN 1
Unit: 1.0

An introduction to mathematics and programming of interactive computer graphics and computer aided design and drafting. Students use microcomputers.

Prerequisite: 32.901 Algebra 2 plus some knowledge of BASIC or instructor's permission.

32.938 — COMPUTER AIDED DESIGN 2
Unit: 1.0

The second part 32.937 Computer Aided Design.

Upon completion of both 32.936 and 32.937 students understand elementary CAD techniques.

Prerequisite: 32.937 Introduction to Computer Aided Design 1.

32.950 — PRE-ENTRY MATHEMATICS
Non-credit
(90 hours)

An upgrading and/or refresher course for students who have either not completed high school mathematics, or who have completed it more than three years previously, or whose mathematics background is otherwise weak. Meets the Algebra 12 entrance requirements for BCIT. Students intending to enter a BCIT technology which requires Algebra 12 (grade of C+ or better) must achieve a final mark of 65% or higher in 32.950 Pre-Entry Mathematics. Students must have passed Algebra 11, or an approved equivalent mathematics course to register.

32.957 — STATISTICAL QUALITY CONTROL WITH INDUSTRIAL APPLICATIONS
Unit: 1.0

The course covers the application of statistical methods to quality control of industrial product, quality control charts, and acceptance sampling.

Text: "ASTM Manual on Quality Control of Materials", and "ASTM Military Standard 105D-Sampling Procedures and Tables for Inspection by Attributes", U.S. Government Printing Office.

Prerequisite: 32.507/607 Probability and Statistics 1, or equivalent.

32.980 — MATHEMATICS 1A FOR ELECTRICAL TECHNOLOGY
Unit: 1.0*

Topics include equation of straight line, geometric characteristics; systems of equations and methods of solution; substitution, elimination and determinants; homogeneous and non-homogeneous linear equations; linear independent equations, more unknowns than equations; redundant and inconsistent equations; applications to electrical networks. The course also includes a review of basic trig functions, radian measure and circular motion, solution of right triangles, sine law and cosine law.

Prerequisite: 32.950 Pre-Entry Mathematics, or recent Algebra 12.

32.981 — MATHEMATICS 1B FOR ELECTRICAL TECHNOLOGY
Unit: 1.0*

Topics include trig identities, graphing of sinusoidal functions, addition of sinusoidal waveforms, complex numbers, rectangular and polar form for addition and multiplication, phasor representation of sinusoidal waveform.

Prerequisite: 32.980 Mathematcis 1A for Electrical Technology.

32.982 — MATHEMATICS 1C FOR ELECTRICAL TECHNOLOGY
Unit: 1.0*

Topics include AC circuit calculations using phasors; base and exponent, inverse relationship; log-log and semi-log graph paper; logarithmic units, decibels; exponential rise and exponential decay functions.

Prerequisite: 32.981 Mathematics 1B for Electrical Technology.

*Note: No credit will be given for the above three courses until all are completed for a total of 3.0 units.

33.404 — MINING GEOPHYSICS
Unit: 1.5

This course is designed to give a broad understanding of the use of geophysics in mineral exploration to prospectors, geologists and other mining company personnel. The subject is presented from the following viewpoints: a) the theory behind the uses of each geophysical method; b) instrumentation and field procedures; c) interpretation.

Topics include general survey planning; SP, resistivity and IP methods; magnetic and gravity methods; electromagnetic methods; radiometric methods; seismic methods; and down-hole methods.

Prerequisite: 33.508/608 and 33.509/609 Physics 1 and 2, or equivalent, and first year university geology desirable.

33.508/608 — PHYSICS 1
Unit: 1.0 — 33.508
1.0 — 33.608

Topics include kinematics, linear and rotational dynamics, statics, properties of matter, heat, thermodynamics, and waves.

Text: "Elements of Physics", 9th Edition, Smith & Cooper, McGraw-Hill, 1979.

Prerequisite: Mathematics 12 or Algebra 12, Physics 11 is desirable. This course, together with 33.509/609 Physics 2, is designed to satisfy the background knowledge of physics required in various engineering and related technologies.

33.509/609 — PHYSICS 2
Unit: 1.0 — 33.509
1.0 — 33.609

This course completes the sequence designed to satisfy the background knowledge required in the various engineering and related technologies.

Topics include sound, light and optics, basic electricity and magnetism, basic semi-conductor theory, and atomic and nuclear phenomena.

Mathematical treatment requires algebra and trigonometry, and possibly some calculus.

Text: "Elements of Physics", 9th Edition, Smith & Cooper, McGraw-Hill, 1979.

Prerequisite: 33.508/608 Physics 1, or equivalent.

33.608 See 33.508
33.609 See 33.509

33.909 — PRE-ENTRY PHYSICS
Non-credit

Students are advised to complete any necessary upgrading in mathematics prior to beginning Pre-Entry Physics.

An upgrading course for people whose background in physics is weak, and a refresher course for those who have not studied physics for several years. This course meets the Physics 11 program entrance requirement for BCIT.

40.512 — BUILDING CONSTRUCTION 1
Unit: 2.0

Intended for designers, drafters, builders, inspectors, and appraisers. The student is introduced to the basic principles of construction practices and develops the ability to prepare a basic set of working drawings.

Topics include site layout, foundation details, western frame details and preparation of a partial set of working drawings for a single family residence. A drafting equipment list is issued on the first night of class.

Text: National Building Code of Canada (current ed.).

40.522/622 — BUILDING CONSTRUCTION 2
Unit: 1.0 — 40.522
1.5 — 40.622

This course deals with fire-resistive construction.

On successful completion students better understand the principles of fire-resistive building construction.

The course covers construction systems and details; building science (weathering, deterioration and heat transfer); standard assembly of materials in industrial post and beam; masonry bearing, steel frame and concrete structures; curtain walls, panel walls, partitions; exterior and interior finishing materials and detailing. Assignments include free-hand, preliminary working drawing sketches.

Prerequisite: 40.512/612 Building Construction 1, or permission of the instructor.

40.543/643 — ELECTRICAL SYSTEMS PART 1
(formerly Building Services Electrical)
Unit: 1.0

An introductory course in illumination for those persons wishing knowledge of electrical systems pertaining to buildings.

The first of the course deals with the language of lighting, design methods, the characteristics and types of light sources, and the economics of lighting. As the lighting system is generally designed by the Electrical System Designer, it is necessary to have a working knowledge of it when studying the Electrical System.

The end of the course introduces the basic electrical theory presented in Electrical Systems Part II, 40.643.

Text: Westinghouse Lighting Handbook

40.612 — BUILDING CONSTRUCTION 1
Unit: 3.0

A continuation of 40.512 this course covers western frame and modified post and beam construction, fireplace details, stair details, interior and exterior finishing, door and window details and preparation of a set of working drawings including details for the above suject areas.

Text: "National Building Code of Canada" (current ed.).

Prerequisite: 40.512 Building Construction 1 or permission of the instructor.

40.622 See 40.522

40.643 — ELECTRICAL SYSTEMS — PART II
(formerly Building Services Electrical)

At successful completion the student can
1) plan, with the Electrical Designer, the electrical system for a specific building
2) read and work with common electrical drawings and specifications
3) understand single and three phase systems
4) understand power factor correction for minimal operating costs
5) recognize and avoid building designs that create costly electrical design problems.

Prerequisite: 40.543 Electrical Systems I or equivalent, 32.901 Algebra 2, 32.902 Logarithms and Analytic Geometry, 32.903 Trigonometry.

40.901 — DRAFTING AND DESIGN — INTRODUCTION TO ARCHITECTURAL DRAFTING AND DESIGN
Unit: 2.0

An introduction to architectural drafting and the history of architectural design for those with little or no experience. It provides training in most aspects of architectural drafting operation and will familiarize students with the technical vocabulary used. It also serves as preparation for advanced drafting presentation and design courses. On successful completion the student is knowledgeable in the specific aspects of architectural design, capable of performing a simple graphical presentation by utilizing most drafting equipment, and can present ideas through free-hand sketching, lettering and drafting.

The course covers the historical evolution of structural systems, materials used through the ages, and analysis of functional and visual aspects of design from 4000 B.C. to the 19th Century.

Note: Technical vocabulary is built by a comparative method through lectures on history and architecture. Drafting assignments concentrate on building element description rather than on geometrical subjects.

40.902 — DRAFTING AND DESIGN — ARCHITECTURAL DRAFTING AND DESIGN PRESENTATION
Unit: 2.0

Persons with drafting experience outside an architectural office can improve their comprehension of two and three dimensional graphical presentations, and develop an understanding of constraints affecting design. On successful completion students are familiar with the systematic approach to drawing presentation, capable of explaining a design three-dimensionally, aware of various design restrictions and familiar with design services offered in industry.

The course includes descriptive geometry and its use in design presentation; description of building elements through isometric and axonometric drawing; presentation in one and two-point perspectives; preliminary and design drawings; application of regulations in design drafting and presentations.

Note: This course is a guide to restriction in design and existence of approving authorities through all levels.

Prerequisite: 40.901 Drafting and Design — Introduction, or permission of the instructor.

40.903 — DRAFTING AND DESIGN — FUNDAMENTALS OF ARCHITECTURAL DESIGN
Unit: 2.0

An introduction to architectural design as it relates to functional aspects, based on problems in residential buildings.

On successful completion students are knowledgeable in the specific aspects of design principles; can take simple design problems and bring them to a satisfactory form for further design development; understand clients statement of needs; can cope with basic design vocabulary, and can take directions from a superior and delegate to a junior.

Topics include site determinants; program planning; living, dining, sleeping, dressing, kitchen and utility facilities; planning multiple dwellings; student residences; and other topics in the residential field.

Prerequisite: 40.902 — Drafting and Design.

40.904 — ARCHITECTURAL AND INDUSTRIAL ILLUSTRATION
Unit: 1.0

Of interest to anyone with a need to express design ideas in a visual form.

The objective is to provide grounding in the fields of architectural and industrial illustration, giving participants a feel for the scope, styles, and techniques of contemporary presentation.

The course gives an introduction to illustration: elements of rendering form and space; entourage techniques; perspective workshop; photographic techniques, black/white, color; and mixed media.

40.914 — INTRODUCTION TO CONSTRUCTION INDUSTRY PROCEDURES
Unit: 1.0

An introduction of construction contracting procedures for persons already acquainted with building construction. A working knowledge of how construction contracts are made provides students with the prerequisite knowledge for other courses in estimating and construction specification.

Topics include the basis of real property development; design, bidding and contracting procedures; types of construction contracts; principles of measurement; measurement and specification of construction work, and the basis of construction costs.

Text: "Construction Contracts and Specifications" by G.M. Hardie, Reston Publishing, 1981.

40.915 — NATIONAL BUILDING CODE
Unit: 1.0

This course presents the purpose, scope, and content of the current National Building Code of Canada. Of use to architects, draftsmen, building inspectors, contractors, mortgaging authorities, and those in similar areas of the construction industry who are designing, approving, or carrying out projects. This code is now in force in B.C.

The course gives a short history of the code, general review of contents, and detailed consideration of Part 3 Use and Occupancy, and Part 9 Housing and Small Buildings.

Text: "National Building Code of Canada", Current Edition, published by National Research Council of Canada.

40.920 — ESTIMATING CONSTRUCTION WORK 1
Unit: 1.0

This course will establish a base for construction estimating for people with no previous training. On successful completion students are prepared for CIQS Examination 103, "Measurement of Construction Work".

The course includes the principles and techniques of measuring construction work; preparation of reliable measurements of concrete, formwork, excavation and rough carpentry.

Text: "Fundamentals of Construction Estimating and Cost Accounting", K. Collier, Prentice Hall.

Prerequisite: Some knowledge of contemporary residential and commercial construction is desirable.

40.921 — ESTIMATING CONSTRUCTION WORK 2
Unit: 1.0

Beneficial to people seeking employment with subcontractors, general contractors or designers. Also, it assists students to prepare for the CIQS Examination 203, "Measurement of Construction Work 2".

Upon successful completion students are more knowledgeable in construction measuring techniques and pricing methods, tendering procedures and budget estimating.

Using lectures, discussions and assignments the students are guided through a series of realistic projects where they measure construction work, determine and apply unit prices, and prepare tenders.

Text: "Fundamentals of Construction Estimating and Cost Accounting", K. Collier, Prentice Hall; and "Means Cost Data", Means Co. Inc.

Prerequisite: 40.920 Estimating Construction Work 1.

40.922 — ESTIMATING CONSTRUCTION WORK 3
Unit: 1.0

This course refines the measurement techniques introduced in Estimating Construction Work 2, and develops the knowledge and skills required to produce reliable prices for effective estimates. it also assists students to prepare for the CIQS examination 302, "Measurement of Construction Work 3" and 303 "Pricing and Bid Procedure".

Through lectures, discussions and assignments the student prepares selected portions of construction work to produce complete estimates.

Topics include the preparation of tenders; introduction to cost accounting; computer applications in the construction industry. A detailed study is made of general cost factors, unit price analysis and bidding procedures, advanced problems in measurement, and pricing techniques.

Text: "Fundamentals of Construction Estimating and Cost Accounting", K. Collier, Prentice Hall; "Means Cost Data", Means Co. Inc.; "CIQS Method of Measurement", Canadian Institute of Quantity Surveyors.

Prerequisite: Extensive knowledge and experience of building construction is necessary to understand the content of this course. A second class standing in 40.921 Estimating Construction Work 2, or a Diploma in Building Technology from a recognized Institute of Technology, or the instructor's permission.

40.934 — CONSTRUCTION SPECIFICATIONS
Unit: 1.5

Develops the student's understanding of specifications as bidding and contract documents, and provides specific knowledge of construction materials and methods. Successful students are able to compile and interpret specifications of work in the structural and architectural trades. They develop judgement in the selection and specification of construction materials and a relevant technical vocabulary.

The course covers writing and organizing specifications according to the master format, sources and use of data on selected structural and architectural materials, office organization, and selected contractual procedures.

Text: "Construction Contracts and Specifications" by Glenn M. Hardie, published by Reston Publishing Co., Reston, Virginia, 1981.

40.954 — CONSTRUCTION ADMINISTRATION
Unit: 1.0

Students learn company administration and operational procedures used in construction companies of various sizes. This course prepares advanced students in building construction for middle management positions.

Subjects include companies, partnerships, and organizations; basic and contract accounting; contract law; estimating; bonds and insurance liens; scheduling; purchasing and general office practices; labor relations; and bid practices.

Text: "Construction Contracting", R.H. Clough, 3rd Edition.

Prerequisite: Extensive knowledge and experience of building construction will be necessary to adequately understand this course, or a diploma in Building Technology from a recognized institute of technology or permission of the instructor.

40.964 — PROJECT MANAGEMENT
Unit: 1.5

Prepares advanced students in building construction CIQS, to meet the challenge of the "Management Contract" and the "Phased Construction Process". CIQS gives credit for 307 "Construction Project Management" providing a first class standing is achieved.

Students learn the fundamentals of project management, and the advanced planning and cost control systems necessary to manage large commercial or institutional projects.

Topics include principles of management, financing and feasibility analysis, planning, subcontract administration, CPM and computer processing, cost control and related topics.

Text: "Professional Construction Management", Barrie and Paulson, McGraw-Hill.

Prerequisite: Extensive knowledge and experience of building construction, or a diploma in Building Technology from a recognized institute of technology or permission of the instructor.

40.974 — COMPUTER APPLICATIONS IN BUILDING TECHNOLOGY 1
Unit: 1.0

This introductory course deals with the use of computers in the building industry for individuals with little or no computer experience and for those with computer experience who wish to broaden their knowledge of computer applications for the building industry.

Upon successful completion students have an understanding of the capabilities and limitations of the digital computer; a basic knowledge of computer hardware; sufficient programming to write and document simple BASIC programs, and a knowledge of practical computer applications for Architecture and Construction.

Lectures are given on computer programming, program documentation, computer hardware technology, word processing, computer systems, and computer-aided design and drafting (CADD).

Lab work covers 1) writing, documenting, and running building industry computer programs using BASIC language, and 2) using commercial software packages that have direct applications for the building industry.

40.975 — COMPUTER APPLICATIONS IN BUILDING TECHNOLOGY 2
Unit: 1.0

This course deals with advanced computer programming techniques for individuals in the building industry who have completed the introductory course. The course has two main subjects: 1) computer file handling procedures for architectural and construction business applications, and 2) computer-aided design and drafting (CADD) theory and applications.

Lab work covers 1) writing, documenting, and running CADD programs for architectural and construction applications, and 2) analyzing and operating commercial CADD software.

Prerequisite: 40.974 Computer Applications in Building Technology 1.

41.311 — POLLUTION SCIENCE
Unit: 1.0

This is a day school course. Students must obtain permission from the Department Head to attend.

The course presents an introduction to the organic chemistry of industrial pollution. Application to local industry is emphasized.

Prerequisite: 30.902/903 Chemical Principles 1 and 2.

41.314/414 — MINERAL PROCESSING
Unit: 1.0 — 41.314
1.0 — 41.414

This course deals specifically with mineral processing as applied to the B.C. mining industry.

The course covers the essential operations of applied mineral processing, i.e.: crushing, grinding, screening, gravity separation, cyclone classification; flotation, sedimentation, thickening, filtration. Design and solutions of operating problems are emphasized. Some laboratory work will be performed.

41.413 — ENVIRONMENTAL ANALYTICAL METHODS
Unit: 2.0

This is a day school course. Students require permission of the Department Head to attend.

It surveys methods of analysis for water, waste water and materials related to control of sanitation and water quality.

Reference is made to the most recent edition of "Standard Methods for the Analysis of Water and Waste Water" published by the American Public Health Association. However, in many cases, adaptation and improvements are introduced.

Analysis of field samples for some of the following will be done: cyanide, pesticides, arsenic, mercury, nitrogen, surfactants, phosphates, sulphates, chlorides, proteins, carbohydrates, tannin and lignin, phenols and heavy metals. Special attention is given to proper sampling techniques.

Prerequisite: 30.510 Analytical Chemistry, or equivalent.

41.414 See 41.314

41.448 — POLLUTION CONTROL EQUIPMENT AND TECHNIQUES
Unit: 1.5

Familiarizes the student with engineering methods currently used for the control and/or treatment of the major air and water pollutants.

Methods include electrostatic precipitators; scrubbers; cyclone collectors; fabric filters; control of motor vehicle emissions; stack sampling; cooling towers; industrial and municipal wastewater treatment processes; oil spill recovery techniques; solid waste disposal methods and treatment of radioactive wastes.

41.502/602 — METALLURGY 1
Unit: 1.0 — 41.502
1.0 — 41.602

This introductory course acquaints students with the concepts of basic physical metallurgy and with metallurgy testing methods. Those completing the course have an understanding of metallurgical principles and methods of physical testing and metallography.

The course includes casting and forming of metals, heat treatment, physical testing, nondestructive testing and metallurgy of welding. Laboratory work involving metallorgraphy, heat treatment and corrosion, constitutes approximately half of the course.

41.503/603 — METALLURGY 2
Unit: 1.0 — 41.503
1.0 — 41.603

Further develops the subject areas covered in Metallurgy 1 to a more advanced level. It is the equivalent to the daytime course 41.304/404 Physical Metallurgy.

Topics include iron and steel-making processes; solidification of metals and alloys; casting methods and defects; foundry technology; metal-forming operations; review of phase diagrams for binary alloy systems; isothermal transformations in steels; heat-treating techniques; nonferrous metals and alloys; welding metallurgy; principles of nondestructive testing. Lectures and field trips to industrial plants are supplemented by laboratory sessions which emphasize physical testing of materials, metallography, service failure investigation and nondestructive testing.

Prerequisite: 41.502/602 Metallurgy 1.

41.505/605 — MINERAL ANALYSIS
Unit: 2.0 — 41.505
2.0 — 41.605

Deals specifically with chemical methods of ore analysis, and provides students with a working background in analytical chemistry or assaying, with an opportunity to develop laboratory skills.

The course covers the general methods of ore analysis; principles and practice of fire assaying for gold and silver; gravimetric and volumetric analysis.

Prerequisite: 30.902/903 Chemical Principles 1 and 2, or equivalent, is highly desirable.

41.506/606 — INTRODUCTION TO CHEMICAL ENGINEERING
Unit: 1.0 — 41.506
1.0 — 41.606

This course is equivalent to Day School course 41.341/441 Unit Operations.

It should be of particular interest to consulting engineering personnel, technologists and engineers employed or associated with chemically-based industries, who do not have a formal background in Unit Operations of the Chemical Process Industries.

Unit Operations include such areas as heat transfer, evaporation, materials transfer, and distillation in industries such as pulp and paper.

Topics include basic engineering thermodynamics, psychrometry, liquid-liquid and solid-liquid extraction, and fluid flow.

41.602 See 41.502
41.603 See 41.503
41.605 See 41.505
41.606 See 41.506

41.902 — PAINT TECHNOLOGY
Unit: 1.5

An introductory course designed for those actively engaged in paint and coatings manufacture (both technical and production sides), raw material suppliers, architects, professional decorators, and paint salesmen.

On successful completion students have an understanding of the raw materials used in the coating industry, the methods by which coatings are manufactured, application methods and formulating techniques.

41.903 — PAINT TECHNOLOGY — PART 1 — LATEX PAINTS
Unit: 0.5

Lectures and laboratory presentations are designed to complement the basic course in Paint Technology.

On successful completion students are knowledgeable about latex paints.

Topics include aspects of polymer emulsion manufacture and the formulation and manufacture of latex paints.

Prerequisite: 41.902 Paint Technology.

41.905 — PAINT TECHNOLOGY — PART 3 — MODERN COATING RESINS
Unit: 0.5

Designed to acquaint the student with surface-coating resins used in the production of today's finishes. The course complements the basic course in Paint Technology.

On successful completion students have a good understanding of the resins used in modern finishes, and their end use.

Prerequisite: 41.902 Paint Technology.

41.906 — GLASSBLOWING
Unit: 1.0

An introductory course to develop skills in the natural gas and oxygen flame working of glass tubing and rods.

Topics include identification of glasses; preparation and cutting of glass; procedure for working with tubing; pulling points, seals, straight tubes, round and flat botton tubes; sealing, bands, blowing bulbs, ring seals; side arms, small condensers, flask joints, columns and coil wings.

This course is recommended for individuals working in a chemical laboratory setting.

On successful completion of the course candidates can perform minor repairs of laboratory glassware.

41.907 — AIR POLLUTION: CHEMISTRY AND SAMPLING TECHNIQUES
Unit: 1.0

This course is suitable for people with varied experience in air pollution, or those interested in the pollution monitoring field. Portions of the course content may be changed on request of the participants.

The course examines the chemistry of the major air pollutants and their interactions in the atmosphere (the oxides of sulphur and nitrogen, carbon monoxide, carbon dioxide, hydrocarbons, particulates — including heavy metals — chlorocarbons and fluorocarbons); the effects of air pollutants on human health and on the environment; the collection of air pollutant samples by several methods, and the analysis of pollutant samples by various techniques (infra-red, gas chromatography, and atomic absorption).

41.908 — WATER POLLUTION: CHEMISTRY AND SAMPLING TECHNIQUES
Unit: 1.5

This course provides an understanding of the processes that take place in water systems when pollutants are present, and familiarizes the student with the various techniques used for detection and control of these pollutants. Portions of the course content may be changed on request of the participants.

The course examines the chemistry and microbiology of the major water pollutants; the major sources of pollutants, their interactions in the environment and methods of control and/or treatment; laboratory analysis of water samples.

Prerequisite: Chemistry 12 or equivalent.

41.920 — NDT RADIOGRAPHY
Unit: 1.0

This course familiarizes students with the fundamentals of Industrial Radiography and assist them in preparation for Level I certification. The course meets the requirements for classroom training as stipulated in CGSB Standard 48-GP-4M, condition (b).

It covers the general principles of Radiography; nature of penetrating radiation; the interaction between penetrating radiation and matter; radiation sources; detection and measurement of radiation; radiation safety; darkroom procedures. The students learn, for a given application, the proper selection of radiation source, film type, screens, etc., and should, upon completion, be able to perform radiographic examinations according to a prescribed technique.

41.921 — NDT ULTRASONICS
Unit: 1.0

This course familiarizes students with the theory of ultrasonic testing and its practical applications. The course meets the requirements of CGSB Standard 48-GP-7M, condition (b) for classroom training.

It combines theory with practice, using a variety of Ultrasonic testing equipment and test samples to cover generation of ultrasound; instrumentation; frequency; velocity; wavelength; attenuation; calibration; reference standards; longitudinal, transverse and surface waves; reflection; Snell's Law; sensitivity and resolution.

41.922 — NDT EDDY CURRENT
Unit: 1.0

This course familiarizes the student with fundamental theory, procedures, techniques and interpretation in Eddy Current Testing through classroom lectures and practical demonstration. This course meets the classroom training requirements as stipulated in CGSB Standard 48-GP-13M for Levels I and II.

It covers basic concepts of induced current, characteristics of induced eddy current, factors affecting conductivity, permeability and hysteresis, coil characteristics, impedance method-balanced bridge, signal to noise ratio, readout mechanisms, phase analysis, modulation analysis, methods and applications of eddy current testing, relationship of indications to discontinuities, advantages and limitations of the method, probe arrangement, design and manufacture.

41.923 — NDT MAGNETIC PARTICLE & LIQUID PENETRANT

Unit: 1.0

This course presents the theory and practical applications of Magnetic Particle and Liquid Penetrant Inspection through classroom lectures and "hands-on" practical experience. It meets the classroom training requirements as stipulated in CGSB Standard 48-GP-8M & 9M condition (b) for Level I and II certification.

It covers Theory of Magnetism and magnetic properties of materials; comparison with other NDT methods; current characteristics; direct and indirect induction; residual and continuous methods; black light — principles and requirements; dry versus wet method; indicating the mediums; material controls and calibration; discontinuities — their cause and detectability; demagnetization; inspection, interpretation and evaluation of indications.

It also covers the basic principles of Liquid Penetrant Testing and comparison with other NDT methods; classification of L.P.I. processes; principles and requirements of black light; properties of penetrants; detailed examination of the six basic steps of L.P.I.; equipment and chemical controls; inspection, interpretation and evaluation; advantages and disadvantages of the method; discontinuities — their cause and detectability ; special methods of L.P.I.

41.924 — NDT STRAIN GAUGE AND ACOUSTIC EMISSION

Under development. It will be offered in January, 1984.

42.102 — HYDROLOGY

Unit: 1.0

This introductory course presents the basic concepts and techniques of small watershed analysis, and the type of work involved in the design, supervision and construction of drainage facilities. It is of interest to persons engaged in municipal, highways, agricultural, flood control, and other water resources work.

The course introduces the fundamental concepts of hydrologic analysis from a practical viewpoint. Lectures and design projects cover the following topics: the hydrologic cycle, weather and hydrology; precipitation types and measurement, snowmelt, run-off, streamflows and stream gauging, evaporation and transpiration, infiltration; storage; flood estimation, frequency analysis, ground water movement and wells; sediment transport and deposition, and an introduction to open channel flow and culvert hydraulics. Assigned problems illustrate the use of flood frequency analysis, run-off coefficients, rainfall intensity-duration-frequency curves, hydrographs, mass curves, and level pool flood routing techniques. Two projects involve the hydrologic design of conventional and detention-type storm-drain systems for small watersheds.

42.103 — STATICS

Unit: 1.0

This course and 42.205 Strength of Materials provide the background for all civil engineering courses, especially those in the structural area.

The course examines historical development and relationship to structural design; vectors; force systems; graphical representation; resultants and components; moments and couples; conditions of equilibrium; force polygon; funicular polygon; co-planar systems; three-dimensional systems; frames and trusses; stress diagram and Bowe's notation; chains and cables; vertical shear force and bending moment diagrams, related problems and experiments, with emphasis on bridge and building structures and retaining walls.

Prerequisite: 32.903 Trigonometry or equivalent. Students without a strong background in Trigonometry should register for 42.900 Statics.

42.104 — CONCRETE TECHNOLOGY

Unit: 1.0

This introductory course presents the theory and practice used in the design, manufacture, construction and quality control of concrete, to contractors, foremen, concrete finishers, inspectors and others.

After successfully completing this course a student has the knowledge required to select suitable materials for making quality concrete; to design a concrete mix for strength, workability and economy; to sample and to conduct quality control tests on concrete and aggregates; and to understand theory and practices used in concrete manufacturing and construction.

Topics include cement (types, manufacture, reaction); water requirements; aggregates (properties, production, requirements, sampling and testing); admixtures (air entraining, water reducers, retarders, calcium chloride, pozzolans); concrete properties (strength, durability, permeability, workability, sampling and testing); concrete mix design; production (batching, mixing, transporting, placing, finishing, curing).

42.205 — STRENGTH OF MATERIALS

Units: 2.0

Draftsmen and people in design offices find this course useful. Some opportunity for experience in materials testing is provided.

The course examines simple stresses; stress, strain, elasticity; compound bars and columns; temperature stress; elastic limit; limit of proportionality; yield, ultimate; factor of safety; load factor, ductility; resilience, fatigue, shock; properties of sections, bending moments, shear forces, theory of flexure, slope and deflection of beams, restrained and continuous beams; strut theories, eccentric leading, lateral loading; compound stress and strain, ellipse of stress, Poisson's ratio, principal stresses and strains, Mohr's circle; testing techniques, machines, extensometers, strain gauges, photo-elasticity analysis of steel and timber beams and columns, evaluation of results.

Note: This course consists of 24 sessions. See class schedule for details.

Prerequisite: 42.103 or 42.900 Statics.

42.607 — STEEL DETAILING

Unit: 1.0

This course provides a good basic knowledge of structural detailing as it applies to steel.

On successful completion students can solve most of the problems associated with designing and drafting of joints and assembly in steel structures.

Students are required to design and draw solutions to detailing problems taken from actual structures in steel, including bills of materials. Although the practical aspects are emphasized, theory is investigated in some depth. Text books are complemented by handbook material in accord with the latest industrial standards.

Text: "Fundamentals of Structural Shop Drafting", Canadian Institute of Steel Construction.

Prerequisite: 49.900 Drafting Fundamentals and 49.905 Drafting — Structural, or permission of the instructor.

42.900 — STATICS

Unit: 1.0

This course covers the same material as 42.103 Statics but at a slower rate, to suit the student who needs more personal attention or has not taken the math prerequisite in recent years. During the term four extra sessions are scheduled on evenings to suit the group.

42.901 — STRUCTURAL ANALYSIS

Unit: 1.0

This course is designed to provide the student with a basic understanding of the behavior of simple structures and the methods used in their analysis.

The course offers a review of prerequisite courses and examines force diagrams for pinjointed frames; deflection of trusses using Williot Diagram; differences between statically determinate and statically indeterminate structures; methods of moment area and superposition as applied to slope and deflection; shear force and bending moment diagrams for beams and frames as derived from the method of moment distribution; influence lines as applied to statically determinate beams and trusses; portal frames including the effects of sideways; a brief introduction to computer methods.

During the term four extra problem-solving sessions are scheduled on evenings suitable to the students.

Text: "Structural Analysis", J.C. McCormack, Intext.

Prerequisite: 42.205 Strength of Materials, or permission of the instructor.

42.902 — STRUCTURAL DESIGN IN STEEL AND TIMBER

Unit: 1.5

This course provides a good basic knowledge of structural design in steel and timber for people working in the design field.

On successful completion students are capable of designing simple structures in steel and timber.

Topics include loading, types and assumptions; flexure; shear and deflection; tension members, compression members; beams, girders and columns; simple connections, moment connections, trusses and frames; bearing and base plates; new concepts.

Text: "Limits States Design in Structural Steel" (Metric), Adams Krentz Kulak; "Handbook of Steel Construction," 3rd Ed. 1980 published by Canadian Institute of Steel Construction; "Timber Design Manual" Metric Edition, published by the Laminated Timber Institute of Canada.

Prerequisite: 42.901 Structural Analysis.

42.903 — STRUCTURAL DESIGN IN REINFORCED CONCRETE
Unit: 1.5

This course provides a good basic knowledge of structural design in reinforced concrete for individuals working in the design field.

On successful completion students can design any simple structure in reinforced concrete using the ultimate strength design method.

The course covers bending and shear in reinforced concrete; simple beams and one-way slabs, compressive reinforcement, tee-beams; two-way slabs, columns, concentric and eccentric loading; footings, retaining walls; introduction to simple prestressed concrete beams.

Prerequisite: 42.901 Structural Analysis.

42.905 — SOIL MECHANICS 1
Unit: 1.0

This course introduces some of the basic principles of soil mechanics and soil-testing procedures to people in the engineering and construction field, who have little or no theoretical or laboratory testing experience.

Successful completion enables the student to conduct and calculate the results of basic soil mechanics laboratory tests; to have an appreciation and working knowledge of soil mechanics terminology and its basic principles; and to perform the duties of a junior employee in a commercial soil-testing laboratory.

Lectures and laboratory session topics include the classification of soils; simple soil weight-volume relationships; soil shear strength; soil permeability; soil compressibility; permeability tests; shear strength tests; consolidation tests.

This class will be limited to 20 students.

Text: "Introductory Soil Mechanics and Foundations: Geotechnical Engineering", 4th Edition, G. Sowers.

42.906 — SOIL MECHANICS 2
Unit: 1.5

Students apply the basic principles of soil mechanics to various design situations. The course gives an appreciation of how soil properties and principles influence design construction.

Successful completion enables the student to conduct and calculate the results of the basic soil mechanics laboratory tests; to have an appreciation and working knowledge of soil mechanics terminology and its basic principles; and to perform the duties of a junior employee in a commercial soil-testing laboratory.

On successful completion the student has a better understanding of how field and laboratory inspection and testing influence design, and hence can conduct these activities more effectively. The successful student can also perform and check simple design calculations.

Lectures, discussions, and design projects present information about seepage analysis, slope stability, earth pressures, earth-retaining structures and foundation design.

This class is limited to 20 students.

Text: "Introductory Soil Mechanics and Foundations: Geotechnical Engineering," 4th Edition, G. Sowers.

Prerequisite: 42.905 Soils Mechanics 1 or equivalent.

42.908 — HYDRAULICS
Unit: 1.0

Introduces fundamental, practical concepts of hydraulics. Examples from civil and municipal engineering are applicable to plant or process hydraulics. Topics include fluid pressures, continuity and Bernoulli equations, energy/momentum; pipe flow, friction losses and flow formulas; series, parallel and branching pipes; use of Nomograph; open channel flow, hydraulic elements, culvert flows, surges, hydraulic jump, energy dissipation, backwater curve; impact jet and function of storage in waterworks systems.

Text: "Practical Hydraulics for Public Works Engineer", Public Works Magazine.

42.912 — ESTIMATES AND CONTRACTS FOR HEAVY CONSTRUCTION 1
Unit: 1.0

This introductory course presents the basic concepts and techniques for the preparation of estimates and tenders, for the construction of civil engineering projects by contract.

On successful completion the student has a working knowledge of all procedures, from the calling for tenders to the award of a contract for a heavy construction job and a working knowledge of the estimating process.

The course consists of lectures and the preparation of estimates for basic operations and components of a typical job. Topics include an introduction to the heavy construction industry; contracts and specifications; preparation of estimates; estimates resources; estimates for various types of projects; overhead costs; estimate adjustments; cost accounting and job cost control.

42.913 — ESTIMATES AND CONTRACTS FOR HEAVY CONSTRUCTION 2
Unit: 1.0

This course allows students to gain further experience in the preparation of estimates, and to consider problems which arise in the administration of contracts for heavy construction jobs.

On successful completion, the student understands the total process of estimating and tendering for a straight-forward heavy construction job, and can work effectively as a member of an estimating team, understanding the types of problems involving claims for additional time and/or money which are the most commonly encountered in heavy construction.

It consists of lectures and the preparation of an estimate for, typically, a highway construction job and possibly a small bridge using SI standards. Topics include: labor agreements; equipment ownership/rental and operating costs; materials; subcontracts; use of cost reports in preparing estimates; financial and legal aspects and the administration of contracts.

Prerequisite: 42.912 Estimates and Contracts for Heavy Construction 1, or permission of the Civil and Structural Technology coordinator.

42.914 — ROADS AND STREETS
(formerly Transportation Engineering)
Unit: 1.0

This course introduces the fundamentals of road and street design to those wishing to become Civil Engineering technicians or technologists.

On successful completion the student knows the basic concepts of highway engineering, including some geometric design theory.

The course consists of lectures, problems and mini-projects. Topics include: road classification, cross-section elements, horizontal and vertical alignment, pavement structure, quantity take-off, drainage, construction methods and some traffic theory.

Text: "Geometric Design Standards for Canadian Roads and Streets", RTAC.

Prerequisite: 31.914 Technical Report Writing.

42.915 — HIGHWAY DESIGN AND CONSTRUCTION
Unit: 1.5

The course is specifically designed to provide Civil technicians and technologists with a detailed knowledge of the principles of highway design.

On successful completion students have the working knowledge to design highways in accordance with RTAC standards. In addition, students can do the calculations for geometry, earthworks, drainage and pavement structure.

The course consists of lectures and a design project. Topics include detailed considerations of vertical and horizontal alignment, cross-sections, intersection design, traffic control, drainage, earthwork, mass haul diagrams and various highway construction techniques. Students are expected to prepare preliminary design drawings.

Text: "Geometric Design Standards for Canadian Roads and Streets", RTAC.

Prerequisite: 42.914 Roads and Streets, 51.931/932/933 Engineering Surveying 1, 2, 3, 49.900 Drafting Fundamentals; a working knowledge of engineering materials (soils, asphalt, concrete), or advance approval from the Civil and Structural coordinator.

42.916 — MUNICIPAL SERVICES
Unit: 1.5

This course provides an introduction to the various utilities required in any community.

On successful completion the student has a basic understanding of the function and terminology of the various services, and of the principles governing the design of water supply, sanitary sewer and storm drainage systems, and has working knowledge of the layout and design of water and sewer systems.

The course consists of lectures, discussions and a design project. Topics include determination of flows and design of water supply distribution system; sanitary and storm sewers; loads on buried conduits; locations of gas and electrical systems; construction practices; procedures for inspection and quality assurance of construction; testing of systems; organization for operation and maintenance; treatment of water and waste water.

Prerequisite: 42.102 Hydrology, 42.202 Hydraulics.

42.917 — COMPUTER METHODS OF STRUCTURAL ANALYSIS
Unit: 1.0

This course introduces the student to computer methods of structural analysis and design, particularly to the stiffness matrix method as applied to plane frames. It is of interest to students who have taken the prerequisite courses and wish to expand their knowledge of structural analysis, and also to structural engineers whose educational background did not include computer methods.

On completion the student can prepare and input data for frame analysis problems, understand what the computer does with the data, and obtain and interpret the results. With the knowledge of FORTRAN, students are in a position to write their own program.

Topics include applicable matrix methods and terminology; development of the stiffness matrix method as applied to the analysis of plane frames; elastic supports; influence lines; temperature stress analysis; three dimensional frames; symmetrical structures; the concept of finite elements; time-sharing systems; job control language, data files, output files; load cases and combinations; the concept of automatic member design.

Text: "Structural Analysis for Engineers", by Willems and Lucas, McGraw Hill 1978.

Prerequisite: 42.901 Structural Analysis. A knowledge of FORTRAN and matrix methods is desirable.

42.918 — SUBDIVISION PLANNING AND DESIGN
Unit: 1.5

Specifically designed to provide civil technicians and technologists with detailed knowledge of the principles of urban subdivision planning and design of major and minor streets. On successful completion the student has a working knowledge of subdivision layout, and of the design of local streets within that subdivision in accordance with the RTAC standards. In addition students can calculate density loading, geometry, moving crown, curb return "stretch outs", intersection design and pavement structure.

It consists of lectures, discussions and a design project including detailed considerations of drainage, frontage roads, greenbelts, curb and gutters; pavement design, street configuration (cul de sac, loop and crescent), procedure for inspection and quality assurance of construction. Students are expected to prepare tender documents for construction by unit price or resident improvement contract.

Text: "Geometric Design Standards for Canadian Roads and Streets", RTAC.

Prerequisite: 42.914 Roads and Streets, 51.931/932/933 Engineering Surveying 1, 2 & 3, 49.900 Drafting Fundamentals and a working knowledge of engineering materials (soils, asphalt, concrete), or advance approval of the Civil and Structural Technology coordinator.

42.920 — INTRODUCTION TO URBAN TRAFFIC ENGINEERING
Unit: 1.0

This course is designed to introduce basic traffic engineering concepts. In general, traffic engineering entails the study of the movement and storage of vehicles on road systems. The topics covered should be of particular interest to persons involved in municipal and highway engineering, and/or land development.

The course comprises lectures and assignments. Topics include driver and vehicle characteristics, traffic stream characteristics, highway and intersection capacity, intersection and parking layout, data collection techniques and traffic control.

Text: "Fundamentals of Traffic Engineering", Institute of Transportation Engineers, Kennedy, Kell and Homburge.

42.921 — TRANSPORTATION PLANNING
(formerly Traffic Planning Management)
Unit: 1.0

Reviews in broad terms the field of transportation engineering. Various transportation modes are investigated and related to the overall transportation network. Environmental, economical and political aspects of transportation systems are considered through discussion and films. Students prepare a report suitable for presentation to a planning department on some aspect of transportation.

Text: "Transportation Engineering, Planning & Design," Paquette Ashford Wright.

Prerequisite: It is recommended that students complete 42.920 Introduction to Urban Traffic Engineering and 42.914 Roads and Streets before proceeding with this course.

42.922 — COMPUTER APPLICATIONS IN CIVIL TECHNOLOGY
Unit: 1.0

Designed as an introduction to some applications for computers in Civil Technology.

The course comprises lectures, demonstrations and assignments. Topics may include applications to highways, survey, soils, hydraulics/hydrology.

Course Summary: Introductory FORTRAN and BASIC.

Development of flowcharts and programs for highway alignments, vertical and horizontal, parabolas and Euler spirals; earthworks, data base construction and servicing; data preparation; hydrological and other data condensation using regression analysis, approximately eight projects either pre-punched or pre-programmed; discussion of computer usage in file handling and documentation, and economics of computer applications.

Prerequisite: 14.050 Data Processing — Introduction or Knowledge of FORTRAN and/or BASIC.

42.950 — INTRODUCTION TO CIVIL TECHNOLOGY
Non-Credit

Intended to orient aspiring technicians or technologists in civil technology to some of the general concepts and terminology. It is particularly recommended for students beginning a full-time day program in civil and structural technology.

Topics introduced through short assignments, films, lectures, and discussion include the relationships between contractor, consultant, and client in the construction industry; various roles of the technician and technologist; engineering problem solving including data collection, analysis, presentation, solutions; conversion and reduction of metric and imperial units; force, stress, and pressure; use of computers for problem solving; survey methods; testing procedures.

Prerequisite: Grade 12 math and Grade 11 Physics, or advance approval of Technology co-ordinator.

43.103 — SHOP PRACTICE 1
Unit: 1.5

Introduces students to the basic discrete passive components used in electronics, and to the techniques of layout and fabrication of electronic equipment. Upon successful completion the student should have a good understanding of the characteristics of components used in electronic equipment, chassis and metal cabinet design, electronic drafting conventions, preparation of detailed drawings, sheet metal cutting and folding, as well as the tools and measurement techniques used in electronic fabrication.

Topics include resistors, capacitors, inductors, basic transformers, switches, relays, color codes, tolerances, preferred values, power and voltage ratings, wiring, soldering, some printed circuit layout, drafting, and metal fabrication.

This information is used in building a project, for example a power supply.

Text: Shop Practice Manual. "Electronic Techniques", Vallanucci, Artais, Megow.

43.203 — SHOP PRACTICE 2
Unit: 1.0

It is suggested that this course be taken immediately after 43.103 Shop Practice 1. A continuation of Shop Practice 1. The first 4 weeks cover the design and fabrication of a single-sided printed circuit board. Topics and work include material and equipment requirements, artwork layout from schematic, board processing (etching, drilling and component mounting).

The next 4 weeks deal with printed circuit board repair and reworking. Topics and work include materials, manufacturing methods, tools used for repair, high reliability soldering, repair of heat damaged and mechanically damaged boards, boards with plated holes and multi layer boards.

The last 4 weeks deal with basic wiring practices and principles using the Canadian Electrical Code. Topics and work done include wiring a standard breaker panel, wiring branch circuits, and layout out on a drawing the branch circuits in a residential building.

Text: "Electronic Circuits", Villanucci, Artais, Megow.

43.413 — INDUSTRIAL AUDIO SYSTEMS
Unit: 1.0

This course is for the electronics engineering technician or technologist who is interested in the science of sound and its applications. Emphasis is on the fundamental application of acoustics.

Successful students learn a systematic method of installing a sound reinforcement system in an existing auditorium, and can suggest methods of improving an unsatisfactory sound system.

The course examines the application of audio systems in industry, the decibel system and volume units, outdoor sound systems, transducers (loud speakers, microphones), indoor sound reinforcement systems, system equilization, and design applications.

Prerequisite: 32.522/622 Math 1 for Electrical Technology, or permission of the instructor.

43.501/601 — CIRCUIT ANALYSIS 1
(Equivalent to 43.102 Day School)
Unit: 2.0

This course introduces the basic principles of DC circuit analysis through classroom lectures and practical laboratory sessions. Upon successful completion, the student can analyze circuits containing resistance elements, and supplies from direct current voltage or current sources. The student learns to use basic-direct current electrical equipment such as power supplies and multimeters.

The basic concepts of energy, work, current, voltage, resistance and power, are thoroughly covered initially; proceeding to the analysis of series, parallel and series-parallel circuits utilizing circuit laws and techniques. The final portion of the course deals with the following circuit analysis techniques: loop analysis, nodol analysis, Therenin and Norton's Theorems, as well as other methods.

Text: "Electric Circuits for Engineering Technology", Ridsdale.

Prerequisite: Algebra 12 and Physics 11 or equivalent, or permission of the instructor.

43.502/602 — CIRCUIT ANALYSIS 2
(Equivalent to 43.202 Day School)
Unit: 2.5

This course introduces students to the behavior of electrical circuits and networks when driven by a single-phase alternating current (AC) source, and prepares the student for courses in electronics and power systems.

The course includes the sine wave, average and effective values, power and power factor; resistance, capacitance, and inductance as elements in single-phase AC circuits; phasor diagrams, impedance, admittance, voltage, current and power diagrams; analysis of AC circuits with complex algebra; resonance and resonant circuits; high and low pass filters; the application of circuit laws and theorems to single-phase AC circuits, the analysis of two-port networks; coupled circuits.

The circuit theory from lectures is verified through many projects conducted in well-equipped laboratories, using the following equipment: multimeters, sine wave generators, amplifiers, and dual trace oscilloscopes.

Text: "Electric Circuits for Engineering Technology". Ridsdale.

Prerequisite: 43.501/601 Circuit Analysis 1, and 32.522/622 Math 1 for Electrical Technology.

43.504/604 — ELECTRONIC CIRCUITS 1
Unit: 2.0

This course is a prerequisite for higher level electronics courses and 43.507/607 Digital Techniques 1.

Successful students obtain a basic knowledge of transistor theory and its application in electronic circuits.

The course covers the basic theory of operation of the P-N junction and the junction transistor; characteristic curves and their interpretation; basic amplifier configurations and properties; loadline analysis; choice of Q-point; the transistor as a switch; bias circuit choice, design and analysis; AC equivalent circuits and their uses; frequency response considerations; power supplies, including rectification, filtering, and voltage and current regulation; feedback principles, leading to oscillation and oscillators. About one-third of the course time is spent in the lab verifying theory and testing circuit designs.

Text: "Electronic Devices and Circuit Theory", Boylestad and Nashelsky; Prentice Hall.

Prerequisite: 43.502/602 Circuit Analysis 2 or 43.529/629 Electric Circuits AC/DC, or approved equivalent.

43.505/605 — THREE-PHASE POWER CIRCUITS
(Equivalent to 43.343 Day School)
Unit: 2.0

This course further develops the electrical knowledge of persons involved directly or indirectly with the electrical power industry.

On successful completion, students can analyze three-phase electrical power circuits and determine their behavior under normal operating conditions. This course is a highly desirable prerequisite for all further electrical equipment, industrial electronics, and electrical power courses.

The course includes laboratory sessions, in well-equipped laboratories, to study the behavior of electrical quantities. Topics include: review of single-phase AC circuits, with emphasis on graphical analysis, with respect to circuit quantities, electrical load, and power-factor correction. Other topics include single-phase two and three-wire distribution, elementary transmission-line problems and corresponding voltage regulation, three-phase balanced and unbalanced systems, phase sequence determination, two wattmeter methods for power measurement, three-phase transformer connections and third harmonics.

Special Costs: Programmable calculator with constant memory.

Prerequisite: 43.502/602 Circuit Analysis 2, or 43.529/629 Electric Circuits AC/DC, or approved equivalent.

43.506/606 — ELECTRONIC CIRCUITS 2
Unit: 2.0

As a continuation of Electronic Circuits 1 this course gives the student an understanding of transistor circuits not included in the previous course, and the theory and application of other solid state devices.

Topics include tuned amplifiers; push-pull power amplifiers; transformerless power amplifiers; the UJT, PUT and the thyristor family; field-effect transistors; integrated circuits with emphasis on linear circuits; the operational amplifier; heat-sink calculations; small-signal analysis. About one-third of the course time is spent in our well-equipped laboratories verifying theory and testing circuit designs.

Text: "Electronic Devices and Circuit Theory", Boylestad and Nashelsky, Prentice Hall, 3rd Edition.

Prerequisite: 43.504/604 Electronic Circuits 1.

43.507/607 — DIGITAL TECHNIQUES 1
Unit: 2.0

This course allows persons who have passed 43.950 Introduction to Digital Logic and who have a thorough knowledge of solid state electronics to become proficient in the rapidly developing and expanding

field of digital electronics. On successful completion the student is prepared for more advanced courses in digital techniques.

This course is presented in lecture form with laboratory sessions introduced at appropriate intervals. Topics include: the theory and application of MOS, CMOS, Schottky, and ECL Logic; switching circuit analysis and synthesis; gating applications and symbology; decoders and encoders; flip flops and flip flop applications; counters and counting systems; shift registers, ring counters and their applications; arithmetic logic units; Binary and BCD arithmetic; interfacing between different logic families; practical applications of digital techniques.

Text: "The TTL Data Book for Engineers", Texas Instruments Inc. "Introduction to Digital Techniques" by Barna and Porat.

Prerequisite: 43.950 Introduction to Digital Logic and 43.504/604 Electronic Circuits 1. Admission will be restricted to those with the prerequisites or by successful completion of a test to be held on the first night of class for those who have had some previous experience with digital logic.

43.508/608 — TELECOMMUNICATIONS CIRCUITS
Unit: 2.0

A pre-entry short test is to be passed by aspiring entrants.

An introduction to principles which form the basis of all telecommunications systems, for persons employed at the basic installation and service level. Students should already understand electrical and electronic fundamentals, and be familiar with the use of lab equipment, especially oscilloscopes.

On successful completion students understand basic types of modulation, demodulation, frequency generation and frequency selection techniques, and be able to analyze these circuits for troubleshooting. This course serves as preparation for 43.513/613 Microwave Principles and 43.517/617 Telecommunications Systems.

Lecture and practical lab sessions cover the following topics: specialized circuits for modulation, demodulation (AM, SSB, FM, PM), frequency generation and frequency selection techniques as used in radio and telephone equipment.

Text: To be advised in class.

Prerequisite: 43.502/602 Circuit Analysis 2 or 43.529/629 Circuit Analysis AC/DC, and 43.506/606 Electronic Circuits 2.

43.509/609 — MEASUREMENTS
(Equivalent to 43.204 Day School)
Unit: 2.0

This course instructs the student with a knowledge of basic electronic principles in the selection, operation, and typical methods of using basic electronic test instruments. This course aids in "getting the most out of a test instrument" in day-to-day situations.

Upon successful completion students understand how measurement techniques currently in use may be improved.

The course includes the theory of operation and measurement techniques using various types of bridges, distortion analyzers, electronic voltmeters, frequency counters, oscilloscopes, RF power meters, signal generators, spectrum analyzers, and Q-meters. Certain specialized techniques dealing with measurement of phase angle, power and distortion will also be presented.

Text: "Electronic Instrumentation and Measurement Techniques", 2nd Edition, W.D. Cooper.

Prerequisite: 43.502/602 Circuit Analysis 2 or 43.529/629 Circuit Analysis AC/DC, and 43.504/604 Electronic Circuits 1.

43.510/610 — INDUSTRIAL ELECTRONICS 1
Unit: 2.0

This course covers basic power control circuits for the electronics student and provides the fundamentals for electrical power students who will continue to 43.530/630 Industrial Electronics 2.

On successful completion students understand the operation of these circuits, and can construct and troubleshoot them using test equipment. The student also learns to interpret circuit schematics and calculate circuit values. Eight laboratory sessions and 16 lecture/problem sessions cover these topics: DC power supplies and regulators; inverters; SCR switching; TRIAC phase control; and switches, fuses and timing device applications.

Text: G.E. SCR Manual.

Prerequisite: 43.506/505 Electronic Circuits 2.

43.511/611 — ELECTRICAL EQUIPMENT 1
(Equivalent to 43.324 Day School)
Unit: 2.0

This course allows people with an electrical circuit fundamentals background to study the theory, characteristics, and operations of DC generators and motors; AC induction motors, magnetic starter and relay logic. Electricians, technicians, and draftsmen find this course useful in understanding the basic electrical equipment with which they work. It is a mandatory prerequisite to 43.519/619 Electrical Equipment 2 and 43.523/623 Industrial Distribution Systems. Successful students learn the theory of operation, the application and the limitations of each basic type of electrical equipment listed. They also gain experience in the connecting, operating, and testing of the equipment.

The course includes DC machines, voltage generation and regulation, torque and speed relationships, typical wiring connections; AC induction motors, operation and characteristics including inrush current, efficiency and starting torque; electromagnetic motor starters, relays, timing devices and related pilot devices and preparation of schematic control diagrams. Approximately 50% of the course is spent in running equipment in the lab.

Text: "Rotating Electric Machinery and Transformer Technology", D.V. Richardson.

Prerequisite: 43.505/605 Three Phase Power Circuits, or approved equivalent.

43.512/612 — INDUSTRIAL SYSTEMS 1
Unit: 2.0

This course covers equipment used in distribution and lighting systems in buildings, fuses and circuit breakers, lighting sources and lighting layouts. Electricians, technicians and draftsmen, find this course useful in understanding the functions and ratings of basic protective devices and lighting used in building systems.

The course examines the need for protection, fuses, circuit breakers; coordination of protective devices; lighting fundamentals, light sources, lighting system calculations and layouts. All relevant regulations of the Canadian Electrical Code are discussed and applied.

Text: Westinghouse Lighting Handbook Equipment Manual.

Prerequisite: 43.505/605 Three-Phase Power Circuits.

43.513/613 — MICROWAVE PRINCIPLES AND DEVICES
Unit: 2.0

This course provides an introduction to microwave principles and devices most frequently encountered in communications, radar, and industrial systems for persons associated with the electronics industry, and with little or no experience in high-frequency techniques. On successful completion a student is knowledgeable about the operation of most microwave appliances or devices used in industry. The principles and techniques acquired are a valuable background for further specialized training in the field of microwave communication.

Topics include transmission line characteristics and the ideal lossless line; Smith Chart and graphical representation of the transmission line, wave guides, coupling trees, attenuators and terminations, directional couplers, detectors, cavities, wave-meters; microstrip and stripline components, microwave antennas, and typical single channel microwave systems.

Text: "Microwave Theory and Applications" by Stephen F. Adam.

Prerequisite: 43.506/606 Electronic Ciruits 2, 43.508/608 Telecommunications Circuits is desirable but may be taken concurrently.

43.515/615 — ELECTRONIC CIRCUITS 3
Unit: 2.0

This course introduces the electronics student to solid state switching circuits using both transistors and CMOS integrated circuits. Circuit analysis, construction and testing in the laboratory is emphasized. On completion the successful student can utilize specific devices in practical applications, and quantitatively predict their performance and operating waveforms.

Topics include pulse characteristics, transistor switch, analog switch, loading effects, ramp generator, Schmitt trigger, monostable (one shot), astable (clock oscillator), flip flop and the 555 timer. Approximately 70% of the course is devoted to integrated circuits utilization, and 30% to transistor circuits. Ten laboratory sessions involve circuit construction and evaluation.

Text: "CMOS Cookbook" Lancaster, Sams.

Prerequisite: 43.506/606 Electronic Circuits 2, or permission of instructor.

43.517/617 — TELECOMMUNICATION SYSTEMS
Unit: 2.0

This course introduces the principles of transmitting and receiving systems including radio, telephone frequency division and time division multiplex, and radio aids to navigation.

Upon successful completion the student understands circuit arrangements of these systems, can carry out system performance tests in accordance with DOC and industrial standards, and can lay out a simple radio path predicting operating levels and noise performance.

Topics include the principles of electro-magnetic wave propagation, antenna systems and radio path planning; typical transmitters and receivers operating in the AM, SSB, FM and PM modes; frequency division multiplex plans and system organization; PCM multiplex system organization, basic radar, Loran and other selected navigation systems. Laboratory sessions include radio transceiver evaluations and the layout of a simple radio path.

Prerequisite: 43.508/608 Telecommunications Circuits, and 43.513/613 Microwave Principles and Devices.

Note: Students expecting to take this course after 1983 should advise the technology coordinator in September, 1983.

43.518/618 — CIRCUIT DESIGN AND FABRICATION
Unit: 2.0

This course introduces the student to further applications of transistors and linear integrated circuits.

The course opens with a review of the fabrication techniques of monolithic integrated circuits, and the resulting electrical characteristics of components making up the circuits. It shows how these characteristics may be used to advantage in the design of hybrid-voltage amplifiers, balanced modulators, phase detectors, broadband amplifiers, and active filters. Approximately half the course time is spent in the laboratory constructing and testing your prototype circuit design.

Prerequisite: 43.506/606 Electronic Circuits 2.

43.519/619 — ELECTRICAL EQUIPMENT 2
Unit: 2.0

This course is a continuation of 43.511/611 Electrical Equipment 1 which must be taken first. (Please read the description of that course.)

Course topics include synchronous motors and generators, duty cycles, load applications and temperature classifications of motors, transformers, circuit breakers, protective relays, instrument transformers and lightning arresters.

Text: "Rotating Electric Machinery and Transformer Technology", Richardson; "Switchgear and Control Handbook", Smeaton.

Prerequisite: 43.511/611 Electrical Equipment 1, 43.505/605 Three-Phase Power Circuits.

43.520/620 — ELECTRICAL DRAFTING
Unit: 2.0

This course allow persons with an electrical equipment background to develop the skills necessary to organize and draft schematic, connection, and electrical layout drawings. It gives the student experience in developing and interpreting control schemes involving electro-mechanical devices; preparing schematic and complete connection diagrams; organizing branch circuit wiring for lighting layouts; and preparing building layout drawings.

Topics include standard electrical symbols, schematic and connection diagrams, single and three line diagrams, building electrical layouts and equipment layout.

Text: Equipment Manual.

Prerequisite: 49.900 Drafting Fundamentals, or practical drafting experience, or permission of instructor.

43.521/621 — ELECTRICAL POWER SYSTEMS ANALYSIS
Unit: 2.0

This course imparts further knowledge of three-phase electrical theory by providing an introduction to calculation methods for solving three-phase power system problems, for application in the electrical power industry and electrical consulting engineering offices. It leads to a better understanding of operation and maintenance problems encountered with electric power equipment.

The course examines graphical analysis methods of voltage regulation; unbalanced three-phase electrical systems with an introduction to symmetrical components; short-circuit studies and per unit methods of solving utility and industrial power system problems; short-circuit forces; circuit breaker interrupting ability; maximum momentary duty of power equipment; power circuit diagrams and transmission diagrams to analyze transmission line power handling capabilities; study of power angle diagrams as introduction to power system stability analysis.

Special Costs: Programmable calculator with constant memory.

Prerequisite: 43.505/605 Three-Phase Power Circuits and pre-entry test.

43.522/622 — UTILITY SYSTEMS
Unit: 2.0

This course is the final course in the area of utility systems. It brings together the application of all types of electrical equipment, its use in utility systems and utility system organization.

Topics include synchronous generators; generating stations; transmission lines; sub-station layouts; protection of equipment and systems; and power rate structure. Labs include paralleling of alternators and transformers, KW and KVAR load sharing.

Text: "Rotating Electric Machinery and Transformer Technology", D.V. Richardson; and Equipment Manual.

Prerequisite: 43.505/605 Three-Phase Power Circuits, 43.519/619 Electrical Equipment 2, or permission of the instructor.

43.523/623 — INDUSTRIAL SYSTEMS 2
Unit: 2.0

As a continuation of 43.512/612 Industrial Systems 1, this course brings together the application of all types of electrical equipment with regard to the design of a complete electrical system for an industrial plant or commercial building.

The course examines feeder design; motor branch circuit wiring; motor control centres; demand factors; low-voltage switchboards; unit substations; voltage and system selection; grounding of systems and equipment and system protection. All relevant types of equipment are briefly discussed (on the basis that the student has had previous exposure to the equipment), followed by system design-type problems which emphasize the selection of specific rating of equipment. All relevant regulations of the Canadian Electrical Code are discussed and applied.

Text: "Switchgear and Control Handbook", Smeaton; Equipment Manual; Canadian Electrical Code. Part I. 13th Edition.

Prerequisite: 43.519/619 Electrical Equipment 2, 43.512/612 Industrial Systems 1, or approved equivalents.

43.529/629 — ELECTRIC CIRCUITS AC/DC
Unit: 4.0

Students are required to obtain approval from department coordinator or authorization from an instructor of 43.501/601 Circuit Analysis 1, before registering for this course. It enables persons with a strong background in the electrical industry, or with some college or university training, to cover and/or review those topics necessary to take the more advanced courses in the Electrical Program. It gives students the basic knowledge of how single phase AC and DC circuits work, and how to analyze and design them for particular situations.

Text: "Electric Circuits for Engineering Technology", Ridsdale.

Note: This is an accelerated program demanding and dependent upon a strong mathematics background. A special mathematics course is instituted in the sixth week of classes to complement this course. (See 32.540/640 Mathematics for Electrical Technology.) THIS PROGRAM IS NOT INTENDED FOR SOMEONE WITHOUT PREVIOUS TRAINING IN ELECTRICAL THEORY.

43.530/630 — INDUSTRIAL ELECTRONICS 2
Unit: 2.0

Students study the application of feedback principles and electronics to the control of electrical systems.

The course applies transfer function and block diagram techniques to the steady state and transient analysis of electromechanical systems. Topics include DC and AC generator voltage regulators, current reg-

ulators, position servos and motor speed controls, with practical application to the set-up and trouble-shooting of standard packaged industrial units.

Prerequisite: 43.510/610 Industrial Electronics 1, 43.511/611 and 43.519/619 Electrical Equipment 1 and 2, and 32.530/630 Laplace Transformers, or permission of the instructor.

43.532/632 — DIGITAL TECHNIQUES 2
Unit: 2.0

This course enables persons with a knowledge of solid state electronics and basic digital techniques to become familiar with digital subsystems and their applications to industry. Students learn to use MSI and LSI devices to implement, analyze and troubleshoot digital subsystems.

Topics include interfacing of digital logic families to FET and bipolar devices; the nature of electrical noise and measures that must be taken to minimize its effect upon digital systems; circuit layout and by-passing strategies; interfacing to the analog world; digital to analog and analog to digital conversion using complex techniques; analog and digital multiplexing; frequency sources, frequency and time measurement; memories and memory systems including RAM and ROM; ASCII keyboard and the keyboard encoder; organization of a video character display; state diagrams, state variables and their application to logic design.

Students are required to obtain a Universal Component Strip (Circuit Board) (EL SK-10 or equivalent) plus a complete set of hand tools for the laboratory sessions.

Text: "Microprocessors and Digital Systems", Hall; CMOS Data Book, Motorola; Intel Component Data Catalog, Intel; Course Compendium, Nichols.

Prerequisite: 43.507/607 Digital Techniques 1 and 43.506/606 Electronic Circuits 2 or successful pre-course counselling by the instructor to be held 1 week prior to commencement of class.

43.535/635 — PRINTED CIRCUIT BOARD DESIGN
(formerly Electronic Fabrication)
Unit: 2.0

This course enables those students wishing to further their knowledge in the electronics industry to take a circuit from the schematic stage and turn it into a finished project, using standard industrial techniques. Upon successful completion students can a) design and fabricate single and double sided printed circuit boards using wet and dry film techniques; b) design and fabricate electronic equipment incorporating printed circuitry and packaging in prototype form.

Topics include layout design of single and double sided printed circuit boards, components, component mounting, art work, production processes, interconnection of units, prototype design and assembly, high reliability soldering techniques.

Text: "Electronic Techniques", Villanucci.

Prerequisite: 43.504/604 Electronic Circuits 1, or equivalent, or approval of the instructor. Students must be able to read an electronic circuit diagram.

43.540/640 — PROCESS COMPUTER SYSTEMS
Unit: 2.0

This course is intended for students who have a working knowledge of microcomputers, and who desire further training in the application of computers to industrial control. About 90% of course time is spent in the lab.

On successful completion the student can write real time input/output and control programs in "BASIC" language with consideration of scan rate, accuracy, filtering, alarm limits, etc.; specify and/or design typical I/O and multiplexing circuitry for either analog or digital signals with consideration of linearity, isolation, stability, etc.; write assembler language real time input/output handlers which are time driven, event driven, etc.; assess the application of various machine modules and languages to various control requirements.

The course covers design and construction of typical interface circuitry and interface of same with PDP-11 based control systems; programming techniques for signal input, control and real time graphic display. This course is about 70% software.

Prerequisite: 43.933 Microcomputers and Digital Systems - Module 1, or equivalent or graduation from any day school electronics program; some knowledge of "BASIC" programming language. Satisfactory completion of entrance test to be given the first night of classes.

Note: enrolment is limited.

Prospective students are interviewed and selected on the basis of the prerequisites and their industrial experience.

43.601 See 43.501
43.602 See 43.502
43.604 See 43.504
43.605 See 43.505
43.606 See 43.506
43.607 See 43.507
43.608 See 43.508
43.609 See 43.509
43.610 See 43.510
43.611 See 43.511
43.612 See 43.512
43.613 See 43.513
43.615 See 43.515
43.617 See 43.517
43.618 See 43.518
43.619 See 43.519
43.620 See 43.520
43.621 See 43.521
43.622 See 43.522
43.623 See 43.523
43.629 See 43.529
43.630 See 43.530
43.632 See 43.532
43.635 See 43.535
43.640 See 43.540

43.933 — MICROCOMPUTERS AND DIGITAL SYSTEMS — MODULE 1
Unit: 1.5

This course is the first module of several modules that will deal with microprocessors and their applications. Module 1 allows persons with a knowledge of solid state electronics and digital techniques to become familiar with the organization and operation of the microcomputer, thus preparing them for more advanced microcomputer programming, applications, and development courses.

On successful completion students understand the organization and operation of simple microcomputer systems, can interface them and write simple machine language programs to test them.

Topics include the architecture and operation of a microprocessor, memory organization and interfacing, serial and parallel interfaces, simple programming at the machine language level, simple interrupt systems, overview of more complex microprocessors such as the 8088, the Z80 and the 8086.

This course is presented in a series of lectures plus laboratory projects carried out on the 8085 microprocessor.

Text: 1. Microprocessors and Digital Systems, D.V. Hall; 2. Assembler Language Programming for 8080/8085; 3. MCS-80/85 Family User's Manual.

Prerequisite: 43.532/632 Digital Techniques 2. Admission will be restricted to those with the prerequisite, or by successful completion of a test to be held on the first night of class.

43.934 — MICROCOMPUTERS AND DIGITAL SYSTEMS — MODULE 2
Unit: 1.0

This course introduces the concept of microcomputer control system software and hardware development.

Topics include interrupt system hardware and software; disk systems and disk operating systems; introduction to CPM and CPM applications; customizing the CPM system; using CPM internal facilities such as BDOS in other programs; development of the hardware and software for a small single board micro-computer based controller; editing, assembling, and de-bugging the software; final testing and documentation of the system.

Text: 1. MCS 85 User's Manual, Intel; 2. 8080/8085 Assembler Language Programming Manual, Leventhal; 3. Microprocessors and Digital Systems, McGraw-Hill; 4. CPM User Guide, Osborne.

Prerequisite: 43.933 Microcomputers and Digital Systems — Module 1.

43.936 — MICROCOMPUTERS AND DIGITAL SYSTEMS — MODULE 3
Unit: 1.0

This course introduces programming concepts and strategies that are essential requirements for development of Real Time Control Systems. It deals with 8085/Z80 Assembler Language for Control.

Topics include structured programming techniques; top down design; flowcharting; interrupt driven structures; executives and task management including circular lists, task queues, data queues; sorting and searching; inter-computer communications; software flags, switches and semaphores. I/O techniques; and non-interrupt driven multi tasking.

Prerequisite: 43.934 Module 2 with 65% or better.

43.950 — INTRODUCTION TO DIGITAL LOGIC
Unit: 1.0

This course provides an introduction to digital logic for students who are commencing the basic certificate program. Students entering this course should have completed 43.501/601 Circuit Analysis 1.

Topics include binary, octal, and hexadecimal number manipulation; binary variables; truth tables and their applications; Boolean functions and their applications including AND, OR, NOT, NOR and NAND; symbology and logic flow; switch and relay logic circuits; relationships between equations, logic circuits and logic diagrams; introduction to electronic logic gates and their applications.

Time distribution for this course is 50% lecture and 50% laboratory.

Text: To be announced.

44.904 — FOOD PROCESSING
Unit: 1.0

This course provides an overview of the basic methods of food preservation to persons already employed in food manufacturing, government inspection services, or to those wishing to explore the food industry as a possible career field.

The course offers an introduction to the processes of canning, freezing, fermenting, concentrating and dehydrating of foods. Experimental lots of foods will be preserved by these methods during laboratory periods.

44.906 — QUALITY CONTROL FOR FOOD PROCESSING
Unit: 1.0

The course is designed primarily for persons associated with the food manufacturing industry or allied government inspection services, or for those wishing to explore this career area. It provides an introduction to the most frequently used quality control methods and emphasizes their importance in food processing.

Topics include the general principles of quality control; inspection forms; acceptance sampling; control charts; instrumental measurement and specification of food quality; government standards and grades; sensory panel tests, including consumer tests; equipping a quality control laboratory.

44.909 — LANDSCAPE IRRIGATION
Unit: 1.0

This course provides technical information and basic training for persons associated with or interested in turf and landscape irrigation.

Lectures, demonstrations, problem sessions, and product displays will be used to provide an understanding of turf and landscape irrigation. Topics include basic hydraulic theory, system design, and construction fundamentals; scientific and practical aspects of water application; installation, operating and maintenance procedures for major types of irrigation systems.

44.910 — SPORTS TURFGRASS MANAGEMENT 1
Unit: 1.0

The course is designed for persons who are associated with maintenance of golf courses, municipal parks and outdoor recreational facilities. It is an introductory course in turfgrass management as applied to sports areas.

Topics include turfgrass botany (classification, nomenclature identification and utilization); weed, disease and insect problems and control strategy; soils (introduction and classification); soil amendments and fertilizers; tillage and cultivation systems; irrigation principles; irrigation equipment design and construction.

44.918 — PESTICIDES FOR RETAILERS AND LANDSCAPE APPLICATORS
Unit: 0.5

For persons engaged in retailing, commercial landscape maintenance or nursery crop production, who intend to write examinations under the Pesticides Act to become certified as Dispensers or Applicators.

The course provides background and knowledge of pesticides used in B.C. Students will have the opportunity to write the Pesticides Act examination under the direction of the B.C. Ministry of the Environment in the sixth week of the course.

Lectures and problem sets deal with legislation, pesticide safety, pesticide formulation, prescribed uses and interpretation of the data in the various bulletins, and the responsibilities of pesticide applicators or dispensers.

45.103 — WOOD UTILIZATION
Unit: 1.0

Understand the beauty and usefulness of our major natural resource — wood. Learn to recognize lumber from the commercial soft-woods and hardwoods of B.C., its common uses and methods of manufacture. Gain "hands-on" experience in examining the structure and properties of these woods in order to make better use of them in home construction, field projects or hobbies.

Learn the basics of lumber, plywood, pulp and paper manufacturing processes. Understand why and how wood decays and methods of preserving it. Know why wood reacts as it does as its moisture content changes and how its strength varies under a variety of tests.

Text: "Canadian Lumber Grading Manual".

45.120 — PLANT IDENTIFICATION
Unit: 1.0

An introduction to plant identification. Students learn how to identify important plants using identification keys.

Covers all major plant groups: evergreen and broad leaf trees, shrubs, herbs, grasses, ferns and mosses. There are two field trips scheduled for Saturdays or Sundays for those students who seek day school credit. Students must be prepared to provide their own transportation (car pools).

The economic and aesthetic values of plants are pointed out. After the course, students will be familiar with natural surroundings, forests, marshes and rangelands.

Text: "Trees, Shrubs and Flowers to Know in B.C.", C.P. Lyons, Dent, 1965; "General Botany", Fuller, J.H. and Ritchie, D.D., Barnes and Noble Outline Series, 1967.

45.220 — INTRODUCTION TO SOILS
Unit: 1.5

Introduces students to how soils form, what soils mean in the forms of surface materials as foundation for structures and as mediums for plant growth.

Covers the properties of soils: texture, structure and water retention. Introduces students to the soils and landscapes of British Columbia.

Those students studying for credit must be prepared to take one day field trip during the term and a weekend field trip at the end of the term. Students must be prepared to provide their own transportation (car pools).

Text: "The Nature and Properties of Soils", N.C. Brady, 1974 (Reference).

45.226 — ECOLOGY
Unit: 1.5

Introduces students to the basic concepts and terminology of ecology. It develops an appreciation for the components of ecosystems including man and his activities, outline the energy flow in, and introduce management aspects of, numerous eco-systems.

After successful completion students are able to identify numerous ecosystems of terrestrial and aquatic environments, describe energy fixation transfer in them, and recognize major approaches towards their proper management.

The material is presented in the form of lectures and closely allied tutorials. Approximately four field trips are held on Saturdays and Sundays in lieu of classroom sessions. Students should be prepared to provide their own transportation (car pools).

Text: "Challenge of Ecology", C.C. Kucera, 1977.

45.501/601 — FOREST MEASUREMENT 1
Unit: 1.0 — 45.501
1.0 — 45.601

Want to work in the woods next spring? Take this forestry field training course. Learn the basics of mapping, note taking and the use of most field instruments used in logging engineering layout, plus cruising and other renewable resource inventory. Includes measurement of distance, direction and elevations, plotting topographic detail and the care and maintenance of equipment. Gives partial credit towards a BCIT Forest Engineering Certificate.

45.502/602 — FOREST MEASUREMENT 2
Unit: 1.0 — 45.502
1.0 — 45.602

This courses familiarizes the student with advanced methods of forest timber volume measurement and calculation, sampling and report compilation.

Subjects include measurement of standing and felled timber, tree diameter, height and age; use of volume tables; construction of local volume tables; sampling types and design; aerial sampling, point sampling with elementary statistical analysis; compilation methods for sample data and report writing.

Prerequisite: 45.501/601 Forest Measurement 1

45.601 See 45.501

45.602 See 45.502

45.903 — FOREST LAND MANAGEMENT
Unit: 1.5

Acquaints students with management techniques employed to solve problems inherent in the use of forest lands.

The four major aspects of forest land management are integrated into a comprehensive unit which enables the student to understand management procedures. This is accomplished by relating historical events to present management policies; outlining the government agencies responsible for forest land management; determining the main uses of forest lands, examining the conflicts which arise, and examining land tenure disposition.

Note: For Day School equivalency; adequate field work as prescribed by the instructor must be completed.

Text: "New Forest Act".

45.904 — PRINCIPLES AND PRACTICES IN WILDLIFE MANAGEMENT
Unit: 1.0

Provides an introduction to wildlife management. Covers the basic ecological principles upon which wildlife management practices are based, and then explores the biology and habitat requirements of common native wildlife species. Some basic wildlife techniques are explained, including techniques for habitat improvement. At the end of the course a day is spent in the field examining local wildlife areas.

Suitable for laypersons, such as naturalists or hunters who want a better understanding of wildlife management. Also useful for technical and professional graduates in such fields as agriculture and forestry whose work involves wildlife.

Text: "Wildlife Management Techniques", R. Giles, 3rd Edition.

45.905 — CONSERVATION, OUTDOOR RECREATION, EDUCATION
Non-credit

This preliminary course acquaints the outdoorsman with some of the recreational options associated with wildlife, and provides instruction on safety and enjoyment of the outdoors.

Upon completion the student is able to improve hunting standards and promote safe and knowledgeable outdoor recreation, and shows an appreciation of the value of wildlife and natural environments in our modern way of life. The student is expected to write the CORE examination as a prerequisite to obtaining a hunting licence, which is mandatory under the Wildlife Act.

Topics covered by lectures, slides and displays include ecology — conservation and the future; wildlife management and restoration; habitat requirements of wildlife and animal movements; organization of the fish and wildlife branch; outdoor ethics; firearm handling, why we have regulations; animal identification; some birds of B.C.; fish of B.C.; survival and first aid; archery and canoeing; backpacking and mountaineering.

Text: "Fish and Wildlife, the Recreational Resource".

45.906 — LOG SCALING
Unit: 2.0

Prepares candidates for the B.C. Forest Service Licensed Scalers Examination (Coastal).

Students learn the skills involved in accurate measurement, volume estimations and grading of coastal logs.

Includes classroom theory and practical scaling in various locations along the north arm of the Fraser River.

Scale sticks and life vests supplied; students must supply suitable caulk boots.

Emphasis is on the new B.C. Government metric scale and current (1981) coastal log grades.

45.910 — WILDLAND RECREATION AND PARK MANAGEMENT
Unit: 1.0

This course makes the student aware of the importance of recreation and the wildland recreation manager in the proper planning and administration of Canada's Wildlands. It provides the student with a working knowledge of recreational pursuits on public and private wildlands within B.C., and informs him of the specific criteria involved in the assessment and management of recreational wildland.

The course includes an introduction to recreation, wilderness management, winter-oriented recreation, water-oriented recreation, campsite design, wildlife in parks, interpretation, visual management, public input in decision-making, trail design, etc.

45.911 — B.C. FISH AND FISHERIES
Unit: 1.0

Provides basic knowledge and technical information relating to B.C. fish and their management for naturalists, sportsmen, foresters, agriculturists and others in the resources field.

Upon successful completion students have learned about the biology and characteristics of numerous species of B.C. fish, and have an insight into the parameters of fisheries management.

The course examines population, dynamics, fish physiology, survey techniques, pollution sampling, resource problems, and the effects of B.C. fishing regulations. Approximately six sessions involve examination and discussion of preserved specimens. These sessions are supplemented with presentations related to the biology of the species under discussion. The remaining sessions deal with management aspects of the fisheries resource.

Text: "Fresh Water Fish of British Columbia", B.C. Provincial Museum Handbook Series.

46.502/602 — PULP AND PAPER MANUFACTURE
Unit: 1.0 — 46.502
1.5 — 46.602

This course provides a detailed background of the pulp and paper industry of British Columbia for those presently employed in manufacturing, service functions and allied industries. It imparts an understanding of the processes employed, and information on the mechanical equipment utilized, in the manufacture of pulp and paper.

The course examines wood structure and chemistry, water treatment, mechanical and chemical pulp manufacture, pulp bleaching, kraft recovery systems, chemical preparation and handling, pollution abatement, paper and paperboard manufacture, future developments. Guest lecturers discuss highly specific areas. Field trips to related plants will be scheduled.

Two day field trips are scheduled. The course will be presented on alternate Saturdays, dates will be announced.

46.504/604 — LUMBER AND PLYWOOD MANUFACTURE
Unit: 1.0 — 46.504
1.5 — 46.604

This course will supplement the technical knowledge of individuals directly or indirectly involved in the wood products industry.

Aspects of the manufacturing processes and services related to the production of lumber and plywood will be examined.

Topics include sawmill and planermill operation, saw technology, lumber seasoning, plywood manufacture, recovery, quality control, maintenance organization, accident and fire prevention, mobile equipment, environmental control. Coastal operations will be compared with operations in the B.C. Interior.

Classroom discussion will be encouraged, and laboratory demonstrations of related equipment will be given. Students to provide own transportation for two field trips in the Vancouver area.

Text: "Wood Processing Manual", Library Bookstore.

46.602 See 46.502
46.604 See 46.504

47.501/601 — GAS AND OIL PRODUCTION AND TRANSMISSION
Unit: 2.0

This course examines petroleum geology, reservoirs, exploration well-drilling, field production and treatment, conservation, gathering and transmission systems, pipeline construction and maintenance, corrosion protection, compressor and pumping stations, flow computations, economics of design, measurements, laws and regulations.

47.521/621 — DISTRIBUTION AND UTILIZATION — GAS
Unit: 2.0

This course examines city gas stations; regulations and colorization; high, medium, and low-pressure distribution systems; network analysis; service regulations; meters; combustion stoichiometry; furnaces, boilers; installation codes; industrial and power utilization; corrosion control; peak shaving; storage.

47.601 — See 47.501
47.621 — See 47.521

48.511/611 — PROCESS INSTRUMENTS 1
Unit: 2.0

Through this course persons with little or no experience learn the fundamentals of industrial instrumentation and prepare for more advanced courses. In addition to terminology and symbols, participants study the principles and characteristics of commercial instruments used to measure variables such as density of fluids, pressure in vessels, levels in tanks, and process temperature.

On successful completion the student can perform routine instrument calibrations, understand the principles of their operation, and is familiar with standard calculations relating to the variables studied.

The course consists of a series of lectures explaining how instruments work, the solution of typical instrumentation problems, as well as laboratory sessions working with commercial instruments.

Text: Instrument Engineers Handbook, Volume 1, by Bella Liptak.

Prerequisite: Physics 11 and Algebra 12, or permission of the instructor.

48.512/612 — PROCESS INSTRUMENTS 2
Unit: 2.0

As a continuation of Process Instruments 1, this course covers the principles and applications of methods of measurement of fluid flow, humidity, dew point, pH and oxygen.

On successful completion the student can identify and select appropriate instruments for process measurements and is able to calibrate instruments and perform calculations pertaining to measurement applications.

This course consists of lectures, problem solving assignments, and laboratory sessions working with commercial instruments.

Text: Instrument Engineers Handbook, Volume 1, by Bella Liptak.

Prerequisite: 48.511/611 Process Instruments 1 or permission of the instructor.

48.513/613 — PROCESS INSTRUMENTS 3
Unit: 2.0

This course is a continuation of Process Instruments 1 and 2. Topics covered include measurement of electrolytic conductivity, basic spectrometry and typical spectrometer alignments, basic chromatography and chromatograph operating principles.

Students come to understand several methods of measurement and become familiar with typical equipment used in those measurements. Though not a prime aim of this course, fault finding and correction are also covered.

The course consists of lectures, demonstrations and problem solving assignments and discussions, together with laboratory experiments reinforcing and expanding the class presentations. Most work is with commercial/industrial equipment.

Text: Instrument Engineers Handbook, Volume 1, by Bella Liptak.

Prerequisite: 48.512/612 Process Instruments 2.

48.517/617 — PROCESS CONTROL 1
Unit: 2.0

Introduction to the basic principles and practices common to many types of Automatic Process Control Systems.

On satisfactory completion the student can use and interpret Instrument Society of American Symbols, component diagrams, and system diagrams; calibrate, troubleshoot, and analyze the response of various industrial control components; apply basic feedback theory to electronic, pneumatic and hydraulic control systems; design and construct a single variable control system using standard industrial process control components.

Lectures, demonstrations and laboratory exercises present the following topics: basic automatic control principles; feedback circuit design principle in devices and systems; block diagrams and transfer functions; pneumatic and hydraulic amplifier circuits applied to transmitters, signal converters, power amplifiers; computing circuits and position servomechanisms; final control elements; control valve characteristics, specification and sizing.

Text: Instrument Engineers Handbook, Volume 2, by Bella Liptak.

Prerequisite: 48.512/612 Process Instruments 2 or permission of the instructor.

48.518/618 — PROCESS CONTROL 2
Unit: 2.0

An introduction to the principles and practices used in the design, operation and application of common industrial process control systems.

On satisfactory completion the student can use and interpret system schematics and flow diagrams; calculate, analyze and adjust the response of various control circuits and systems; apply feedback and feedforward concepts to various industrial control systems; design and construct multi-variable process control systems using standard industrial control components and computer software.

Topics include closed loop system stability and damping; controller circuits for proportional, reset, and rate modes; process control strategies including ratio, cascade, feedforward plus feedback, and total feedforward control; introduction to computer process control.

This course consists of lectures, demonstrations, and laboratory exercises, working with manufacturers' pneumatic and electronic control equipment applied to steam and liquid processes.

Text: Instrument Engineers Handbook, Volume 2, by Bella Liptak.

Prerequisite: 48.517/617 Process Control 1

48.611 See 48.511
48.612 See 48.512
48.613 See 48.513
48.617 See 48.517
48.618 See 48.518

48.912 — MEASUREMENT ELECTRONICS
Unit: 1.0

Directed towards personnel involved with commercial or industrial instrumentation, this course familiarizes the student with the electronic circuitry basic to scientific and industrial measurement transducers.

On successful completion the student can specify the correct circuitry to be used in conjunction with measurement transducers such as strain gauges, temperature sensors, conductivity probes, ion concentration probes, and flow meters in the measurement of level, pressure flow, temperature, conductivity, etc. Students learn to use operational amplifiers for the design and construction of various instrumentation amplifier

circuits given specific requirements for gain, linearity, stability and CMRR, or select the correct commercially available module if applicable. Students also learn to describe the circuitry used in many commercial measurement devices by analysis of schematic diagrams.

The course includes the design and application of bridge circuits for various measurement transducers; use of operational amplifiers for amplification of low level DC signals, and "hands on" analysis of various manufacturers' measurement amplifier circuitry.

Prerequisite: 43.504/604 Electronic Circuits 1, or approved equivalent. No prior knowledge of operational amplifiers is required.

48.922 — ELECTRONIC SIGNAL CONDITIONING METHODS IN INSTRUMENTATION

Unit: 1.0

As a continuation of 48.912 Measurement Electronics, this course acquaints students with methods of electronic signal transmission and conditioning in the process control loop.

On successful completion the student can design simple current-to-voltage and voltage-to-current convertors using op-amps, and analyze and troubleshoot typical industrial two wire transmitters. Students also learn to apply operational amplifiers to analog signal conditioning circuits such as summers, DFGs, multipliers, square and square root units, limiters, comparators, etc. and be conversant with industrial modules available.

The course emphasizes the practical approach by concentrating on typical industrial applications and problems in lectures and laboratories.

Prerequisite: 43.506/606 Electronic Circuits 2, or 48.912 Measurement Electronics.

48.933 — ELECTRONIC CONTROLLERS

Unit: 1.0

As a continuation of 48.922 Electronic Signal Conditioning, this course familiarizes the student with the design objective and circuitry common to industrial electronic controllers.

On successful completion students can design and implement simple two and three mode controllers using operational amplifiers in configurations commonly used in commercial equipment. They learn to discuss various design configurations used for obtaining bumpless transfer between modes, and identify methods used by the analysis of various manufacturers' schematics.

Students become conversant in the requirements for analog back-up in computer base control systems, and can describe the operation and interface requirements for typical Computer/Manual and Computer/Auto/Manual stations.

Prerequisite: 48.922 Electronic Signal Conditioning, or 43.506/606 Electronic Circuits 2, or approved equivalent.

49.531/631 — ELEMENTS OF MACHINE DESIGN

Unit: 1.0 — 49.531
1.5 — 49.631

This course is intended for draftsmen and designers requiring the capability of basic machine design. On successful completion the student will carry out detailed design of various machine components, and stress and deflection analysis and can select and specify appropriate standard components for machine assemblies and mechanical drives.

The course reviews and consolidates the theory in prerequisite courses. Other topics include combined stresses with emphasis on solution by Mohr's circle; theories of failure; stress concentration; fatigue phenomena; welded connections; bolted and riveted connections; spur, helical and worm gear drives; speed reducers; belt and roller chain drives; flexible couplings; shafts; anti-friction and journal bearings; brakes and clutches; power screws; helical and leaf springs; an introduction to mechanical vibrations with emphasis on the critical speeds of rotating assemblies.

Text: "Mechanical Engineering Design" 3rd Edition, Shigley, McGraw-Hill Ryerson.

Prerequisite: 49.919 Mechanics of Materials 2, 32.931 Calculus 1, 32.932 Calculus 2, are strongly recommended.

49.542 — FLUID POWER 1

Unit: 1.0

Provides an understanding of pneumatic control systems.

Fluid power components, their symbols, function and construction, are examined and used in the design, construction and testing of simple and sequential control systems. Sizing calculations for system components are also covered.

Text: Fluid Power Handbook.

49.543/643 — MANUFACTURING PROCESSES 1

Unit: 1.0 — 49.543
1.5 — 49.643

Provides a general insight into the various aspects of production engineering related to manufacturing, for persons entering or presently engaged in the mechanical field. Successful students develop an understanding of traditional non-metal-removal manufacturing processes and the recent advances in this field.

Lectures, demonstrations, assigned problems and laboratory experience are all part of the course. Topics include the study of modern manufacturing processes, casting, welding, hot and cold forming, extruding, forging, die casting, stamping and pressing. State of the art methods of manufacture are given in the final 6 weeks of the course. Field trips to appropriate local industries are arranged.

Text: "Manufacturing Process and Materials for Engineers", 2nd Edition, Doyle, Kesser, Leach, et al, Prentice Hall.

49.544/644 — MANUFACTURING PROCESSES 2

Unit: 1.0 — 49.544
1.5 — 49.644

This course provides a general insight into the various aspects of production engineering related to manufacturing, for persons entering or presently engaged in the mechanical field. Students develop an understanding of traditional metal-removal manufacturing processes and the recent advances in this field.

Lectures, demonstrations, assigned problems and laboratory experience are part of this course. Topics include the machinability of materials, theories of tool geometry, effective cutting speeds, time and productivity related to machine tools, power requirements and forces involved, an introduction to production engineering, organized processing, break-even points and equal cost quantities. Detailed knowledge of the basic machine tools, evaluation of design and production features, machine specification, installation and maintenance systems.

Text: "Manufacturing Process and Materials for Engineers", 2nd Edition, Doyle, Kesser, Leach, et al, Prentice Hall

49.545/645 — ELEMENTS OF TOOL DESIGN

Unit: 1.0 — 49.545
1.0 — 49.645

This course is intended for draftsmen and designers who would benefit from knowledge in the field of special purpose tooling.

The course includes introduction to design of special purpose tooling, process planning, design considerations of various types of jigs, fixtures, gauges, metal-cutting dies, feed mechanisms, presses, scrap strip-layout, standard parts. Assignments will have to be worked on away from classroom.

Prerequisite: 49.900 Drafting Fundamentals.

49.585/685 — PRODUCTION ENGINEERING MANAGEMENT

Unit: 1.0 — 49.585
1.5 — 49.685

This course provides an insight into aspects of management and the industrial engineering functions of a manufacturing plant. It is intended for technologists, engineers, designers, draftpersons, and technical sales people who wish to have a clearer understanding of the range of problems and decisions involved in a manufacturing organization.

Lectures, case studies and films, will present the following topics: management and plant organization, plant location and layout, production control, maintenance management, production planning, job design and time standards.

Text: "Manufacturing Organization and Management", Amrine, Ritchey and Hulley, Prentice Hall.

49.587/687 — SOLAR ENGINEERING/PRACTICAL DESIGN AND ECONOMICS

Unit: 1.0 — 49.587
1.5 — 49.687

This training course, for people in the building industry, is primarily to develop the capabilities of sizing, costing, installing and operating economic solar systems. It also provides the mechanism of an annual update

of the basic skills as applied to the latest developments, with emphasis on Canadian requirements.

The Solar Energy Applications Laboratory/Colorado State University training course material forms the nucleus of this course, which requires all of the first term to complete. In the second term, the material is reviewed and expanded upon by using a detailed design case study. Building on this essential foundation the latest developments in solar engineering will be explored. The selected topics are: passive solar heating systems; heat pump systems/residential; heat pump systems/commercial; seasonal storage solar heating systems.

Text: "Sizing, Installation and Operation of Systems, and Design of Systems" (Solar Energy Applications Laboratory, Colorado State University, U.S. Gov. Printing Office).

49.589/689 — PASSIVE SOLAR DESIGN

(formerly Low Energy Building Design)
Unit: 1.0 — 49.589
1.0 — 49.689

This course provides instruction in the fundamentals of energy sensitive building design; effects of site, building form and orientation, building skin, internal and solar gains, and economics considered.

It covers the fundamental methods of reducing energy use in buildings through proper design. Climatic factors, building form and orientation are considered in relation to their effects on energy use.

Thermal properties of the building skin are analyzed in detail. Heating, as well as natural lighting due to passive solar systems, are investigated. System mathematical modelling is used to optimize design with regard to performance and economics.

A design and analysis project of a passive solar and energy conserving building is a major part of the course.

49.642 — FLUID POWER 2

Unit: 1.5

Provides an understanding of hydraulic control systems and an introduction to fluidic controls systems and control logic.

Fluid power components, their symbols, function and construction are examined and used in the design, construction and testing of a variety of hydraulic control systems. Sizing calculations for system components are also covered.

Text: Vickers Manual.

Prerequisite: 49.542 Fluid Power 1.

49.643 See 49.543
49.644 See 49.544
49.645 See 49.545
49.685 See 49.585
49.687 See 49.587
49.689 See 49.589

49.900 — DRAFTING FUNDAMENTALS

Unit: 1.0

An introductory course for persons with little or no experience in graphics. (Students are required to purchase drafting equipment and supplies on the first night of class). Upon successful completion students are able to produce and read simple drawings.

Topics include scales, geometric constructions, basic orthographics, detail interpretation, line visibility, dimensioning, auxiliary views, true shape, inclined and skew surfaces, sections, pictorials, working drawings and freehand sketches.

49.903 — MECHANICAL DRAFTING 1

Unit: 1.0

Will enable students to handle graphical design situations and problem solving that may be encountered in a mechanical industrial environment.

Topics include review of 49.900 basics, descriptive geometry, intersections and developments, threads and fasteners, weld symbols.

Text: "Engineering Drawing and Design", Jensen-Helsel (Latest Edition).

Prerequisite: 49.900 Drafting Fundamentals.

49.905 — DRAFTING — STRUCTURAL

Unit: 1.0

Provides a general insight into graphical aspects of structural problems. Of benefit to managers, construction workers, foremen, planners and estimators. Successful students will understand and have reasonable proficiency in the application of drawing skills and techniques to structural engineering.

There will be drawing assignments related to wood frame, reinforced concrete and steel structures.

Prerequisite: 49.900 Drafting Fundamentals.

49.906 — DESCRIPTIVE GEOMETRY

Unit: 1.0

This is not a basic drafting course but is intended to help students solve spatial problems by the use of graphics.

Topics include true length lines, parallel and intersecting lines, shortest line between skew lines, line in a plane, true size of plane, dihedral angle, intersection of plane and polyhedron, intersection of surfaces and development of surfaces (prisms, cylinders, cones).

Text: "Descriptive Geometry", M.C. Hawk, McGraw-Hill (Schaum's outline series).

Prerequisite: 49.900 Drafting Fundamentals.

49.907 — MECHANICAL DRAFTING 2

Unit: 1.0

Covers more advanced topics and technical applications that could be expected of a Mechanical Technician.

Topics include review of 49.903 topics, limits, fits and surface roughness, geometric tolerances, piping drawings (isometric/orthographic), cams.

Text: "Engineering Drawing and Design", Jensen-Helsel (Latest Edition)

Prerequisite: 49.903 Mechanical Drafting 1

49.908 — DRAFTING — CIVIL

Unit: 1.0

Provides a general insight into graphical aspects of civil problems. Of benefit to managers, construction workers, foremen, planners and estimators. Successful students understand and have reasonable proficiency in the application of drawing skills and techniques to civil engineering.

Included are drawing assignments related to topographical drafting plans and profiles, cuts and fills and municipal sewage systems.

Prerequisite: 49.900 Drafting Fundamentals.

49.909 — MECHANICAL DRAFTING 3

Unit: 1.0

Covers advanced and student oriented projects that could be expected of a mechanical engineering technologist in a wide variety of industrial applications.

Topics include review of 49.907 topics, gearing design project involving bill of materials, joints, bay and column lines. Topics can be varied to suit different areas of student interest such as force and vector analysis (graphical solutions), graphical calculus, hydraulic circuit symbols, civil projects (cut/fill/relocation of contours), survey projects, perspectives, computer graphics (when available).

Text: "Engineering Drawing and Design", Jensen-Helsel (Latest Edition).

Prerequisite: 49.907 Mechanical Drafting 2

49.913 — INVENTIONS

Unit: 1.0

The practical development and marketing of inventions in Canada. Includes creative problem solving; technical and market evaluation; patents, protection, contracts; government and private financing; selling and/or licensing, and starting your own business.

49.915 — APPLIED MECHANICS 1

Unit: 1.0

Examines how forces affect mechanical systems. Successful students are able to solve elementary problems and understand terminology used in force calculations.

Topics include dimensions and units, trigonometry review; vectors and scalar forces, components, resultants; moments and couples; free body

diagrams, equilibrium; work, energy, and power fundamentals; potential and kinetic energy: conservation of energy: torque and shaft power, efficiency; energy requirements in the transportation of fluids. Both English and S1 units are used.

Text: "Engineering Mechanics — Statics and Dynamics", J.F. Shelley, McGraw-Hill Ryerson.

Prerequisite: 32.901 Algebra 2 and 32.903 Trigonometry.

49.916 — APPLIED MECHANICS 2
Unit: 1.0

Topics include two dimensional force systems: collinear, concurrent, parallel systems; force equilibrium problems; plane trusses: method of joints and method of sections; plane frames, force analysis; friction: coefficient, angle of friction, sliding or tipping; centroids of plane areas; distributed forces: pressure, uniform distribution, varying distribution, forces on submerged surfaces; three dimensional force systems; three dimensional moment systems.

Text: "Engineering Mechanics — Statics and Dynamics", J.F. Shelley, McGraw-Hill Ryerson.

Prerequisite: 49.915 Applied Mechanics 1.

A continuation of 49.915 Applied Mechanics 1.

49.917 — APPLIED MECHANICS 3
Unit: 1.0

Topics include linear kinematics: graphical acceleration, velocity, displacement; numerical relative values; linear dynamics: Newton's 2nd Law, rectilinear motion, curved motion, normal and tangential forces, inertia force; kinematics of rotation: angular acceleration, velocity, displacement; translational and rotational relationship, centre of rotation; mass moments of inertia; rotational dynamics about a fixed point, rolling; linear and rotational dynamics combined; inertia forces: sliding and tipping; work, energy, power; springs.

Text: "Engineering Mechanics — Statics and Dynamics", J.F. Shelley, McGraw-Hill Ryerson.

Prerequisite: 49.916 Applied Mechanics 2.

A continuation of 49.916 Applied Mechanics 2.

49.918 — MECHANICS OF MATERIALS 1
Unit: 1.0

The course is for mechanical draftsmen, designers and technical sales personnel. On successful completion students have a basic understanding of the skills of analysis and design of elementary structural and mechanical members subjected to static loading.

The course examines the properties and behavior of engineering materials; elementary theory of elasticity related to axial and torsional loading; shear force and bending moment in beams.

Text: "Applied Strength of Materials" by R.L. Mott, Prentice Hall.

Prerequisite: 49.916 Applied Mechanics 2.

49.919 — MECHANICS OF MATERIALS 2
Unit: 1.0

Successful students can deal with more complex problems of members understatic loading than covered in 49.918, Mechanics of Materials 1. The course offers further study of beams; beams' shear and bending; deflection theory; principle of superposition; columns; trusses; rigid frames; introduction to combined stresses; welded and bolted connections; pressure vessels.

Text: "Applied Strength of Materials" by R.L. Mott, Prentice Hall.

Prerequisite: 49.918 Mechanics of Materials 1, 32.931 Calculus 1.

49.921 — APPLIED HEAT 1
Unit: 1.0

This course provides students with an understanding of the fundamentals of applied thermodynamics, and helps those involved in the power and process fields and those who intend to take more specialized courses in heating, ventilating, refrigeration and heat transfer.

Topics include energy, temperature, transmission of heat; specific heat, conductivity, convection, radiation, molecular theory, ideal gas, expansion of solids, liquids and gases due to heat, pressure, vacuum; Boyles Law; the Gas Equation.

Text: "Thermodynamics and Heat Power", 3rd Edition, Granet, Reston.

Prerequisite: 32.901 Algebra 2 and 32.903 Trigonometry.

49.922 — APPLIED HEAT 2
Unit: 1.0

This course is a continuation of 49.921 Applied Heat 1. Topics include: thermal properties of liquids and gases; gas processes, psychometric chart; power cycles; refrigeration and heat transfer fundamentals.

Text: "Thermodynamics and Heat Power", 3rd Edition, Granet, Reston.

Prerequisite: 49.921 Applied Heat 1.

49.923 — MECHANICS OF FLUIDS
Unit: 1.5

Designed for students requiring a basic understanding of fluid properties, and methods of determination of energy losses involved in fluid systems. It provides students with the necessary skills to analyze any fluid process or system for fluid energy losses or power requirements. Students wishing to take more advanced practical engineering courses such as 49.929 Heating and Air Conditioning, 49.925 Fans and Ductwork Systems, 49.924 Pumps and Fluid Systems, 49.542/642 Fluid Power, etc. will benefit from understanding the principles of fluid systems.

The course examines the basic properties of fluids; Bernoulli's Equation, energy and power transfer; flow measurement and pipe flow characteristics for both liquids and gases; heat and energy losses; laminar and turbulent flow characteristics and forces due to change in fluid flow.

Prerequisite: 49.915 Applied Mechanics I.

49.924 — PUMPS AND FLUID SYSTEMS
Unit: 1.0

This course provides an explanation of the various types of pumps and their applications in different systems. Successful students are able to calculate liquid flow quantities in pipe systems, properly select the type of pump for a given application, and understand pump operating conditions.

Topics include classification of pumps, centrifugal pump theory, pump construction; pump drives, variable speed couplings; characteristics of pumping systems, special industrial pump applications and controls; pump installation and maintenance.

Prerequisite: 49.923 Mechanics of Fluids.

49.925 — FANS AND DUCTWORK SYSTEMS
Unit: 1.0

This course is intended to provide an understanding of types of fans and their application, together with an approach for sizing supply and exhaust ducts and conveying systems. Students learn to lay out various duct systems to deliver required air quantities and to select the proper equipment to suit each system.

The course examines air distribution in heating and air conditioning systems; capture velocity and design of exhaust systems; ventilation in industry, with applications to suit student needs; pneumatic conveying. Laboratory tests on various types of fans are included in the course.

Prerequisite: 49.923 Mechanics of Fluids.

49.927 — PLUMBING SYSTEMS DESIGN 1
Unit: 1.0

This course is for persons involved in engineering design, sales, or inspection of commercial plumbing systems at a junior level. On successful completion students have a grounding in plumbing systems, and can select components for compliance with relevant codes, regulations, manufacturers' specifications and engineering practices.

Topics include codes; basic engineering principles and graphic presentations related to plumbing systems design; load calculations; piping methods, sizing of system components for storm and sanitary drainage and water distribution. Some drafting skill will be required.

Prerequisite: 49.900 Drafting Fundamentals.

49.930 — METROLOGY
Unit: 1.5

This course familiarizes industrial management and production personnel with inspection methods and equipment as used in industry. Successful students learn the principles of various inspection methods and their practical uses in industry.

Topics include interferometers, optical comparators, measuring devices for surface texture and surface flatness; air and electronic gauging procedures; metrology of angles and screw threads; use of precision measuring instruments and mass production gauging.

Text: "Metrology for Engineers", J.F.W. Galyer and C.R. Shotbolt, Cassell Technical Books.

Prerequisite: 32.901 Algebra 2 and 32.903 Trigonometry.

49.931 — MANUFACTURING PROCESSES 3
(formerly Analysis of Machining Techniques)
Unit: 1.5

This course familiarizes management and production personnel with operations performed on machine tools. It provides an in-depth study of these operations.

Students are involved in laboratory exercises through a series of projects which emphasize practical work in small groups. Topics include programming for a numerical control machine, jig boring operations, milling machine operations and a turret lathe process. Each of these projects includes organizing the sequence of operations, processing, programming, time and cost estimating, machine and tool set-up, manufacture, inspection and quality control.

Text: "Manufacturing Processes and Materials for Engineers", Doyle, Kesser, Leach, et al, Prentice Hall.

Prerequisite: 49.544/644 Manufacturing Processes 2.

41.932 — ENGINEERING ECONOMICS
Unit: 1.0

This course emphasizes the importance of making sound economic decisions when faced with alternative methods of solving technical problems. The course material is useful to engineers, technologists, technicians and designers in all areas, both in their work and personal finances. It provides the basic skills and concepts required to analyze comparative costs and to understand the time value of money (interest), inflation, depreciation, running costs, salvage value and tax considerations.

The course examines cash flow diagrams and equivalence, interest formulae, annual cost, present worth, uncertainties and inflation, taxes, economic lot sizes and replacement of equipment.

49.933 — REFRIGERATION, HEAT TRANSFER AND THERMAL POWER SYSTEMS
Unit: 1.5

This course treats in greater depth the refrigeration systems and equipment introduced in 49.921 Applied Heat 1, giving students experience in solving heat exchange problems and an understanding of modern thermal power generating systems. Students acquire a working knowledge of refrigeration systems through the use of problem solving in practical laboratory investigations; an understanding of the principles of heat transfer and the solution of simple problems in the design of heat exchangers, and familiarity with modern power generating systems and equipment.

The course examines vapor compression refrigeration cycles, multi-stage and cascade systems, absorption systems of refrigeration, the heat pump, steam-jet chiller: heat transfer theory, conduction, convection, radiation; problems in heat exchanger design, experimental investigations of heat transfer; modern power generating cycles, reheat, regenerative feed water heating, fossil fuel fired Rankine cycles, gas turbine intercooled regenerative cycles.

Prerequisite: 49.921 Applied Heat 1.

49.935 — AUTOMATIC SPRINKLER SYSTEMS DESIGN 1
Unit: 1.0

This course is for persons involved in engineering, design, supervision or inspection of commercial and industrial automatic sprinkler systems. Successful students gain an understanding of pipe schedule systems and water supply system analysis.

The course examines the basics of wet pipe systems and dry pipe systems; NFPA Standard #13; system components and applications; basic hydraulics of piping systems; water supply system analysis and tests with various examples; quick-opening devices. Classroom lectures may be augmented by a Saturday field trip to take water flow tests. Students require an electronic calculator with XY function.

Text: "NFPA Standard #13 (Automatic Sprinklers)", current edition; "Automatic Sprinkler and Standpipe systems", John L. Bryan; National Fire Protection Association, Boston. Limited supplies of these texts are available from the BCIT bookstore.

Prerequisite: Grade 12 Mathematics or 32.900 Algebra 1.

49.936 — AUTOMATIC SPRINKLER SYSTEMS DESIGN 2
Unit: 1.5

Advanced instruction is provided for persons involved in engineering design, supervision, or inspection of automatic sprinkler systems in commercial and industrial buildings. The course provides a detailed understanding of these systems to designers, engineers, and fire service personnel.

The course examines deluge systems; pre-action systems; combined dry pipe and pre-action systems; water spray systems; special systems; hydraulics of sprinkler systems including tree, looped and gridded systems; computerized calculations; economical design considerations; water tanks; fire pumps, booster pumps, jockey pumps; maintenance of systems. Students will require an electronic calculator with X Y function.

Text: "NFPA Standard #13 (Automatic Sprinklers)", current edition; "Automatic Sprinkler and Standpipe Systems", John L. Bryan; NFPA Standard #231; NFPA Standard #231C; NFPA Standard #15. All texts are available from the National Fire Protection Association, Boston.

Prerequisite: 49.935 Automatic Sprinkler Systems Design 1, or permission of the instructor.

49.937 — HEATING, VENTILATING AND AIR CONDITIONING 1
Unit: 1.0

Part 1 of a three-part course on heating, ventilating and air conditioning; the three parts arranged in sequence to involve the student progressively with building thermal load evaluation and system design.

Outline: Heat energy sources; building heat loss estimates; introduction to properties of air using the psychrometric chart; ventilation air requirements; sizing and layout of piping systems for hot water space heating; and centrifugal circulating pump performance characteristics.

49.938 — HEATING, VENTILATING AND AIR CONDITIONING 2
Unit: 1.0

Part 2 of a three-part course on heating, ventilating and air conditioning.

Outline: Hot water space heating equipment encompassing boilers, heating units, expansion tanks, operating valves and trim; air handling equipment including filters, fans, heating coils, and central heating and ventilating units; warm air heating systems; ducted air distribution; and space air distribution entailing grille and diffuser selection procedures.

Prerequisite: 49.937 Heating, Ventilating and Air Conditioning 1.

49.939 — HEATING, VENTILATING AND AIR CONDITIONING 3
Unit: 1.0

Part 3 of a three-part course on heating, ventilating and air conditioning.

Outline: Properties of air extending use of psychrometric chart to air conditioning comfort criteria and examination of air conditioning processes; refrigeration for air conditioning, encompassing evaporator, compressor, condenser, and expansion valve performance characteristics and selection; air conditioning systems, encompassing representative unitary, constant volume, and variable volume systems.

Prerequisite: 49.937 and 49.938 Heating, Ventilating and Air Conditioning 1 and 2.

49.940 — DRAFTING — PROCESS PIPING 1
Unit: 1.0

This program is designed to introduce the student to process plant layout design. Focus is to acquaint the individual with basic piping fundamentals as used in industry. Although this course is primarily based on the petro-chemical industry, it concerns inself with process plant layout designs in the broad sense. This means the student can apply this course to any type of industry.

Text: "Process Piping Drafting" Rip Weaver, Gulf Publishing Co.

49.945 — DRAFTING — PROCESS PIPING 2
Unit: 1.0

This course allows persons with minimum drafting experience to develop their designing skills in the process piping industry. With only a plant's major equipment located, the student learns the procedure of making layout designs of piping systems within plant battery limits. The student produces 1 plan view, 1 section drawing and a number of isometric drawings of a small process plant.

Text: "Process Piping Drafting" Rip Weaver, Gulf Publishing Co.

Prerequisite: 49.940 Process Piping 1 or minimum one year piping drafting experience.

49.950 — COMPUTER NUMERICAL CONTROL
Unit: 2.0

Intended for persons who are machinists and will soon be using CNC machine tools. It will enable them to familiarize themselves with the Cadillac-Milling Machine and the codes for its various functions.

49.951/952 — NAVAL ARCHITECTURE FUNDAMENTALS 1 & 2
Unit: 1.0-49.951
1.0-49.952

History and development of types of small ships and boats; their characteristics and variations related to flotation, trim and stability; equipment and operational requirements; materials and forms of construction; and ship terminology including shipyard organization and functions.

49.952 — See 49.951
Unit: 1.0

49.953/954 — APPLIED NAVAL ARCHITECTURE 1 & 2
Unit: 1.0-49.953
1.0-49.954

Development of design requirements of typical small ships and boats relative to weight, space, equipment, general arrangements, and functional details.

Forms of hull structure, structural components and details including methods of construction.

Introduction to rules and regulations for structure, equipment and operation.

Note: A large portion of class with be devoted to sketching and conceptual drawing.

49.954 — See 49.953
Unit: 1.0

49.955 — APPLIED NAVAL ARCHITECTURE 3
Under development.

49.956 — APPLIED NAVAL ARCHITECTURE 4
Under development.

49.957 — APPLIED NAVAL ARCHITECTURE 5
Under development.

49.958 — APPLIED NAVAL ARCHITECTURE 6
Under development.

49.959 — NAVAL ARCHITECTURE THEORY 1
Under development.

49.960 — NAVAL ARCHITECTURE THEORY 2
Under development.

49.961 — NAVAL ARCHITECTURE THEORY 3
Under development.

49.962 — NAVAL ARCHITECTURE SHIP DESIGN 1
Under development.

49.963 — NAVAL ARCHITECTURE SHIP DESIGN 2
Under development.

49.964 — NAVAL ARCHITECTURE SHIP DESIGN 3
Under development.

50.101/201 — GEOLOGY
Unit: 1.0 — 50.101
1.0 — 50.201

This course provides people in the mining industry, who have no formal training in geology, with a framework on which previous and future geological experience can be organized. It is suitable for anyone with an interest in general geology.

In addition to gaining an outline of geology as related primarily to mining, the successful student is competent in identifying the common economic and rock forming minerals and in classifying the more common rock types. He has some appreciation of the economic value of minerals, and an insight into the structural problems associated with orebodies.

Topics include definition, basic concepts, earth's crust, geologic time, atomic structure of minerals, crystal forms, and symmetry systems; properties of common minerals; sedimentary rock types; clastic and chemical sedimentaries; igneous rock types; classification, deformation of earth's crust: folds, faults, metamorphic rocks; weathering erosion and glaciation; economic geology, mineral fuels, nonmetallics, ore deposits and their controls; geological history: precambrian, paleozoic, mesozoic, tertiary, pleistocene, geologic maps.

A full day field trip will be included during the term.

50.201 See 50.101

50.901 — GENERAL INTEREST GEOLOGY AND PROSPECTING
Non-credit

This is an introduction to the basic principles of geology and how these are applied to prospecting. At the same time some of the methods and equipment used in prospecting are discussed. This course is designed for part-time and full-time prospectors.

The successful student is capable of identifying the common rock-forming minerals, rocks and ore minerals; has an appreciation of geological structures and what constitutes an ore deposit; can read topographic and geological maps and understand the procedure for staking claims; has some proficiency in the use of the magnetic compass, dip needle, scintillometer, mineral lamp, gold pan, and geochemical soil-sampling kit; and understands the application of diamond drilling.

The topics are studied in a very practical "hands-on" approach. Lectures and films are used to assist in giving the student practical prospecting techniques.

A full day field trip is included during the term.

50.904 — THE MINING INDUSTRY
Unit: 1.0

The intention of this course is to provide a background for those unfamiliar with the industry, or those wishing to put their own interests into perspective (for example: prospectors, accountants, chemists, equipment suppliers). The course can be slightly modified to suit the aspirations of those registered.

The course is organized as follows: Introduction — the importance, nature, sub-divisions, and economic framework of the mining industry. Exploration techniques — brief descriptions of geology, geophysics, and geochemical principles. Mining methods — surface and underground, particularly those common in B.C., reclamation methods are included. Treatment Methods — ore values are concentrated with crushing, grinding, flotation, gravity separation, leaching, and other operations. Smelter contracts and mine evaluations can be covered.

51.504/604 — ASTRONOMY 1
Unit: 2.0

An introduction to astronomy as used by surveyors, of particular interest to persons intending to write the professional land surveyor examinations. Through the use of the BCIT planetarium facilities, students gain a good grounding in star identification.

The course includes an introduction to practical astronomy, the celestial sphere, the astronomical triangle; universal time, mean solar time, sidereal time; the emphermeris and star almanacs; instruments used in solar and stellar observations; star identification, observations for latitude; observations for time and longitude; observations for azimuth; observations for position.

Note: No credit will be given for 51.504 until the completion of 51.604 at which time 2 units will be granted.

51.506/606 — PHOTO INTERPRETATION AND REMOTE SENSING
Unit: 1.0 — 51.506
1.5 — 51.606

Designed to give engineers, planners, foresters, geographers, hydrologists, geologists and agriculturists, the application and interpretation of aerial photographs and other remote sensor acquired data, as they are applied to their respective fields.

On completion students have a working capability in image interpretation from photographic (camera) imagery, near infrared imagery, thermal infrared imagery and radar imagery.

This course covers the application of photographic systems in remote sensing, imaging, non-imaging sensors; the elements of technique of image interpretation, imagery interpretation equipment; mapping from remote sensor acquired data, terrain and mineral assessment and evaluation, forest land inventory and assessment, water resources evaluation, soils evaluation and assessment; urban environment inventory and analysis, analysis and application of aerial photos and other remote sensing data to engineering (route location, regional and site analysis).

51.507/607 — SURVEY DRAFTING
Unit: 2.0

An introductory course for survey technicians and technologists who wish to gain an understanding of basic drafting techniques as applied to survey technology.

Topics include lettering, technical sketching, scribing, use of ink and various drafting materials; preparation of preliminary plans, topographical plans; subdivision plans; right-of-way plans in accordance with General Survey Instructions of B.C. Land Surveyors.

Note: No credit will be given for 51.507 until the completion of 51.607 at which time 2 units will be granted.

51.604 See 51.504
51.606 See 51.506
51.607 See 51.507

51.909 — CALCULATORS (PROGRAMMABLE)
Unit: 1.0

Designed for mathematics, physics and engineering students enabling them to learn the most effective use of portable calculators.

This course covers two aspects of the programmable calculator; 1) Manual use — the use of built-in functions, storage registers, the stack, stack manipulation and register manipulation; 2) Programming — using the memory of the machine to "remember" algorithms that will solve a particular problem.

Also covered are flowcharts, programming techniques, subroutines, looping, controlled looping, conditional tests, and indirect operations.

Problems in Engineering, Surveying, and numerical analysis are presented.

51.910 — LAND USE CONTROL
Unit: 1.0

Provides a solid base of knowledge about land use and its regulation, for those involved or interested in many aspects of land control.

It is of particular interest to those involved in municipal engineering and planning departments, surveyors, appraisers, developers, real estate agents and construction departments of utility companies.

This course describes how the development and subdivision of land is controlled in B.C. and how regulated use of this basic resource impacts on our jobs, lives and the environment.

The approach is primarily technical, with emphasis being given to the means of control. Specific provincial statutes, including the Municipal Act and the Land Registry Act, and Municipal Regulations such as zoning and subdivision bylaws are reviewed. Land values, factors affecting their change, and the part that they play in providing a base for municipal revenue is considered. Practical aspects of land use control are illustrated by examples of specific subdivision and development schemes.

The number of students is limited to 30. Early registration is recommended.

51.916 — SURVEY COMPUTATIONS 2
Unit: 1.0

Deals with curves in engineering surveying and covers the following topics: rectangular and polar coordinates, transformation of coordinates, omitted parts in closed traverses, circular, reverse, and compound curves, special problems of circular curves.

Prerequisite: 51.934/935/936 Survey Computations 1A, 1B, 1C

51.917 — SURVEY COMPUTATIONS 3
Unit: 1.0

Covers vertical and transition curves in engineering surveying and computations for local control surveys. Other topics include concept of geometric space (simple and conformal plane), U.T.M. coordinates, triangulation and trilateration, reduction of field observations (eccentric measurements, mean-sea-level reduction), field consistence checks, intersection, resection (Snellius and D'Alamber solutions), inaccessible base, traversing in control survey, adjustments by semi-rigorous methods and least squares.

Prerequisite: 51.916 Survey Computations 2

51.918 — SURVEY COMPUTATIONS 4
Unit: 1.0

Covers numerical methods in surveying computations; Newton's method and the solution of non-linear equations; partitioning of land with curved boundaries; systems of heights; computations with differential leveling; orthometric correction; consistency checks and simple adjustments; trigonometric leveling; barometric leveling; three dimensional surveying systems; spacial traverses; deformation measurements and statistical assessments; computation of areas and volumes.

Prerequisite: 51.917 Survey Computations 3

51.919 — METHOD OF LEAST SQUARES
Unit: 1.0

An introduction to the appreciation of least squares in surveying. Topics include matrix algebra, theory of probability and statistics, errors of measurements, covariance matrix, parametric adjustment (leveling net, transformation of coordinates, control survey net), conditional observations (leveling net, traversing, control survey net), combined method (traversing nets).

Prerequisite: A course in linear algebra and BASIC language for micro computers is recommended.

51.921 — GEODESY
Unit: 1.0

An introduction to geodesy. Topics include geometrical and physical geodesy and the theory of satellite orbits; spherical and ellipsoidal computations, applications of Gaussian mid-latitude and Puissant formulae, reduction of field observations; gravitational forces, equipotential surfaces, reduction of gravimetric observations, Stoke's theorem, orthometric and dynamic heights; doppler satellite positioning and inertial positioning systems.

Prerequisite: A first course in calculus is recommended.

51.922 — MAP PROJECTIONS
Unit: 1.0

Theory of map projections and distortions, classification of projections, conic, cylindric, and azimuthal systems, Universal Transverse Mercator projection and all involved computations, stereographic projection for the maritime provinces, polyconic projection of British Columbia.

Prerequisite: 51.921 Geodesy.

51.923 — FIELD SURVEY 1A
Unit: 1.0

Module 1 of three 12 week modules in basic field surveying techniques and the operation of modern survey equipment. It is designed for persons who intend to make a career of surveying. It is recommended that 51.934/935/936 Survey Computations 1A, 1B, 1C be taken concurrently. Module 1 is the introduction to survey concepts as they relate to field work. The establishment of basic vertical control, introduction to the level and leveling procedures, level booking, application of leveling technique in an 'As-Built' survey project, analysis of errors encountered when leveling test and adjustment of levels.

51.924 — FIELD SURVEY 1B
Unit: 1.0

Module 2 of the three-part Field Survey course. The course introduces the Transit and measurement of angles, use of the transit in survey

projects, and basic linear measurements. Other topics include traversing using transit and tape, simple layout procedures, topographic survey by stadia method, analysis of errors associated with transit surveys, test and adjustment of the transit.

51.925 — FIELD SURVEY 1C
Unit: 1.0

Module 3 of the three-part Field Survey course. The course involves application of modern survey techniques and equipment to the solution of field problems, integrated traversing in the UTM coordinate system, layout of simple curves, layout and control of works projects including line, grade, and slope staking for roadwork projects and volume calculations, analysis of field techniques.

51.926 — FIELD SURVEY 2A
Unit: 1.0

Topics include highway surveying; layout of centre line, circular, spiral and vertical curves; topographic surveys by ground survey methods; preparation of topographic plans; mining surveys; use of gyro theodolite.

51.927 — FIELD SURVEY 2B
Unit: 1.0

Topics include horizontal control by triangulation, trilateration and traverse, direction measurement, use of precise instruments; vertical control — trigonometric leveling, precise differential leveling; electronic distance measurement; calibration of instruments.

51.928 — FIELD SURVEY 2C
Unit: 1.0

Topics include hydrographic surveying; horizontal and vertical shore control; tide measurements; sounding methods; preparation of charts.

51.931 — ENGINEERING SURVEYING 1
Unit: 1.0

The first of three 12 week modules (51.931, 51.932, 51.933) in surveying for students in Engineering Technologies other than surveying. Upon completion of all three modules students can use a variety of survey instruments and office procedures and can make plans, profiles and maps and determine precise sizes, shapes and locations.

The course is offered alternate Saturdays for 6 hours. The emphasis is on field work and in-class sessions during inclement weather. The modules are of progressive technological difficulty.

Topics include the basic use of levels open plate and optic transits, tape measurement methods for horizontal distance and direction determination, computations including slope reduction, open and closed traverse calculations, and plot plans.

Text: "Surveying" by Moffit & Bouchard, 7th ed.

Prerequisite: Grade 12 Math preferred.

51.932 — ENGINEERING SURVEYING 2
Unit: 1.0

The second module of Engineering Surveying. Techniques from 51.931 are further developed. Topics include benchmark leveling, steel tape and correction techniques and more advanced transit operations. Computations include traverse adjustments, contours and profiles.

Text: "Surveying" by Moffit & Bouchard, 7th ed.

Prerequisite: 51.931 Engineering Surveying 1.

51.933 — ENGINEERING SURVEYING 3
Unit: 1.0

Further development of survey techniques learned in 51.932. Topics include electronic distance measurements, stadia work (including tachometers), route surveys and earth work, site surveys and construction control and associated computations. Students will become involved in projects such as grades and slopestaking, preparation of topographic plans, cross section plotting, interpretation of legal plans.

Text: "Surveying" by Moffit & Bouchard, 7th ed.

Prerequisite: 51.932 Engineering Surveying 2.

51.934 — SURVEY COMPUTATIONS 1A
Unit: 1.0

This introductory course in three parts is of value to field personnel, instrumentmen, chainmen, rodmen, etc. presently employed within the surveying industry. It is also designed for persons who intend to make a career in surveying and are taking 51.923/924/925 Field Survey concurrently.

Topics include: basic trigonometric functions, algebra and geometry; operation of an electronic calculator; field measurement calculations of chained distances and leveling notes; solution of right and oblique triangles, bearings — magnetic, quadrantal and full circle; traverse calculations.

51.935 — SURVEY COMPUTATIONS 1B
Unit: 1.0

Topics include: coordinates — polar and rectangular, omitted measurements; adjustments of traverses; area by coordinates and DMDs; subdivision of areas.

Prerequisite: 51.934 Survey Computations 1A or equivalent.

51.936 — SURVEY COMPUTATIONS 1C
Unit: 1.0

Topics include: simple circular curves; areas of irregular areas, volumes of regular and irregular solids, stadia calculations; setting out and design calculations; basic UTM integrated traverse calculations.

Prerequisite: 51.935 Survey Computations 1B or equivalent.

51.952/953 — PHOTOGRAMMETRY 1A AND 1B
Unit: 1.0 - 51.952
1.0 - 51.953

This course introduces students to the mechanics of photogrammetry through a combination of theory and practical work.

Topics include: introduction to photogrammetry; photo interpretation; mapping from photographs; cameras; flight-planning for vertical photography; mosaics, principle of stereovision; determination of height from aerial photos; radial line-plotting; oblique photogrammetry, plotting instruments, stereoscopes, photographic laboratory procedures.

51.953 See 51.952

51.954 — PHOTOGRAMMETRY 1C
Unit: 1.0

Topics include analytical photogrammetry; tilted photogrammetry; determination of ground coordinates from measurements on photos; supplementing ground survey control; card punching for computer; running a program for coordinates; adjusting and trouble-shooting program elements; introduction to aerial triangulation.

51.955/956/957 PHOTOGRAMMETRY 2A, 2B, 2C
Unit: 3.0*

These three courses present the necessary theory and practical skills required to produce topographical mapping from aerial photography. The course is intended for those who seek employment in the mapping industry or for those who desire a fundamental understanding of the mapping process using photogrammetric methods.

Part I — geometric projections, perspective projection; inner, relative and absolute orientation, stereovision.

Part II — model deformations, theory and uses of stereo restitution instruments, coordinate transformations.

Part III — aerial triangulation, affine restitution, special products.

Note: Due to limited lab facilities, enrolment is limited to eight students.

Lectures — alternate Thursdays — 3 hours
Labs — alternate Saturdays — 6 hours

*Note: No credit will be awarded until satisfactory completion of above three courses for a total of 3.0 units.

53.901 — STRUCTURAL MATERIAL
Unit: 1.0

This is the first part of the structural section in the Landscape Technology program.

It is an introductory course in structural material study for students with little or no experience in landscape technology. Structural materials include rock, brick, wood, asphalt, concrete, glass and plastic.

On successful completion the student has a foundation knowledge of the origin, qualities and use of the materials used in landscape design and management, and is able to specify appropriate materials for particular jobs.

Lectures illustrate a cross-section of these materials and lead to specification exercises. Topics include selection and location of materials in the landscape.

53.902 — SOIL IMPROVEMENT
Unit: 1.5

This course forms the first part of the horticulture section within the Landscape Technology program.

It is a course in soil technology for those concerned with landscape development. It will allow a person with little or no knowledge of soil to understand soils and improvement of soils for healthy, vigorous plant growth, and to gain a basic knowledge of water and forest influence on soils in horticulture.

On successful completion a student has a basic knowledge of soil chemistry, biology and soil mechanics; the means and methods of soil improvement for plant development; drainage and irrigation; soil compaction, permeability, soil pressure and their effects in horticulture.

Topics include subsoils, topsoils; organic and inorganic soil improvement mediums; erosion control; surface and subsurface drainage; irrigation; earth pressure of concern for retaining-walls and foundation structures in landscape projects.

53.903 — GRADING AND DRAINAGE PLAN PRODUCTION
Unit: 1.0

This is a course in grading and drainage plan production for persons with some previous training in technical drafting and knowledge of soil technology in landscaping.

On successful completion of the course a student is capable of producing detailed plans showing grading of areas for landscape projects, and is familiar with government regulations covering grading and drainage of land.

Lectures and discussions lead to practical drafting exercises in detailed plan production. Before the last four nights of the course, the students are given a home assignment to be presented on the last night of the course:

Prerequisite: 49.905 Drafting — Structural.

53.904 — LANDSCAPE STRUCTURALS
Unit: 1.0

This course in the detailing of landscape structural techniques will introduce persons with a basic knowledge of landscape materials and fundamental drafting techniques to the production of detailed plans for use in the landscape industry. Selection and use of structural materials in landscape projects are based on different criteria from those used in the building industry.

On successful completion a student has improved skill in preparing landscape design drawings and is able to produce detail plans for structural items commonly used in landscape projects.

Course content includes lectures, field trips and drafting practice covering the following topics: access — driveways, walks, stairs, patios, plazas; retention — walls, cribbing, piling, bulkheads, fencing; water — ponds, streams, waterfalls, fountains; miscellaneous — pergolas, seats, fireplaces, landscape lighting, and irrigation; presentation drawings — preparation, method of presentation, sketches; site work.

Prerequisite: 49.905 Drafting — Structural and 53.901 Structural Material.

53.905 — PARKS AND RECREATION
Unit: 1.5

This is an introductory course in the design of parks and recreational facilities and/or their maintenance.

On successful completion a student has a knowledge of the basic facilities required for public parks and recreation areas; of the layout of areas required for indoor or outdoor sports and other recreation facilities; of how and where to obtain information on applicable regulations, and of maintenance requirements for recreation facilities.

Course content includes lectures and discussions on the provision of recreational facilities: planning principles, space requirements for sports, art education, etc.; facilities, swimming pools, ice arenas, lawn bowling, curling, golf, marinas, resorts, beaches, children's playgrounds; general features, fences, walls, lights, parking, and general maintenance. Students design and make drawings for a major community park.

53.906 — BASIC HORTICULTURE
Unit: 1.5

Second part of the horticulture section of the Landscape Technology program. This introductory course in horticulture and plant protection for landscape use will provide individuals, with little previous knowledge of horticulture, with a working knowledge of plants and their value in landscape developments.

On successful completion the student has a basic knowledge of botany; plant classification and identification; plant propagation; plant food requirements; hardiness; the handling and protection of plants from nursery to future site.

Lectures and discussions introduce ways of preparing plants for herbariums, and students are required to start an herbarium for use in subsequent courses 53.911 and 53.907.

Prerequisite: 53.902 Soil Improvement.

53.907 — PLANT MATERIAL STUDY
Unit: 1.0

This course forms the fourth part of the horticulture section of the Landscape Technology program.

Students with a limited knowledge of plants will learn about plant materials with specific reference to their suitability for use in particular types of landscape projects. On successful completion students know the types and varieties of indigenous and exotic trees, shrubs and ground covers, and the characteristics and values which aid in the selection of these materials for use in landscape.

The student learns about trees, shrubs, herbaceous and evergreen ground covers and vines from lectures, discussion and field trips.

The course includes descriptions and characteristics, varieties, landscape use and value, cultural conditions, seven to ten year growth patterns, hardiness zones, availability and available sizes. Each student is expected to research specific varieties and species and include these, along with the course material, in a handbook usable for future reference.

Prerequisite: 53.911 Plant Introduction.

53.908 — MANAGEMENT
Unit: 1.0

This course in management for landscape technicians provides a background of management skills required in the area of landscape development, including the legal requirements affecting land use, contract documentation, ethics and professional liability.

On successful completion the student has a basic knowledge of professional responsibilities in respect to the consultant's relationship to client and contractor; the contractor/client relationship; the production of contract documents; legal liability; contract supervision.

Lectures and discussions provide an insight into the practical relationship between the client, contractor and consultant, which must exist to produce acceptable development.

53.909 — COST ESTIMATION
Unit: 1.5

An introduction for persons with limited or no experience in cost estimation for landscape projects to methods of area and volume survey; study of work capacity; administration and maintenance costs; methods of journal keeping and accounting.

On successful completion the student can do area and volume surveys from landscape plans, and establish quantity and capacity as bases for cost estimation.

Topics include mathematics, surface, area, volume; weights and measures; cuts and fills; work capacity, man-hours, equipment; overhead expenses; journals; bookkeeping and an introduction to the metric system.

53.910 — PLANTING PLAN
Unit: 1.5

This course forms the fifth part of the horticulture section within the Landscape Technology program.

This course in planting plan production drafting will allow persons with some knowledge of horticulture, soil and plants, and with some experience in technical drafting, further study of plant material for use in landscape projects and detailed planting area layouts.

On successful completion a student knows about climate and soil tolerances and plant behavior in B.C.'s major populated areas, and can produce detailed planting plans for a given land development master plan in B.C.

Lectures, discussions, and practice sessions present topics which include climate and soil condition; solitary, group and mass planting; plant size and quality; plant spacing; specification of material and planting procedure.

Prerequisite: 53.903 Grading and Drainage and 53.904 Landscape Structurals.

53.911 — PLANT INTRODUCTION
Unit: 1.0

This is the third part of the horticulture section of the Landscape Technology program.

This introduction to plant material for landscape uses consists mainly of field trips to introduce students with limited knowledge of trees, shrubs and herbaceous plants, to plant material used for landscape development.

On successful completion the student knows about suitability, size, form, color and growing habits of trees, shrubs, vines and climbers, perennials, annuals and other herbaceous plants in this climatic zone.

Two lectures, two field trips to nurseries and eight field trips to other locations introduces native trees, street trees, older park shrubs, herbaceous plants and turf to students. Students are expected to collect leaves, twigs, etc. for the preparation of an herbarium for subsequent course 53.907 Plant Material Study.

Prerequisite: 53.906 Basic Horticulture.

54.901 — SWIMMING POOL OPERATION, MAINTENANCE AND WATER CHEMISTRY
Unit: 1.0

Many of the hundreds of swimming pools in use today — public, apartment and backyard — are not properly maintained. Improper water condition and increased expense can result from neglect or misuse of the pool and its accessories.

This course covers the efficient operation of the physical plant to produce clear, comfortable water and to maintain the equipment in safe and sanitary condition.

On successful completion those who wish may take the National (U.S.) Swimming Pool Institute Certification examination.

Topics include circulation, filtration, chemical treatment and testing, equipment operation and maintenance.

Text: "Swimming Pool Operators Handbook", D.G. Thomas, National Swimming Pool Foundation.

54.910 — RECREATION FACILITIES MANAGEMENT 1 — ADMINISTRATION
Unit: 1.0

Areas of study include trends in recreation and leisure services management; theory and application of recreation and leisure services management; MBO philosophy; motivation; design of organizations; interpersonal managerial skills; marketing of leisure/recreation services; budgeting; policy making; personnel management for recreation managers.

54.911 — RECREATION FACILITIES MANAGEMENT 2 — MAINTENANCE
Unit: 1.0

Includes personnel management, legal liability, labor and management, professional interaction under unionization, principals of organization and staffing for efficient maintenance, and vandalizing management.

54.912 — RECREATION FACILITIES MANAGEMENT 3 — PROGRAM
Unit: 1.0

Includes marketing and promotion of programs including fees and charges; community structure and development as it relates to determining program needs; leisure counselling and programming, and marketing perspective; program development, leadership development and programming for the public; private agency and commercial facilities.

Prerequisite: 54.910 Recreational Facilities Management 1 or 54.911 Recreational Facilities Management 2.

70.X01 — ADVANCED HAEMATOLOGY
Unit: 1.0

This correspondence course prepares registered technologists for the Advanced Registered Technologists' examination. Credits (15.8) are granted for this course by the Canadian Society of Laboratory Technologists (CSLT).

This course acquaints the student with some of the new and advanced theories of haematology. It examines haem synthesis, globin synthesis, thalessemia, normal red-cell production and destruction, B12 and folic-acid synthesis, megaloblastic anaemias, glucose metabolism of the red cell, haemolytic anaemias, and red cell over-production and under-production.

70.901 — MEDICAL LABORATORY REFRESHER PROGRAM

Designed for inactive Registered Technologists. Theory and clinical practice in haematology, immunohaematology and clinical chemistry.

70.902 — NORMAL HISTOLOGY AND MICROANATOMY FOR MEDICAL TECHNOLOGISTS

Introduces Registered Technologists (R.T.'s) to normal histology and microanatomy of the human body with examination of all morphology and embryology of primary tissues, and histology and microanatomy of various systems. Available as a correspondence course in late 1983.

72.901 — TUTORIAL FOR CAMRT REGISTRATION EXAMINATIONS (Radiography)

This 12 hour refresher course prepares students for the Canadian Association of Medical Radiation Technologists (CAMRT) registration examination. It is a concise review of radiological physics, radiographic techniques, anatomy and physiology, and radiobiology and protection.

72.911 — COMPUTED TOMOGRAPHY
Unit: 1.0 BCIT credit
1.0 AC credit

This introductory course provides a broad theoretical framework for understanding the principles of computed tomography (CT), and establishes the foundations for practical aspects of CT scanning. It introduces a new vocabulary necessary for the understanding of CT literature.

72.912 — RADIATION BIOLOGY FOR MEDICAL RADIATION TECHNOLOGISTS
Unit: 1.0 BCIT credit
1.0 AC credit

Designed for the technologist who wishes to have a greater understanding of the effects of radiation on the cells.

This course commences with a review of cellular biology and the basic interactions of radiation with matter, and continues with an examination of the specific types of intracellular responses to radiation and the factors which influence these responses. The course concludes with radiation pathology and human experience with radiation injury.

72.914 — BASIC TEACHING SKILLS FOR THE RADIOLOGICAL TECHNOLOGIST

Aids technologists in becoming more effective in teaching situations by developing skills in film critique, evaluation, communication, and motivation.

73.901 — PHYSICS OF DIAGNOSTIC ULTRASOUND

This course examines the physics of acoustic waves, transducers, ultrasonic field, ultrasonic imaging, basic pulse echo instrumentation, real time systems, cathode ray tubes, doppler effect, acoustic power, testing and calibration and biological effects.

74.901 — RADIOPHARMACEUTICALS IN NUCLEAR MEDICINE
Unit: 1.0 BCIT credit
1.0 AC credit

This course reviews chromatography methods and colloidal and chelation chemistry. It examines the radiopharmaceuticals used for various nuclear medicine procedures and the required quality control procedures.

76.901 — REFRESHER COURSE FOR GRADUATE NURSES**
Unit: 5.0

For general nurses who require updating to qualify for B.C. registration or employment. The major focus is on medical and surgical nursing of the adult with theory and practice included to assist the nurse in meeting clinical competency objectives. The course is approved by the RNABC.

76.902 — BASIC MENTAL HEALTH NURSING**
Unit: 5.0

Primarily for graduate nurses trained outside of Canada to prepare them for the BC Registered Nurse examinations. Theory and clinical practice are included. The course is approved by the RNABC.

76.903 — OBSTETRICAL NURSING

For graduate nurses who require theory and clinical practice to qualify for the BC Registered Nurse examinations.

76.906/907 — OPERATING ROOM NURSING — LEVEL 1
Unit: 5.0

A two-part course to prepare the Registered Nurse for staff nurse duties in hospital operating rooms. Part 1 is a combination of independent study plus a full-time skills laboratory while part 2 is a full-time day program. This course is of value as a refresher for former operating room nurses but is primarily for developing the beginning level skills of graduates of two-year diploma programs. The course is approved by RNABC.

76.907/906 — OPERATING ROOM NURSING — LEVEL 1**

See 76.906

76.909 — ENTEROSTOMAL THERAPY: THE ROLE OF THE NURSE*

This two-day course acquaints the nurse with the knowledge and skills required for the care of patients with stomas and non-stomal skin problems.

76.911 — GERONTOLOGY CONCEPTS

Topics covered relating to long term care include personal care, activation, medical problems, and implications of drug therapy.

76.913 — INTRAVENOUS THERAPY*

A two day workshop designed especially for RNs working in an area where they could be required to start IVs.

76.918 — NURSING MANAGEMENT OF BEHAVIOR PATTERNS*

A two day workshop for RNs and RPNs who wish to become familiar with selected behavior patterns and related nursing interventions.

76.919 — OBSTETRICAL NURSING UPDATE

Information on current theories and practice in selected obstetrical topics for hospital and public health nurses. Includes neonatal assessment and infant attachment.

76.930 — DIABETES UPDATE

Workshop on recent advances and current practice in the management of the diabetic patient. Of interest to health care personnel, patients and families.

76.931 — CANCER UPDATE

Workshop on current research finding and nursing management of the patient with cancer.

76.933 — NURSING MANAGEMENT OF RESPIRATORY PROBLEMS

One day workshop discusses manifestation of acute and chronic respiratory failure and approaches used in treatment, including rehabilitation.

77.901 — REFRESHER COURSE FOR PSYCHIATRIC NURSES**

Designed for inactive RPNs. Topics include acute psychiatry, psychogeriatrics, and mental retardation. The course is full-time study including integrated theory, laboratory and clinical practice.

78.901 — BASIC ELECTRONICS IN MEDICINE AND BIOLOGY
Unit: 1.0

An introduction to medical and biological electronic instrumentation. Intended for physicians, nurses and other medical personnel working with electronic equipment.

78.902 — INTERMEDIATE ELECTRONICS IN MEDICINE AND BIOLOGY
Unit: 1.0

A continuation of 78.901, this course examines ECG Monitors, defibrillators, ultrasound equipment, cardiac output, computers, pacemakers and use of computers in medicine.

78.903 — ELECTRONICS FOR ECG AND EEG MONITORING
Unit: 1.0

Provides theoretical and practical study of electronics of ECG, EEG and related monitoring.

78.904 — ADVANCED ELECTRONIC DEVICES (MODULE 1)
Unit: 1.0

Builds on a basic knowledge of analog and digital electronics. Topics include low level biomedical preamplifier circuits, isolated amplifiers, universal timer devices, basic digital circuit theory review, interfacing discrete components, frequency sources, etc.

78.905 — INTRODUCTION TO MICROPROCESSORS FOR MEDICAL APPLICATIONS (MODULE 2)
Unit: 1.0

This lecture/laboratory course is designed for the graduate technologist with a solid knowledge of SSI, MSI and LSI digital and analog circuit applications. Topics to be examined include review of Data Bus and Memory System fundamentals, Intel 8080/8085 microprocessor systems hardware and machine language instruction set, program development tools, high level compiler languages, etc.

78.906 — MICROPROCESSOR BASED MEDICAL AND CLINICAL EQUIPMENT (MODULE 3)
Unit: 1.0

This lecture/laboratory course is designed for the graduate technologist with a solid knowledge of microprocessor fundamentals and applications. Topics include an overview of popular microprocessors e.g. Intel 8048, 8086, and 8088, Motorola 6800, etc., video display of characters and graphical information, microprocessor-based medical and clinical equipment, design and construction of simple microprocessor-based medical devices, single board computers, digital communications, etc.

80.901 — HEALTH RECORDS ADMINISTRATION 1**
Unit: 1.0

Develops knowledge and skills required for health records administration. Topics include communications, contemporary issues, legal aspects related to health records.

Prerequisite: Graduation from HDT or equivalent.

80.902 — HEALTH RECORDS ADMINISTRATION 2**
Unit: 1.0

Focuses on the organization and management of health records departments and the role of the health records administrator in the quality assurance process. Topics include leadership, budgeting, and labor relations.

Prerequisite: Health Record Administration 1.

82.901 — BASIC SOUND MEASUREMENT
Unit: 0.5

An examination of the principles of noise reduction and control of sound-producing equipment. Prepares those working in the fields of environmental or public health to operate equipment used in enforcing municipal noise bylaws.

82.902 — BASIC PEST CONTROL WITHIN BUILDINGS
Unit: 1.0

Identification of household pests and demonstration of safe application of pesticides using equipment currently used in the structural pest control industry. Of interest to members and employees of the B.C. Structural Pest Control Association, and public health inspectors.

86.907 — DESIGNING FITNESS PROGRAMS FOR MATURE ADULTS

Examines the unique needs of mature adults in fitness programs by identifying common blocks to exercise and demonstrating movement systems for active to institutionalized older adults.

87.500 — OVERVIEW OF HEALTH CARE SUPERVISORY SKILLS
Unit: 1.0

This course for new supervisors or aspirants to supervisory positions reviews leadership responsibilities in health care agencies and prepares students for more in-depth training in health care management.

87.510 — HEALTH CARE ORGANIZATIONAL BEHAVIOR
Unit: 1.0

Examines components influencing individual behavior in organizational settings including attitudes, values, personality, perception and motivation. Introduces theories of communication and leadership.

87.511 — HEALTH CARE PRINCIPLES OF MANAGEMENT
Unit: 1.0

Reviews the roles and functions of management and introduces problem solving and decision making. Identifies and fosters skills required for planning, organization, and control in health care agencies.

87.512 — OPERATIONS MANAGEMENT IN HEALTH CARE
Unit: 0.5

Identifies practical skills necessary for systems analysis, method study and productivity improvement. Includes analysis of work flow, work sampling and some space planning.

87.513 — BUDGETING IN HEALTH CARE
Unit: 0.5

Introduces the principles of budgeting and the role of budgeting as part of the financial and health care objectives of the organization. Priority setting in several areas of budgeting will be reviewed.

87.514 — HEALTH CARE SYSTEMS
Unit: 0.5

Examines issues related to the development of health care systems in Canada including the roles of various levels of government, the division of health care labor, manpower planning, health care finance, health regulation and the impact of new health technology.

87.515 — HUMAN RESOURCE MANAGEMENT
Unit: 1.0

Concentrates on the total staffing process including job analysis and description, interviewing, training, leadership skills, and performance appraisal.

87.516 — HEALTH LABOR RELATIONS
Unit: 0.5

Describes the development of labor relations in health care. Emphasizes the interpretation and application of negotiated contracts. Reviews grievance and arbitration.

87.904 — ASSERTION WITH CERTAINTY FOR HEALTH CARE SUPERVISORS AND MANAGERS

Designed to meet current changes in the roles of health care managers and supervisors. It examines traditional roles and attitudes of health care workers, the need for change, making change within the organization, personal confidence building, the meaning and concept of assertion, and assertive behavior.

87.909 — SELECTION INTERVIEWING FOR HEALTH CARE SUPERVISORS
Unit: 0.5

Developes skills necessary for the recruitment and selection of health care personnel and examines job orientation of new personnel.

87.911 — HEALTH LABOR RELATIONS*
Unit: 0.5

Designed to familiarize the health care manager/supervisor with labor relations. It focuses on the B.C. labor bodies, contract administration, and handling and minimizing of grievances. This course is useful to all health personnel involved with collective agreements.

87.912 — HEALTH LABOR RELATIONS FOR HEALTH TECHNOLOGISTS*
Unit: 0.5

Designed for health personnel employed in the departments of radiology, nuclear medicine, ultra sound, medical laboratory, pharmacy, physiotherapy, and occupational therapy; and useful to members of management and the union. Topics include labor legislation, contract administration, and procedures for handling and minimizing grievances.

87.913 — HEALTH LABOR RELATIONS FOR NURSES*
Unit: 0.5

Designed to familiarize nursing managers and heads of nursing departments with the labor relations system in B.C. by providing the background and structure of the B.C. labor bodies, legislation, contract administration, handling grievances and arbitration. This course is useful to all nurses and instruction techniques include lectures, case studies, and role playing.

87.914 — PERFORMANCE APPRAISAL FOR HEALTH CARE SUPERVISORS
Unit: 0.5

Designed to provide both newly appointed and experienced supervisors with skills necessary for objective performance appraisal including methods, standards, implementation, and follow-up of appraisals.

87.915 — POWER IN HEALTH CARE ORGANIZATIONS: A GUIDE TO SMOOTH SAILING IN CHOPPY WATERS

Explores the nature and bases or organizational power, self-confidence, personal power, power plays in health care organizations, and strategies for enhancing power effectively and ethically.

87.918 — MANAGEMENT INFORMATION SYSTEMS FOR LONG TERM CARE ADMINISTRATORS

Outlines effective use of information support systems for Long Term Care Administrators.

87.919 — LAYOFF AND DISMISSAL IN HEALTH CARE ORGANIZATIONS

Practical introduction to understanding the ramifications of layoff and summary dismissal. Focuses on concerns about dismissal and its legal implications.

87.920 — EMPLOYMENT INTERVIEWING FOR HEALTH CARE MANAGERS

Presents a variety of proven techniques to reduce costly hiring mistakes. Focuses on acquisition of skills to improve interviewer confidence.

87.921 — QUALITY CIRCLES: A CHANGE OF PERSPECTIVE FOR HEALTH CARE MANAGERS

Introduces Quality Circles, an innovative and pragmatic managerial style which emphasizes quality and productivity.

87.922 — ADMINISTRATIVE COST CONTROL FOR LONG TERM CARE ADMINISTRATORS

Through a direct approach Long Term Care Administrators learn how to maximize their administrative resources in a cost effective manner.

87.923 — FOOD COST CONTROL

Examines purchasing, receiving, storing, issuing and preparing food to achieve effective cost control.

88.501 — ACCIDENT PREVENTION 1
Unit: 1.0

Examines the history of the safety movement, causes of accidents, real cost of accidents, accident investigation inspections, and job safety analysis.

Prerequisite: Math 12, Chemistry 11, Physics 11.

88.504 — INDUSTRIAL HEALTH AND SAFETY 1
Unit: 1.0

Examines legislation and enforcement agencies relevant to safety.

88.506 — INDUSTRIAL HYGIENE 1
Unit: 1.0

Examines health concerns related to the use of chemicals in the work place and reviews the permissible levels of toxicity, and hazard assessment.

88.511 — ACCIDENT PREVENTION 2
Unit: 1.0

This course examines the problems of maintaining interest in safety, solutions to special problems, problem employees, off-the-job safety, and personal protective equipment.

Prerequisite: 88.501 Accident Prevention 1.

88.512 — FIRE PROTECTION 1
Unit: 1.0

This course examines heating and electrical hazards, the chemistry of fire, flammable liquids, fire detection, portable fire extinguishers and sprinkler systems.

88.604 — INDUSTRIAL HEALTH AND SAFETY 2
Unit: 1.0

Topics include safety policies, audits, insurance, planning for emergencies, and computers in safety.

Prerequisite: 88.504 Industrial Health and Safety 1 or permission of instructor.

88.605 — INDUSTRIAL HEALTH AND SAFETY 3
Unit: 1.0

Examines concept of total loss control, risk management, accident prevention, and safety committees.

Prerequisite: Industrial Health and Safety 2 or permission of instructor.

88.606 — INDUSTRIAL HYGIENE 2
Unit: 1.0

Topics include acoustics and noise control, and use of sound level meters and noise dosimeters.

88.607 — INDUSTRIAL HYGIENE 3
Unit: 1.0

Examines ionizing and non-ionizing radiation, and exposure to extreme temperatures and pressures.

88.610 — ACCIDENT PREVENTION 3
Unit: 1.0

Topics include safety design, building and structures, material handling, problems with hazardous materials and hoisting apparatus.

88.611 — ACCIDENT PREVENTION 4
Unit: 1.0

Examines safety rules for woodworking and metal working equipment, foundry hazards, welding and butting hazards, and boilers and unfired pressure vessels.

Prerequisite: 88.610 Accident Prevention 3

88.612 — FIRE PROTECTION 2

Topics include fire causes and statistics, flammable gases, storage, combustible gases, chemical hazards, fumigants, plastics, fire alarms.

88.902 — BASIC ANATOMY AND PHYSIOLOGY FOR OCCUPATIONAL HEALTH
Unit: 1.0

Develops basic knowledge of human anatomy and physiology with reference made to effects of certain environmental factors on the major organs.

88.903 — CONTROLLING LOSS THROUGH INTERPERSONAL SKILLS

This one-day workshop for people concerned with Occupational Health and Safety, examines image building and the use of techniques to improve the stature of safety within the organization.

97.901 — VIDEO PRODUCTION FOR EDUCATIONAL PROGRAMMING
Unit: 1.0

Participants will be able to initiate their own simple video productions following this introduction to the process of video production from conceptualization to scripting, storyboarding and actual production, including on-camera, behind camera and edit decision. Of special interest to those with responsibility for the education of others.

97.905 — INFECTION CONTROL
Unit: 1.0

Topics include clinical microbiology review, common infections, use of antibiotics and laboratory control practices.

97.906 — INTRODUCTION TO HUMAN SEXUALITY IN HEALTH CARE

A one day workshop designed for nurses and other health professionals to explain the integration of concepts of sexuality in health care practice.

97.914 — ANATOMY AND PHYSIOLOGY: REVIEW AND UPDATE*
Unit: 1.0

Designed for health professionals with some knowledge of anatomy and physiology who wish to update this knowledge.

97.915 — BASIC PRINCIPLES OF THE DISEASE PROCESS*
Unit: 1.0

For health professionals already familiar with normal physiology this course emphasizes those principles of pathophysiology which are common to a class of diseases.

98.909 — BIOLOGY

An introductory biology course which meets the Biology 11 program entrance requirements for BCIT.

Enrolment is limited to 20.

98.910 — BIOLOGY

Designed to meet BCIT entrance requirements for students who do not have Biology 12 or its equivalent.

Enrolment is limited to 20.

Prerequisite: Biology 11 or equivalent.

*This course will travel: These courses can be offered in any community in B.C. Fees will vary depending on the local arrangements and the location. For further information contact Health Continuing Education, Burnaby Campus.

**These courses require approval by the department before registration: Application forms are available by contacting Health Continuing Education, BCIT, Burnaby Campus.

General Information

BCIT LOCATIONS

BURNABY, MAIN CAMPUS
3700 Willingdon Avenue,
Burnaby, British Columbia
V5G 3H2
434-5734 (day 0830-1700) 434-5741 (evening after 1700)

From Mid-August to June, **office hours** are:
0830-2030 Monday - Thursday
0830-1630 Friday
0830-1230 Saturday (except on holiday weekends)

Consult our advertising supplements for details of special evening opening hours.

DOWNTOWN EDUCATION CENTRE
549 Howe Street,
Vancouver, British Columbia
V3C 2C6
687-4666

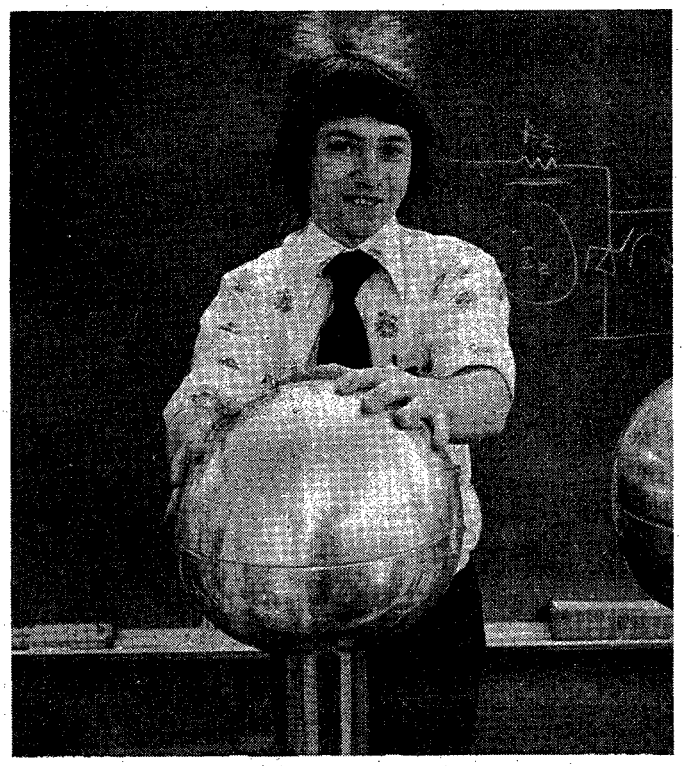
When school is in session **office hours** are:
0830-2000 Monday - Thursday
0830-1630 Friday
Otherwise 0830-1630 Monday - Friday

SURREY/LANGLEY/RICHMOND
Princess Margaret Senior Secondary School
12870 - 72nd Avenue, Surrey

Langley Secondary School,
21405 - 56th Avenue, Langley

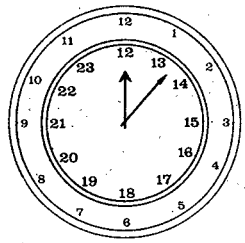
Burnett Secondary School
5011 Granville Avenue, Richmond

Note: While Burnaby, Main Campus and Downtown Education Centre offer full year-round service, the Surrey/Langley/Richmond locations are registration and class sites only. Please see the Class Schedule, available on request, for registration and course details for these three locations.



BCIT USES THE 24-HOUR CLOCK

0001 - 12:01 AM
0100 - 1:00
0200 - 2:00
0300 - 3:00
0400 - 4:00
0500 - 5:00
0600 - 6:00
0700 - 7:00
0800 - 8:00
0900 - 9:00
1000 - 10:00
1100 - 11:00
1200 - 12:00 noon



1300 - 1:00 PM
1400 - 2:00
1500 - 3:00
1600 - 4:00
1700 - 5:00
1800 - 6:00
1900 - 7:00
2000 - 8:00
2100 - 9:00
2200 - 10:00
2300 - 11:00
2400 - 12:00 midnight

COURSE FORMATS

The Division of Continuing Education and Industry Services offers credit and non-credit courses and seminars in a variety of time frames and formats throughtout the year. These courses are offered at the Burnaby Campus, Downtown Education Centre, and other locations.

The most common course formats, with their Units of Credit are:

Total Hours	Course Format	Units of Credit (if granted)
18	6 weeks, 1 night/week Weekend, 2½ days	0.5
36	6 weeks, 2 nights or one day/week 12 weeks, 1 night/week 14 weeks Downtown, 1 night/week 7 weeks Downtown, 2 nights/week 1 week (5 days)	1.0
54	18 weeks, 1 night/week 10½ weeks Downtown, 2 nights/week	1.5
72	12 weeks, 2 nights/week 24 weeks, 1 night/week	2.0
90	30 weeks	2.5

See Academic Information for further details on Course Formats.

Some courses travel — that is they are available upon request at centres throughout B.C. Call 434-5734, ask to speak to the appropriate department head of Business, Engineering, or Health or call the Downtown Education Centre at 687-4666, for information on courses and seminars of interest to you.

WEEKEND COMMUNICATION WORKSHOPS

These courses are run as workshops. Instructional segments are followed by workshop periods, during which participants can practice new skills under the supervision of the instructor. All workshops have limited enrolment so that the instructor can help the participants individually. Participants are urged to bring material from work to these workshop sessions. Some courses are offered on weekends, some on weekdays at the Downtown Education Centre.

Note: Students enrolling in English courses who have basic English language difficulties may be referred to other, more appropriate courses.

PART-TIME DAY

Students may register in courses given in the day Diploma program subject to the approval of the technology head and space being available.

A student making application for part-time day classes must obtain the signature of the technology head and the instructor of each course, using the form "Request for Part-Time Study" available from the registration office. Fees must be paid upon presentation of the completed form to the registration office.

KNOWLEDGE NETWORK

BCIT produces a number of credit-free, general information courses for Knowledge Network. Consult local programming for details on these fine programs. For further alternative course formats see Distance Education as follows.

DIRECTED STUDY CENTRE (Distance Education)

The Centre offers career-oriented credit and credit-free correspondence courses. Registrations are accepted at any time. Assignments can be completed at a rate adapted to the schedules of working adults. A detailed course calendar outlining Centre offerings is available by contacting the Directed Study Centre, BCIT, Burnaby.

Courses available from the Directed Study Centre

Business

Accounting 1; Accounting 2; Principles of Administration; Principles of Economics; Food and Beverage Cost Control; Hospitality Accounting; Front Office Procedures; Introduction to Tourism; Copywriting — Radio and Television; Rooms Management.

Engineering

Botany; Dendrology; Ecology; Silviculture; Fire Management; Forest Measurements; Forest Soils; Forest Surveying; Wood Technology; Forest Hydrology; Mathematics for Foresters; Meteorolgy; Range Management; Bridge Maintenance 1 & 2; Communications 1; Drainage 1; Geology & Soils 1; Survey 1 & 2; Technical Mathematics 1 & 2; Maintenance Management; Landscape Maintenance; Connections — Technology & Change; B.C. Building Code — Housing; Dairy Processing; Pre-entry Mathematics; Algebra 1; Algebra 2; Calculus 1, 2, & 3; Logarithms; Analytic Geometry; Trigonometry; Physics 1 & 2.

Health

Advanced Haematology (for Registered Technologists — ART).

Course Equivalencies

Correspondence courses available from the Directed Study Centre that are equivalent to Continuing Education classroom courses are listed below. These courses carry credit toward BCIT part-time study certificates.

CONTINUING EDUCATION	DISTANCE EDUCATION
Management 1 & 2	Principles of Administration
Economics 1 & 2	Principles of Economics
Accounting 1 & 2	Accounting 1 & 2
Front Office Procedures	Rooms Management
Food and Beverage Cost Control	Food and Beverage Cost Control
Introduction to Tourism	Introduction to Tourism
Algebra 2	Algebra 2
Logarithms & Analytic Geometry	Logarithms and Analytic Geometry
Calculus 1, 2 & 3	Calculus 1, 2 & 3
Trigonometry	Trigonometry
Pre-entry Mathematics	Pre-entry Mathematics
Physics 1 & 2	Phusics 1 & 2

Program Development

Distance Education designs, develops, and delivers courses and programs for schools, industry, business, and government. These courses may be delivered by BCIT or the client in the classrooms or by correspondence to employees who are not able to attend scheduled classes.

TELECONFERENCING

Distance Education provides instruction to groups of off-campus students by telephone teleconferencing. Most teleconferencing classes are arranged by instructors of professional continuing education courses. Spare time on the teleconferencing system is available to outside groups for educational and administrative meetings.

For further information on Distance Education services, contact Distance Education, BCIT, 3700 Willingdon Avenue, Burnaby, B.C. V5G 3H2 or telephone 434-5734 local 406/408 (648 for course information).

INDUSTRY SERVICES

BCIT Industry Services is a unique, national employee training resource for industry — including government agencies, private and public corporations, professional and volunteer organizations, and individuals.

It provides a variety of courses and programs throughout Canada in flexible formats, with emphasis on joint participation between the industry and BCIT in determining training needs and establishing a curriculum to meet those needs. Industry Services is a non-profit enterprise but does operate on a cost-recovery basis. A training consultant is available to discuss training needs and costs. Industry Services is flexible in the development and location of individual and group training programs. Services are provided on the BCIT campus, on business or industry premises, or wherever convenient.

For an in-depth meeting to determine your training needs and how BCIT can help, contact Industry Services at (604) 434-5734, local 737/802 or 434-5730 (night line).

TRAINING AND DEVELOPMENT CENTRE

The Training and Development Centre presents a series of non-credit seminars, conferences, and workshops in business and management, computer systems, engineering and technology. These seminars are designed specifically for the general business and professional community, industry, education and government organizations. Selected speakers are leaders in their fields who present their subjects in a practical and pragmatic fashion.

To receive current information on seminars and conferences, contact the Training and Development Centre at (604) 434-5734, local 736/445 or BCIT Information at local 204/205.

HOMEBOUND PROGRAM

Many Continuing Education courses and programs are available to students who are home or institution-bound for medical reasons. Speaker telephones are used to connect the students with a regular classroom to allow the students to listen to the class presentation, ask questions, and be part of the give-and-take of class discussion. The Homebound students are full members of the class. Course materials are sent to the students' residence by courier as required from Business Continuing Education. Special courses may be arranged if requested.

For further information contact 434-5734, local 405/407.

Campus Services and Facilities

PARKING

Parking locations at the Burnaby Campus are indicated on the pull-out map within this calendar. All vehicles parked on-campus day or night are required to display a valid Institute parking permit affixed to the lower inside left corner of the windshield.

Fees are currently assessed at $5 per term and permits are sold during the first three weeks of each term from 1630-2030, Monday to Thursday in Building 1A, Admissions area, North Lobby and South Lobby.

Permits are also available at the Parking Office, Portable Building 2Q, 0800 - 1900 Monday to Thursday, 0800 - 1600 Friday, and 0830 - 1230 on Saturday.

Part-time parking permits are valid 1730-2300 Monday through Friday, Saturday and Sunday 0700-2300. Permit holders may park after 1700 in the following lots:

1. Student designated parking zones;
2. Staff lots 1 -10, + 12*;
3. Metered lots on White and Roper Avenues

*Note that Lots 1, 2, 4 and metered lots on White Avenue are reseved for females driving alone. Lot 3 is reserved for night school instructors. Handicapped persons should contact the Continuing Education office for special parking arrangements, 434-5734, local 581.

The BCIT Security Department, which controls traffic and parking, is located in the North Foyer of Building 1A or in Parking Portable 2Q.

Vehicles improperly parked at any time may be removed at the owner's expense.

At the Downtown Education Centre, off-street parking is available in the area.

BUS SERVICE

Bus service to BCIT includes a No. 30 Willingdon, a No. 820 Canada Way, and a No. 32 Grandview and service is in effect until 11:30 p.m. nightly.

FIRST AID

PVI is pleased to extend the use of its First Aid resources to BCIT as follows: Monday - Thursday, 1630 -2130, Building 15A, PVI Burnaby Campus, telephone 434-5722, local 211. On Friday from 1630 -2030, call Pager number 9-600-8965 FOR EMERGENCY ONLY and proceed to the BCIT Medical Services office in the SAC. Saturday first aid is available from 0800 -1300, Building 14, telephone 434-5722, local 238. (Tool room of the Welding Building).

In the event that the injured person is immobile, the Inhalator and/or Ambulance is to be called 291-1234/872-5151. However, in this event, it would be appreciated if Pacific Vocational Institute's First Aid Attendant could be informed in order that the required Form 7 for Workers' Compensation Board coverage can be completed.

TEXTBOOKS

The **Burnaby Campus** Bookstore is located at the east end of Building 2D. Most courses require that a textbook be purchased. A textbook list may be consulted in the Bookstore or Registration area. The Bookstore also offers school, engineering and drafting supplies at equitable prices. In addition a selection of reference and technical books are available. The Bookstore is open from 0800 - 1600 throughout the year. For evening classes the Bookstore is open from 1730 - 2030 Mondays to Thursdays from September to Mid-October, January and the first two weeks of Term 3; and from 0830 to 1230 on the first four Saturdays of Terms 1 and 2. A schedule of dates is posted in the Bookstore prior to the commencement of each term.

Textbooks for **Downtown** courses are available at the Centre. Telephone 687-4678 for hours of operation.

USED TEXTBOOKS

BCIT Bookstores schedule a used textbook buy-back near the end of each term. Used textbooks required for B.C.I.T. courses in the following term are purchased from students at 50% off current new book price.

LIBRARY

Excellent library facilities are open to part-time students. Apply for a library card at the Library front desk or at the Downtown Centre at the start of your course. From September to May Library hours are: 0800 - 2200, Monday - Thursday; 0800 - 1700, Friday; 1000 - 1800, Saturday and Sunday.

Holiday hours and further information can be obtained by calling the library reference desk at 434-5734, local 371 (days) or 434-5731 (evenings).

An excellent self-guided library tour is available upon request. Tours related to research sources in a particular technology are also available.

Seminars on research for specific assignments can also be arranged for groups of students at the request of their instructor.

Students are encouraged to use all of the many facilities and resources of the Library and Audiovisual Services Division.

For library card applications made at the Downtown Centre, allow one week for processing.

Note: A $25 fine will be charged for books overdue 30 days or more.

CAFETERIA

At the **Burnaby Campus** hot meals are available at the following locations and times during the school term: Food Training Centre, Building 2B: 0645 - 1830, Monday-Thursday, 0645 - 1730 Friday. Growlies (Licensed at night), Student Activity Centre, Building 4A: 0730 - 1830, Monday-Friday.

Light refreshments are available while classes are in session from: '76 Snackery, Building 2N. Hours from September to the end of May are: 0700 - 2100 Mondays to Thursdays, 0700 - 1500 Fridays, 0830 - 1300 Saturdays.

Road Runner, 2nd Floor Building 1A, Room 237: Hours from September to end of May are: 0730 - 1530 and 1800 - 2030 Mondays to Thursdays; 0730 - 1330 Fridays.

Corridor coffee service is available for evening classes at three locations in Building 1A.

Light refreshments may be obtained from vending machines located on the 4th and 9th floors at the **Downtown** Education Centre.

LOST AND FOUND

During the day the Lost and Found Office is located in Trailer 2T. Students should call the Lost and Found, 434-5734 local 878, between the hours 0900 - 1530, Monday-Friday; or, in the evening, check at the Security Office in Building 1A, Room 130.

STUDENT ASSOCIATION

Continuing Education students who register in part-time courses which take place on the BCIT Burnaby Campus, and which are 36 hours or more in duration, will be assessed a student activity fee of $2 per term. This fee entitles part-time Continuing Education students to use all the facilities available to full-time students.

STUDENT ACTIVITY CENTRE

The Student Activity Centre (SAC) building contains a full-size gym, weight room, changing rooms and equipment centre, cafeteria, health service office, student offices, and committee rooms. Also completed and ready for student use is Phase One of the Student Association's new Campus Centre, containing squash and racquetball courts, lounges, a deli bar and a video game area. Fundraising is underway for two more phases. Phase Two will provide new offices and meeting areas for the SA; Phase Three will consolidate the SA's cafeteria and pub operations into a new facility with an outdoor beer garden and skylighted lounges.

Information can be obtained from the General Office in the SAC. Telephone 434-5734, local 601/602.

CONTINUING EDUCATION STUDENT COMMITTEE

The Continuing Education Student Committee represents the interest of part-time students, working with the Administration of BCIT and with the Student Association. Volunteers are welcome — telephone the CE & IS Division Office 434-5734 local 868/869 for more information.

THIS'N THAT (TNT) EMPORIUM STORES

Three stores are operated for students and staff. School supplies, BCIT insignia, calculators, etc. can be purchased there.

Hours of operation:
Main store, located in the 2N building
0730 - 1930 Mondays - Thursdays; 0730 - 1600 Fridays; 0730 - 1530 Saturdays.
Smaller store located in the North Foyer of 1A;
0730 - 1900 Mondays - Thursdays; 0730 - 1530 Fridays.
A store is also located in the Student Activity Centre. Hours of operation are posted.
Telephone: 435-5131.

WHYNOT PUB

Located in the SAC building. Open Mondays - Thursdays, 1630 - 2300; Friday 1530 - 2300. A great way to relax and enjoy the company of fellow students. Hot Food Bar also available in the Pub open Monday - Friday, 1630 - 1800.

DANCES

Held periodically in the SAC and also downtown at the Commodore Ballroom.

GROWLIES

For location and hours, see "Cafeteria".

PUBLICATIONS

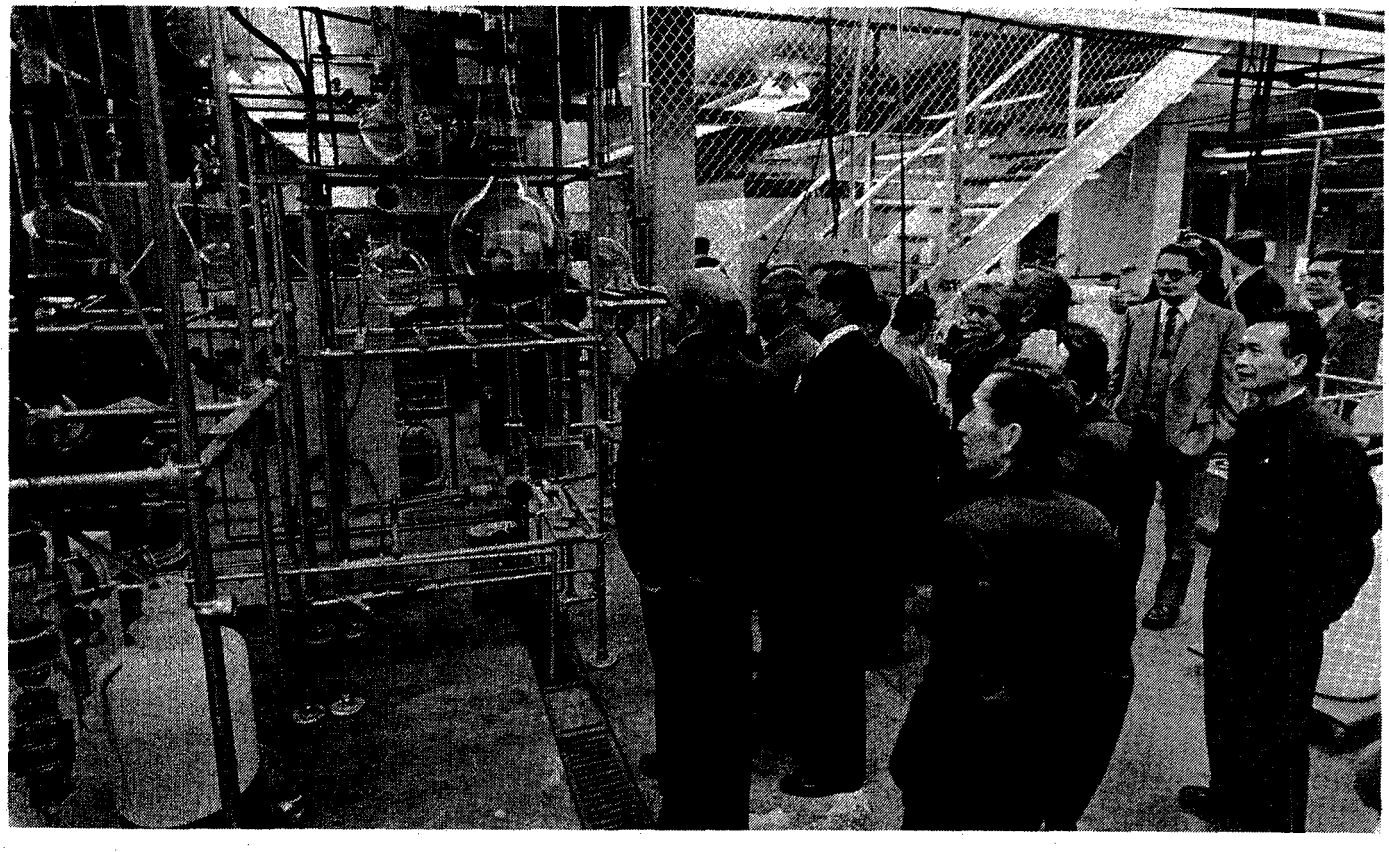
Print shop with layout, bindery and copy services.

LINK

Student newspaper published weekly and distributed free. Participation welcome.

NIGHT LINK

Newspaper for part-time students.



Financial Assistance For Part-Time Students

All students carrying a course load of less than 60% of a full-time program, or enrolled in a short-term course (11 weeks or less) may apply for assistance from the following sources. The basic criterion for all assistance is demonstrated financial need. For more information on the programs listed here contact the Student Financial Services Office at BCIT. Telephone: 434-5734, local 886.

B.C. STUDENT ASSISTANCE: SPECIAL ASSISTANCE PROGRAM

This program is intended to help people upgrade existing skills or to retrain. To qualify, an applicant must be: (a) a Canadian Citizen or a permanent resident of Canada; (b) a resident of B.C. for at least one year; (c) registered in credit courses that lead to a Diploma, Certificate or first Degree. The Special Assistance Program is not designed to provide funds to cover normal living expenses; only expenses which are a direct result of the applicant's courses of studies can be covered — tuition, books, and transportation (in some cases). The maximum grant available to any one student is $300 per term. These figures may be revised annually. Applicants should allow six weeks for processing.

BURSARIES AND AWARDS

The Harry H. Stevens Memorial Fund

This fund was established by the Kiwanis Club to assist students enrolled in a part-time program, or a full-time program of short duration. To qualify, applicants must be taking a course to upgrade skills or retrain in the technical, supervisory or management areas. Applicants must also have resided in B.C. for at least one year. An application form is enclosed in the Special Assistance Kit available from Student Financial Services.

Deadlines for the submission of applications are **August 15** for the **Fall** term (September to December); **December 31** for the **Winter** term (January to April); **March 15** for the **Spring** and **Summer** term (April to August).

Pacific Association for Continuing Education (PACE)

The Pacific Association for Continuing Education invites applications for bursaries from part-time or short-term adult students in any recognized and formally organized learning activity in continuing education or training in B.C.

Applicants must show evidence of financial need, and limited or no access to other scholarship or bursary funds. They must also provide evidence of intent to pursue a continuing education plan or job upgrading goal which will benefit both themselves and the community.

Bursaries are open to residents of B.C. and must be applied to tuition fees or course materials. The amount awarded varies between $50 and $100 for any one period of study. Recipients are eligible for one award only.

Deadlines for submissions of applications are: September 30, January 31, April 30, and July 30.

Soroptimist — McCall Life Pattern Fund Training Award

This Training Award is designed to assist mature women in their efforts to upgrade their job skills, or to train them for entry or re-entry into the labor market. The Vancouver Soroptimist Club sponsors an annual competition for an award of $1,000. The winner of $1,000 becomes eligible to compete for the Western Canada Region Soroptimist award of $1,500.

Additional local awards may be made to runners-up. To qualify, the applicant should be over 30, and the head of a household (or have a family that is financially dependent on her). She should be completing an undergraduate degree, or entering vocational or technical training. Women interested in competing for the Training Award should contact the Student Financial Services Office. The application deadline is December 15.

Quantity Surveyors Society of B.C.: George Parsons Memorial Scholarship

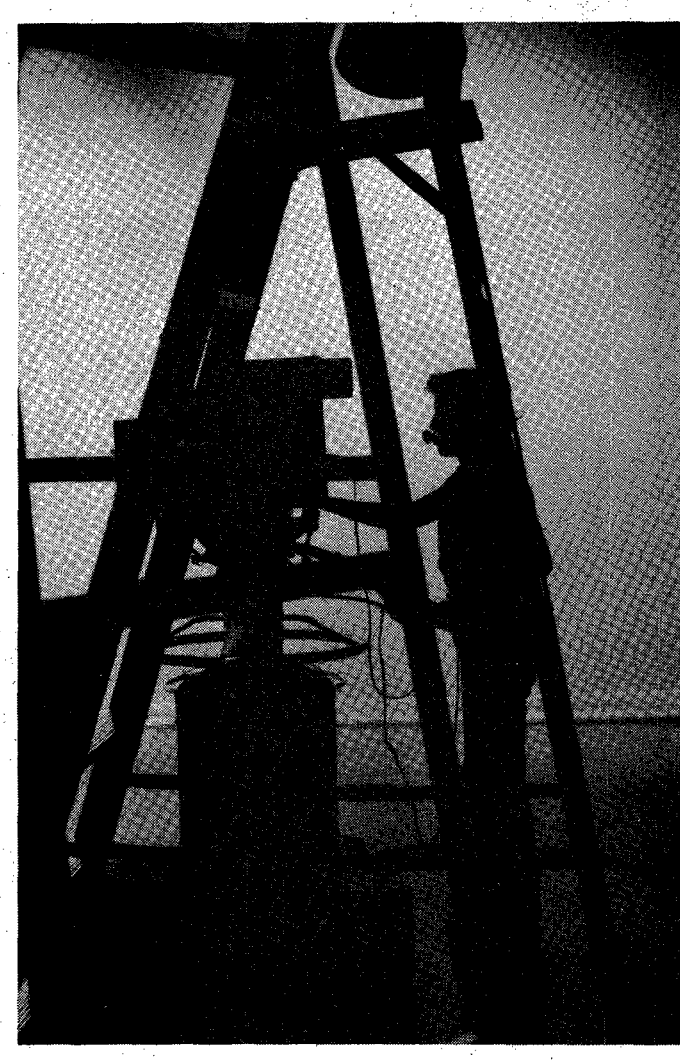
The Quantity Surveyors Society of B.C. present annually the George Parsons Memorial Scholarship in the amount of $200 to a leading student in Building Technology (Economics Major).

Lieutenant Governor's Award

The Lieutenant Governor of British Columbia's medal is awarded annually to a part-time BCIT student who has completed at least one certificate, not necessarily in the current academic year.

The recipient of the award must be a part-time student in the Continuing Education and Industry Services Division registered in the current academic year, and should have contributed positively to the life of the Institute and/or the community at large, as well as having an excellent academic record.

Interested students should contact a Program Consultant for details.



Registration and Fees

For information on course location, term, time, length, and fee, please see the Class Schedule. The Class Schedule is available on request or can be viewed at registration locations.

To Register

Registration is on a first-come, first-served basis. See General Information section for campus locations and office hours. Students must complete a registration form and return it by mail or in person. The deadline for submission of registration by mail is 3 weeks before classes commence. Mail registration should be forwarded to: Division of Continuing Education and Industry Services, BCIT, 3700 Willingdon Avenue, Burnaby, B.C. V5G 3H2.

Students may register in person at BCIT Burnaby Campus, 3700 Willingdon, or at the Downtown Education Centre, 549 Howe Street. The recommended deadline for registration in person is 2 weeks before classes commence.

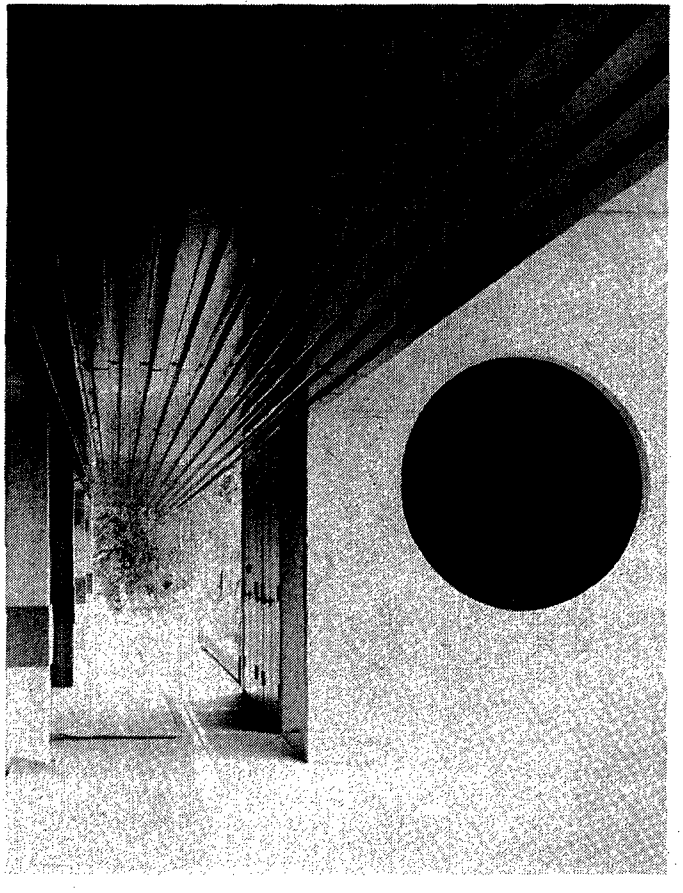
Fees must accompany the registration form. When student fees are to be paid by the employer, written authorization on company letterhead must accompany the registration form,

Classes start:
Term 1 September 12
Term 2 January 9
Term 3 April 2 (April 24 at the Downtown Education Centre)

Fees

Fee information is presented in the Class Schedule which is available on request or can be viewed at the registration locations. Payment can be made by cheque, money order, Master Card, or VISA, and if registration is in person, payment can be made by cash. A $10. charge is levied for any returned NSF cheques.

For financial assistance information see General Information section of this calendar.



LATE REGISTRATION

Late registrations are accepted if space is available. Students must have written permission from the instructor before registration will be accepted after the first two sessions of a course.

CANCELLATION AND RESTRICTED ENROLMENT

The Institute will make every effort to offer all courses as listed in the calendar. Nevertheless, the Institute reserves the right to limit enrolment, to select candidates, to cancel courses, to combine classes or to alter time of instruction, without prior notice. Students must fill in a refund form, or transfer paid fees to another course, when a course is cancelled.

TUITION FEE RECEIPTS

An official income tax receipt is mailed by the Finance Office by February 28. A nominal charge will be levied for duplicate receipts. For income tax purposes students may claim their tuition fees on either an academic or calendar year basis.

REFUNDS

Students who withdraw from a regular evening course may be eligible for a refund if they submit an "Application for Refund" form. This completed form must be in the Registrar's Office by the refund deadline as stated on the class admission slip.

A charge of $25.00 per course will be deducted for refund processing when students withdraw.

For certain courses of extended duration, or those with a special fee, the non-refundable portion of the fee will be higher. Fees for some special courses are non-refundable. Check your admission slips upon registration.

REFUND DEADLINE

Saturday 12:30 following the second session of classes for regular term start.

Counselling and Career Planning

Counselling

The BCIT Counselling Centre, staffed by professional trained counsellors, offers a private and confidential service to students and prospective students. The emphasis is on career counselling and in addition to personal service the centre is stocked with informative reference material for vocational and educational planning. A section is devoted to women's issues. For more information call 434-5734, local 327.

Career Planning

CAREER SEARCH WORKSHOPS

The BCIT Counselling Centre has designed workshops of four sessions each, for adults who have been in the work force for at least two years and who wish to examine their career paths and lifestyles in terms of direction and satisfaction.

The workshops include standardized testing, exploration of career training opportunities, educational resource materials, and discussion. Participants are encouraged to clarify their interests, values, and abilities; specify goals and develop plans of action.

The workshops are limited to 15 participants. Contact Continuing Education Admissions or see the Class Schedule for registration information.

PROGRAM CONSULTATION

Program Consultants are available to assist students in course selection and program planning appropriate for their individual career needs. Students are advised to confer with a Program Consultant prior to entering a program of studies at BCIT. Although many of the suggested Certificate Programs are preapproved, it is recommended that proposed programs be submitted to a Program Consultant for approval.

At the **Burnaby Campus** Program Consultants are available 0830-1630, Monday - Friday, throughout the year. While classes are in session Program Consultants are also available 1630-2030, Monday - Thursday and 0830-1230 some Saturdays.

Call 434-5734, local 204/205, for an appointment.

At the **Downtown** Education Centre, 549 Howe Street, Vancouver, a consultant for Business Courses and Certificate Programs is available. For more information call 687-4666.

CERTIFICATE PROGRAM APPROVAL

Suggested Certificate Programs are presented within the Certificate Program section of this calendar beginning on page ●. These Certificate Programs are made up of courses representing a minimum of 15 units, the basic certificate. These units are attainable over a three year period. This three year period is flexible.

Although these suggested programs are preapproved it is advisable and often essential to have these approved by a Program Consultant or the appropriate Technology Department Head. Students may amend these recommended programs to suit their individual career needs. These must be approved by a Program Consultant. An Application for Program Approval is located on the reverse of the pull-out campus map in this calendar.

CANADA EMPLOYMENT CENTRE

The Canada Employment Centre is located in Room 204, building 2N. Hours of work are Monday to Friday, 0800 - 1630, year round.

In addition to providing a placement service for diploma graduates and summer employment for undergraduates, the Canada Employment Centre assists Continuing Education students and BCIT alumni by providing:

1. Career counselling
2. Labor market information
3. Company information
4. Job search techniques (i.e. resumé writing and developing interview skills).

Assistance in finding employment is given to students in both Diploma and Certificate programs. Placement is dependent upon the student's work experience, training, and educational background.

Many Continuing Education students are also employers and the Canada Employment Centre may help them with their personnel requirements, through employment programs as well as the placement service. Telephone: 434-5734, locals 333/334 for more information.

Academic Information

Admission

The Division of Continuing Education and Industry Services (CE&IS) courses are taught at a level which assumes students have completed secondary school (Grade 12). Some courses have specific prerequisites or special conditions for entry; these prerequisites or conditions are presented with each course description in this calendar.

BCIT Preparatory Programs (Core)

The Division of Continuing Education and Industry Services at BCIT offers non-credit courses in Chemistry, Physics, English, Biology and Mathematics, which meet the various entrance requirements for BCIT diploma programs.

These courses will be of interest to mature students, students who do not have special prerequisites, and students wishing to improve their knowledge of Core Subjects.

Courses may be taken individually or as a package. Students are encouraged to consult with the Continuing Education program consultant for advice on course selection or program planning.

Students who wish to apply for admission to one of the full-time diploma programs should indicate on their application forms which of these courses they plan to complete. *Successful completion of individual courses does not guarantee acceptance to day school programs.*

Certificates and Diplomas

CERTIFICATES

BCIT Division of Continuing Education and Industry Services Certificates are awarded to students who have acquired a minimum of 15 units of credit on a pre-approved program of studies. A unit of credit normally consists of 36 hours of classroom time. Program Consultants are available to assist students in planning a Certificate Program. See Counselling section for details. Suggested Certificate Programs are outlined beginning on page 7. A Program Approval form is located on the reverse of the pull-out map in this calendar. An Application for Certificate can be obtained from the Information desk at BCIT locations.

PROGRAM APPROVAL

Program approval assures the student that his/her academic efforts will result in the desired certificate. Programs of study leading to certificates in the Business, Engineering and Health Technologies are outlined in the Certificate Program Section of this calendar. Although most of these suggested programs are preapproved it is advisable and often essential to submit these to a Program Consultant for approval.

Program approval is required:

1) when a student wishes to modify a certificate program outlined in the calendar.
2) when a student wishes to amend an approved program.
3) when a student requests a transfer credit.
4) for all Special Certificates, Senior Certificates and National Diplomas of Technology.
5) for all combined Engineering and Business Certificates.
6) whenever challenge credit is requested.
7) when an elective is included in a program.
8) when alternative courses are included in a program.

A student must apply for program approval in a written submission detailing the units of proposed courses and programs. Forward submissions to: Program Consultant, Engineering, Business, or Health (as applicable), Continuing Education, BCIT, 3700 Wilingdon Avenue, Burnaby, B.C., V5G 3H2. Please allow 4-6 weeks for processing.

NATIONAL DIPLOMA OF TECHNOLOGY (45 units)

A student who has completed the Senior Certificate, has extensive work experience and a good academic record, may make application for a program of studies leading to a National Diploma. At least 15 units of additional approved course work beyond the senior level is required to meet Diploma requirements. The Engineering Technologies may require 45-55 units.

COMBINED BUSINESS AND ENGINEERING CERTIFICATES

The British Columbia Institute of Technology will award combined Business and Engineering Certificates to students who successfully complete 15 units of study drawn from both departments. The object of these certificates is to provide a course of studies with a general business base and the flexibility to include engineering courses to suit the interest of each individual. Students *must* have a complete program approved in advance. These programs are not intended to lead to advanced level certificates.

BUSINESS, ENGINEERING TECHNICIAN, OR HEALTH CARE CERTIFICATE (minimum 15 units of credit)

Outlines of these certificate programs in the various technologies are located in the Certificate Section of the calendar.

SENIOR ENGINEERING OR SENIOR BUSINESS CERTIFICATES (30 units of credit)

After completing a 15 unit Business or Engineering Technician Certificate, a student may earn a Senior Certificate in Engineering or Business by completing an additional 15 units of credit. Some Senior Programs in Engineering require an additional 20 units of credit.

The courses required for a senior Certificate are published for some technologies. In technologies where no Senior Certificate program is published, the student must seek assistance from a program consultant. All Senior Certificate programs of studies *must* be approved in advance.

SPECIAL CERTIFICATES

Students with a National Diploma of Technology, a University Degree, College Diploma or Professional Designation may study for a Special Certificate. Graduates may receive a Special Certificate when a pre-approved program of 15 units of credit has been completed. A Special Certificate is available in most, but not all, technologies.

The Special Certificate is intended to complement existing academic credentials. The program of studies will consist of supplementary course work not completed in the diploma or degree program.

Students wishing to pursue a Special Certificate *must* consult with a program consultant to discuss an individualized program of studies. Students should, at the time of the appointment, provide an official transcript of their diploma or degree program. BCIT graduates need not provide a transcript covering BCIT studies.

DIPLOMA OF TECHNOLOGY

After completing the Special Certificate program, the student may advance to a National Diploma. The student may be required to complete an additional 9-30 units of course work. The Engineering Technologies may require an additional 9-40 units of course work. The number of units of course work a student is required to complete after the Special Certificate will vary, depending on previous academic course work completed. Transfer credit will not be recognized in the diploma completion program.

Students *must* confer with a program consultant and obtain program approval before beginning a diploma program.

Please note: a) course credits from a completed degree or diploma program cannot be transferred; b) students with a national Diploma of Technology are not eligible for a technicians certificate or a second Diploma of Technology in the same technological area.

APPLICATION FOR CERTIFICATES

The responsibility for applying for a certificate lies with the student. Application should be made only when the student has completed the requirements for the certificate.

An application form is available at the information desk of the BCIT Burnaby campus and Downtown Education Centre.

Course Credit

The basic measure of course credit is a UNIT which normally is awarded for 36 hours of study. See General Information for Course formats.

TRANSFER CREDIT

Transfer credit is a means whereby a student may acquire recognition for academic work completed at another recognized post-secondary institution AND NOT USED AS PART OR WHOLE REQUIREMENT FOR A DIPLOMA OR DEGREE WHICH HAS BEEN CONFERRED OR GRANTED. The course work for which the student is requesting transfer of credit must be related to the student's program of studies at BCIT.

While transfer credit will be recorded only after the student has completed at least one unit of course work at BCIT, assessments with respect to beginning courses and exemption from prerequisites can be made prior to completion of one course.

TRANSFER CREDIT APPLICATION PROCEDURE:

Students must apply in writing to the program consultant and MUST provide the following:

1) an *official* transcript from the institution where the courses were taken; please note: copies are not acceptable.
2) a course description which outlines
   a) the topic covered
   b) the number of hours of classroom and laboratory study
   c) the types and number of assignments and examinations completed
   d) the name, author and publisher of the textbooks used
3) the name of the BCIT certificate program
4) proposal for a complete (certificate) program including the transfer units requested.

Please Note: It is the responsibility of the student to provide the documentation for a transfer credit application. Failure to submit the required documentation may result in rejection of the transfer credit application.

Please allow 4-6 weeks for processing.

TRANSFER FROM DAY CLASSES

A student transferring to part-time studies from the full-time diploma program will generally be granted credit for all courses successfully completed on withdrawal from day school. A student who fails one or more subjects in the day program is encouraged to consider the Division of Continuing Education and Industry Services after withdrawal from day school.

"IN-HOUSE" TRAINING FOR CREDIT BCIT CERTIFICATES

BCIT students may obtain transfer credits for approved courses taken within, or sponsored by a Company, Government body or organization associating with BCIT in a joint development program for the student-employee. This program is an additional service to students and recognizes that many worthwhile "in-house" training courses are carried on, either through internal resources or by hiring reputable outside agencies. However, these organizations may lack the resources to present a totally well-rounded program such as is available at BCIT.

Any company or organization wishing to have credit granted to employees for "in-house" training should submit details to the Dean, Development and Continuing Education, BCIT, for approval before making a commitment to the employee. Application should include course content, duration, qualifications of the instructor and any pertinent data. This need only be done once, unless there is a change. Courses for credit should be related to one or more BCIT Certificate Program (see those within this calendar) and normally represent a transferable skill. For example: "Principles of Supervision" would be acceptable, whereas a course on company policy and procedures, or interpretation of the company labor agreement would not be acceptable. On-the-job training, skill or techniques unique to the company, would also not be appropriate for recognition. Credit will not be granted for less than half a unit.

Requests for transfer credit may be submitted by individual employees to the Program Consultant, Business, Engineering, or Health, Division of Continuing Education and Industry Services, at any time after completion of one unit of BCIT course work. Such submissions should be supported by the employer's documentation of successful completion.

It is anticipated that this interest and encouragement to employees to develop and upgrade their qualifications will be rewarding to both employee and employer. Enquiries should be directed to: The Dean, Development and Continuing Education, BCIT, 3700 Willingdon Avenue, Burnaby, B.C., V5G 3H2.

CHALLENGE CREDIT

Students may acquire credit recognition for knowledge and skills obtained through self-study and/or work experience. By challenging a course students claim they already have the knowledge and abilities to be gained from taking the BCIT course. Because of the learning format of some courses, not all are considered challengeable.

Where approval has been granted to challenge a course, a formal evaluation procedure will take place. The student's abilities will be assessed through a written and/or oral examination, research paper or other means, as the evaluator sees fit. A student may challenge a course only upon completion of 10 units of credit at BCIT. Only five units of challenge credit will be allowed for each Certificate program.

Challenge credit is not considered as work completed at BCIT, but when a course is successfully challenged the number of units required for a Certificate will be reduced. If a student is successful a "C" (for credit) will be indicated on the transcript; if unsuccessful, nothing will be indicated.

Fees to challenge a course must be paid before the formal evaluation takes place. The fee for challenge is 50% of the course fee.

A student may challenge a course by applying in writing to: Program Consultant, Continuing Education, BCIT, 3700 Willingdon Avenue, Burnaby, B.C., V5G 3H2.

Examinations, Grading, and Marks

Students are required to take the examinations for each course at the time set by the Institute. Students unable to write examinations due to special circumstances should first contact their instructor; then, if necessary, consult the head of the appropriate CE & IS department: Business, Engineering/Core or Health.

EXTERNAL EXAMINATIONS

We will attempt to co-operate with any part-time student who cannot write an examination because of absence from the city, by allowing the student to write the examination at a set time in another centre under an invigilator acceptable to the institute.

AUDITING

A student may audit a course with the permission of the instructor. An audit student is not formally evaluated and does not write examinations. However, the student is expected to take an active part in classrooom discussions and laboratory exercises, maintain satisfactory attendance and pay the course fee.

An auditing student does not receive credit for the course, but will receive a Statement of Marks with "Audit" indicated. A student may change his status in the course from audit to credit, with written permission of the instructor during the course, but will not receive credit by applying after the course is completed.

ATTENDANCE

Students are required to attend at least 50% of the scheduled classes and laboratory sessions. Failure to meet the attendance requirement will result in a grade of "N" - not complete.

EVALUATION

No rigid form of evaluation is prescribed. Generally, assessment is based upon examination results and completion of other course requirements: projects, oral or written work. Evaluation should provide a measure of the student's comprehension and application of the knowledge gained, and distinguish between the various levels of achievement.

STATEMENT OF MARKS

It is the policy of Continuing Education to issue a Statement of Marks to every student who completes a credit course of 15 hours or more. To receive a Statement of Marks, all fees must be paid in full. Any request for change of information carried in the Statement of Marks must be made in writing to the office of Continuing Education WITHIN 30 DAYS of receipt of the Statement of Marks.

GRADING

80%-100% — 1st Class
65%- 79% — 2nd Class
50%- 64% — 3rd Class

F — Failure: Less than 50%

A — Aegrotat: Standing granted to a student who has a good term record but is unable to write the final examination because of illness or other circumstances.

C — Credit Granted: Recognition of successful challenge of a course.

N — Not complete: No standing granted, course requirements incomplete.

AU — Audit: Student attended classes, no credit given.

INCOMPLETE STANDING

Arrangements may be made, in extenuating circumstances, for students to complete a course for credit where an "N" has been assigned. Those arrangements must be made in writing through the Office of the Registrar within 30 days of receipt of a Statement of Marks for the course in question.

APPEAL OF FINAL MARK

A student who is not satisfied with the final mark awarded is cautioned that the grade has been reviewed carefully and, aside from clerical error, appeals seldom result in a higher mark. Request for reconsideration of a final mark must first be made on an informal basis to the course instructor. If unsatisfied, a formal appeal may be made in writing to the Dean of Development and Continuing Education clearly stating the reasons for believing a higher grade is deserved. The appeal must be submitted within two months of the last class or, in the case of a Directed Study course, within two months of mailing the last assignment. The appeal must be accompanied by a fee of $10 which will be refunded if the original mark is favorably adjusted.

TRANSCRIPTS

A fee of $3 is charged for each transcript requested. To apply, write to the Office of the Registrar BCIT, 3700 Willingdon Avenue, Burnaby, B.C., V5G 3H2.

BCIT BOARD OF GOVERNORS

BCIT is governed by a fifteen member Board appointed by the Lieutenant-Governor in Council.

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Jones, Emery, Carfra Barristers & Solicitors

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BCIT

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AEL Microtel Limited

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Richard A. Yates, LL.B., M.B.A.
Administrative Management Technology
B.C.I.T.

Keith Yorston
Chairman
Q.M. Industries Limited

(one member to be appointed)

Secretary to the Board:

Patricia Maertz,
434-5734, local 676

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President and Chief Executive Officer

C.J. Greenhill, Dipl.T., B.Sc., M.A., Ed.D.
Director, Institute Planning

Education

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Vice-President, Education

D.M. Brousson, B.A.Sc., P.Eng.
Dean, Development & Continuing Education

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Dean, Core Division & Acting Dean, Engineering Division

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Dean, Business Management Division

B. Gillespie, B.Sc., M.Sc.
Dean, Health Division

D. Hume, B.Ed.
Provincial Consultant on Industry Services and College Relations

D. Hickman, F.R.A.I.C.
Institute Architect

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Director, Counselling Services

B.E. Copping, B.Sc., M.Sc., M.D.
Director, Medical Services

E.B. Stewart, B.A., M.B.A.
Director, Personnel/Employee Relations Services

J.G. Kenyon, P.Eng.
Acting Registrar

J.E. Carver, C.D., B.A., B.L.S.
Dean, Library Services

H. Holst, CDP
Acting Director, Computer Resources

T. Walls
International Student Advisor

Dick Forbes-Roberts
Canada Manpower Liaison

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Vice-President Administration and Bursar

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Acting Director of Financial Accounting

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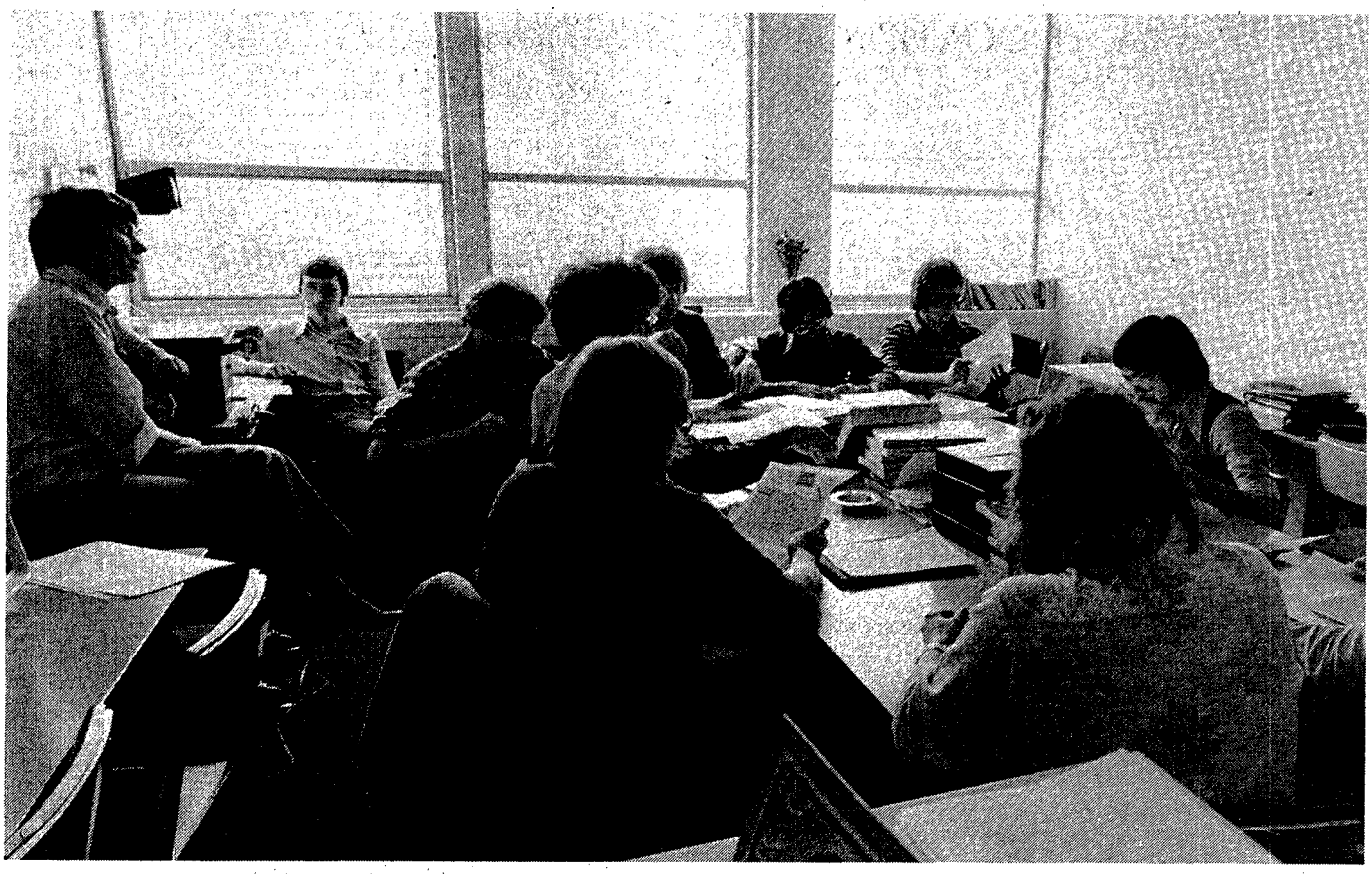
Director, Physical Plant

N. Andrew, C.G.A.
Director, Institute Budgets & Analysis

W. Hepple
Director, Purchasing & Central Stores



E. McLeod
Manager, Word Processing Centre

V. Karpinsky, B.A. (Hons.)
Director, Ancillary Services

G. Lake, Dipl.T., C.G.A.
Manager, Financial Systems

CONTINUING EDUCATION STUDENT COMMITTEE

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Office & Technical Employee's Union, Local 15

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Mrs. Janet Brown, CBC-TV Technician
Andre Buller, Stewart Plastics Ltd.
Ms. Jean Douglas, Simon Fraser Health Unit
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Geoff Sale, AEL Microtel Ltd.
Gavin McLeod, B.C. Telephone Company
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Resources & Student Affairs
Atley Morrow, Acting Associate Dean, C.E. & I.S.
Jacquie Jones, Acting Head,
Business Continuing Education
Paddy O'Reilly, Head, Engineering/Core C.E.
Moira Barnetson, Health Continuing Education
Chris Lloyd, Program Consultant, Continuing Education

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David M. Brousson, B.A.Sc., P.Eng.

Associate Dean, C.E. & I.S.
Atley Morrow, B.A., M.Ed., Registered Psychologist in B.C., Acting

Business
Jacquie Jones, Dip.Tech., Acting Head

Engineering/Core
Paddy O'Reilly, B.A.Sc., Head

Health
Pat Wolczuk, B.H.Ec., M.Sc., Head

Distance Education
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Industry Services
Eric Morse, P.Eng., Acting Head

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Robert J. Jamieson, B.A., Manager

Planning & Development
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Downtown Education Centre
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Manpower Development Supervisor,
B.C. Hydro

Members

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Inn at Denman Place

Pierre Langevin
Superintendent - Compensation
& Personnel Development
Aluminium Company of Canada

A.J. (Art) Blakeney
Consultant, Manpower Planning & Development,
Aluminium Company of Canada

John Cameron,
Chairman Engineering Sub-Committee
Technical Training Coordinator,
H.A. Simons (Int'l) Ltd.

J.A. (John) Collison
Deputy Director of Personnel Service,
Municipality of Surrey

W. (Bill) Eccleston
Director of Personnel,
Minicipality of Surrey

D. (Doug) Deane,
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Duncan McAmmond
Employment Manager
AEL Microtel

Larry Fraser
Microtel Pacific Research

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Training Engineer
B.C. Telephone Company

R.C. (Rob) MacGregor
Manager, Manpower Planning & Staff Development,
Ministry of Transportation & Highways

N. (Norm) Henderson
Senior Manager
Employment & Immigration Commission

P. (Paul) LaBranche
Director of Membership Services
Society of Engineering Technologists

Ms. Lorraine Larson
Supervisor of Personnel Development
C.P. Air

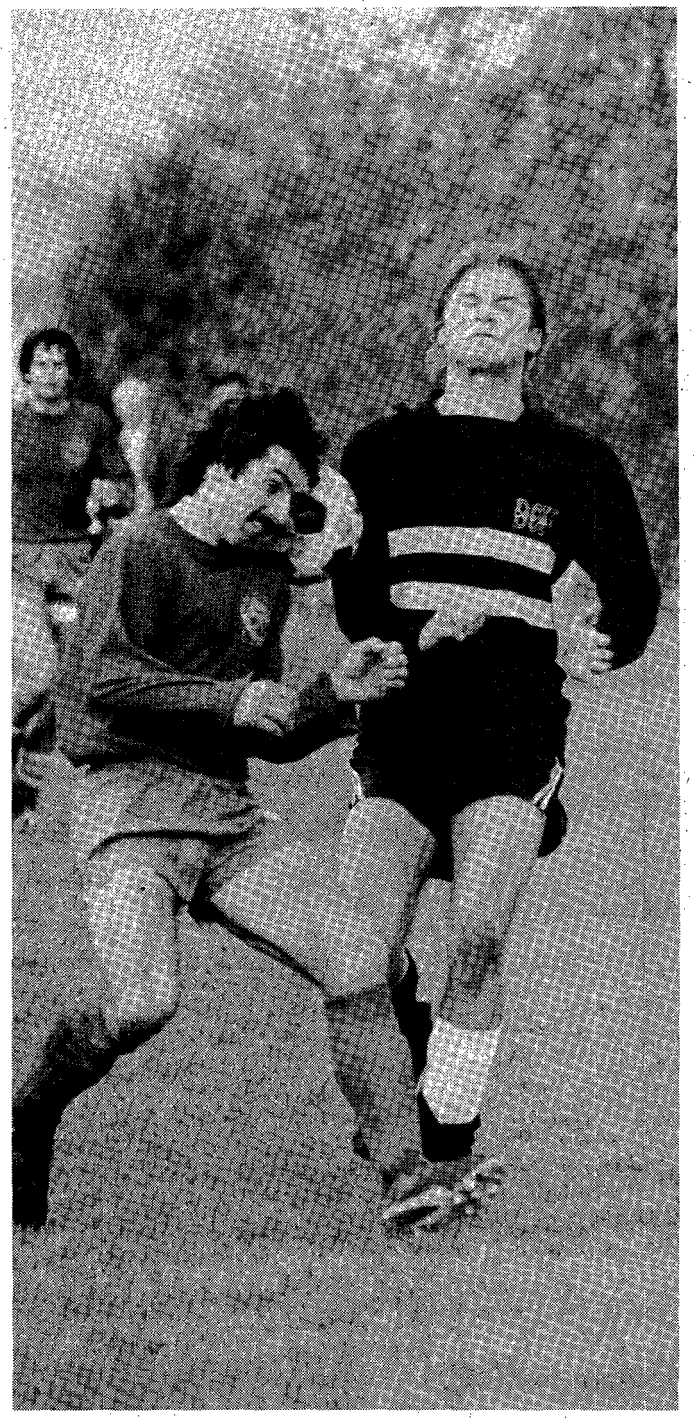
Ms. Pat Semeniuk

Mrs. Pat Wadsworth
Executive Director,
B.C. Health Association

W.R. (Bill) Tremaine
Executive Director, Staff Development
& Safety Programs
Public Service Commission

Ex-Officio

Ms. Solange Pinard
Chairperson
C.E. Student Committee



PROFESSIONAL AGENCIES OF INTEREST TO PART-TIME STUDENTS

Business

CANADIAN ASSOCIATION FOR PRODUCTION AND INVENTORY CONTROL (CAPIC)

The Canadian Association for Production and Inventory Control (CAPIC) is a professional group of men and women who practice the art and science of production and inventory management.

CAPIC is Region 8 of APICS, one of the fastest growing professional societies in the world. Organized in 1957, the society has grown from a handful of practitioners to over 38,000 members in over 170 chapters in Canada, the United States and 12 other international affiliates.

The primary objectives of CAPIC are to provide exposure to the increasingly important roles of production and inventory control practitioners, supervisors and managers and to provide means of education for both career exposure and advanced learning.

A course of studies leading to a materials control certificate issued by CAPICS is offered by BCIT through the Operations Management Technology. See the Operations Management Technology section of Certificate Programs for details.

For further information on CAPICS contact:

Keith Hartley — CAPIC Director of Education
c/o Operations Management Technology
BCIT
3700 Willingdon Avenue
Burnaby, B.C.
V5G 3H2 Phone: 434-5734, local 857

CANADIAN CREDIT UNION INSTITUTE FELLOWS' PROGRAM

The Canadian Credit Union Institute Fellows' Program was developed under the sponsorship of the Canadian Co-operative Credit Society with the support of its member leagues and centrals. The program is managed and administered by the Co-operative College of Canada.

The need for developing people within the credit union system has been recognized as a high priority. The CCUI program provides an opportunity for credit union personnel to undertake a formal program designed to upgrade their knowledge and skills.

The CCUI program is a post-secondary level course of studies selected to provide students with a broad education in the theories, concepts and practices of all aspects of financial and business management.

Major commitment of time and energy, and a measure of self-discipline will be required of those people who select the CCUI program as their program of professional development.

Further information can be obtained by contacting the CCUI Co-ordinator, Education Department, B.C. Central Credit Union, 1441 Creekside Drive Vancouver, B.C. V6J 4S7. Telephone: 734-2511.

The following courses have been accepted for transfer credit:

CCUI COURSES	BCIT CONTINUING EDUCATION EQUIVALENTS
Accounting	16.140 Accounting 1
Business Administration	10.131 Management 1, or 10.232 Management 2
Marketing	20.180 Marketing 1, or 20.280 Marketing 2
Economics	10.135 Economics 1 — Micro 10.235 Economics 2 — Macro
Financial Accounting	16.347 Financial Accounting 1
Business Finance	16.361 Business Finance 1, or 16.461 Business Finance 2
Management Accounting	16.344 Management Accounting
Management Information Systems	14.921 Data Communications Concepts
Taxation	16.912 Taxation 1, or 16.913 Taxation 2
Organizational Behavior	10.221 Organizational Behavior 1, or 10.321 Organizational Behavior 2
Employee Relations	10.325 Labor Relations 1, or 10.425 Labor Relations 2
Personnel Management	10.910 Personnel Management
Business Law	10.360 Business Law 1, or 10.460 Business Law 2
Business and Government	10.240 Government and Business
Promotion Management	20.371 Advertising 1
Computer Concepts	14.052 Computers in Business, or 14.505 Computer Systems — Introduction

THE CERTIFIED GENERAL ACCOUNTANTS ASSOCIATION OF BRITISH COLUMBIA

The Certified General Accountants Association of British Columbia offers a program of studies leading to the professional designation, "Certified General Accountant" (CGA).

The association will recognize BCIT day school courses which have a content substantially similar to courses in the CGA program. Students who obtain a grade of 65% or better will be granted credit for such courses towards the completion of the CGA program.

Courses offered in the evening by the Division of Continuing Education and Industry Services will also be considered for exemption where they are essentially equivalent to the day courses listed below.

The following courses have been accepted for transfer credit:

CGA COURSES	BCIT FULL-TIME	BCIT CONTINUING EDUCATION
Accounting 101	16.140/240	16.140/240 or 16.918 (accelerated)
Economics 104	10.114/214 10.135/235 10.137/237 10.138/238 10.139/239 10.234/334	10.135/235
Law 108	10.380/480 10.384/484 10.387/487	10.360/460
Statistics 203	22.210 22.214 22.216 22.200 22.220 22.318	22.935

Accounting 211/222	16.347/447	16.347/447 or 16.926 (accelerated)
Accounting 311	16.341/441	16.341/441
Finance 316	16.361/461	16.361/461
ICS 325	14.050/052	14.050/052
Public Speaking	31.116/216	20.502/602

Students are advised to obtain a copy of the CGA exemption policy on a yearly basis to ensure they complete the correct courses and do not overlook any revisions.

Students who wish to present courses other than those listed above should consult the association. Applications for registration must meet all requirements of the association in order to be accepted into the CGA program.

For further information, please contact: The Certified General Accountants' Association of British Columbia, 1555 West 8th Avenue, Vancouver, B.C., V6J 1T5, or telephone (604) 732-1211.

THE INSTITUTE OF ACCREDITED PUBLIC ACCOUNTANTS OF B.C.

The Institute of Accredited Public Accountants of British Columbia has advised the British Columbia Institute of Technology that it is pleased to establish the course equivalencies as listed below. Accredited Public Accountants are found in the business community as practitioners, accountants, comptrollers, internal auditors, tax department auditors and business educators.

Students who are interested in the A.P.A. program should contact the Education Director, the Institute of Accredited Public Accountants of British Columbia.

These listings are published for reference purposes only and do not imply endorsement or formal articulation with the A.P.A. program.

APA Entrance Requirements	BCIT
1. Accounting 100	16.140 & 16.240
2. Accounting 200	16.347 & 16.447
3. Cost Accounting 300	16.341 & 16.441
4. Auditing 310	16.346
5. Financial Management 320	16.361 & 16.461
6. Accounting 400	**
7. Auditing 410	16.446
8. Taxation 420	16.912 & 16.913
9. Computers 430	14.050
10. Commercial Law 500	10.360 & 10.460
11. Advanced Studies 600	A.P.A. only
12. Advanced Studies 610	A.P.A. only
13. Comprehensive Examination 620	A.P.A. only
Graduate Studies — two electives	
1. Economics 710	10.135 & 10.235
2. Business Communication 720	31.912 & 31.920
3. Organizational Behavior 730	10.221 & 10.321
4. Information Systems 740	14.052 & 14.923

**Contact Fred D. McBriade, Executive Director Education, The Institute of Accredited Public Accountants of B.C. Lincoln Centre, Suite 101A, 3020 Lincoln Avenue, Coquitlam, British Columbia, V3B 6B4. Telephone 464-4035.

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF BRITISH COLUMBIA

The Institute of Chartered Accountants of British Columbia has advised the British Columbia Institute of Technology that it will accept certain courses as meeting its course requirements, providing a student meets its prerequisites and is acceptable to them.

The following table details suitable courses, subject to change without notice.

	BCIT Full-Time	BCIT Continuing Education	Credits Awards
Introductory Financial Accounting	16.140 and 16.240	16.918	3
Intermediate Financial Accounting	16.347 and 16.447	16.926	6
Introductory Management Accounting	16.341	16.341	3
Cost Accounting	16.441	16.441	3
Business Finance	16.361 and 16.461	16.361 and 16.461	3
Business Computers	14.050 and 16.052	14.050 and 14.052	3
Information Systems	14.053	14.505 and 14.605 22.952 and 22.956	3
Commercial Law	10.380 and 10.480 10.384 and 10.484 10.387 and 10.487	10.360 and 10.460	3
Mathematics	22.116 or 14.409 or 22.300 or 22.314	22.963	3
Probability & Statistics	22.216	22.935	3
Economics	10.110 and 10.210 or 10.112 and 10.212 or 10.114 and 10.214 or 10.116 and 10.216 or 10.117 and 10.217 or 10.218 and 10.318	10.135 and 10.235	3
Organizational Behavior/Policy	10.220 or 10.322 or 10.324 or 10.400	10.221	3
Introductory Taxation (under review)	16.450	16.912 and 16.913	3
			45

B.C.I.T. does not offer an Advanced Financial Accounting Course.

Students who are interested in the Institute of Chartered Accountants of British Columbia should contact: The Registrar, 562 Burrard Street, Vancouver, B.C., V6C 2K8.

THE INSTITUTE OF CHARTERED SECRETARIES AND ADMINISTRATORS

The Institute of Chartered Secretaries and Administrators (ICSA) is the leading professional body of administration executives recognized in the English-speaking world, with a global membership of over 50,000.

Members hold positions such as Chief Administrative Officer, Provincial Deputy Minister, Chief Executive Officer or Secretary of a corporation/company and other major public or private bodies.

BCIT is pleased to co-operate with this successful management oriented organization in enroling students to follow a program leading to BCIT certification and, subsequently, through completion of further ICSA directed studies, to attain a worthwhile professional designation.

There are two levels of membership — Associate and Fellow Members are entitled to describe themselves as Chartered Secretaries and to use the designation ACIS or FCIS. To qualify as a member it is mandatory to pass prescribed examinations, to have appropriate practical experience and to be acceptable to ICSA.

Suitable courses for the ICSA Business/Federal/Provincial/Municipal Programs are as follows:

Management Concepts (All Programs)	BCIT Course Numbers
1. Principles of Economics	10.135
2. Principles of Law	10.360
3. Principles of Administration	10.131/232
4. Principles of Accounting	16.140/240
5. Communication	31.902
6. Statistics	22.935

Business Administration Program

Module A (both subjects to be passed)	
7. Financial Management Accounting	16.347/447 & 16.443
8. Corporation Law	ICSA
Module B (two subjects to be passed)	
9. Taxation	16.912/913
10. Business Finance	16.361/461
11. Law for the Administrator	10.460
Module C (two subjects to be passed)	
12. Management of Human Resources	10.221/321
13. Economic Policies and Problems	10.235
14. Management Techniques and Services	10.908
Module D (both subjects to be passed)	
15. Meetings — Law and Procedure	ICSA
16. Corporate Secretarial Practice	ICSA

Federal/Provincial Government Program

Module A (both subjects to be passed)	
7. Financial Management and Accounting	16.347/447 & 16.443
8. Public Finance	16.350
Module B (two subjects to be passed)	
9. Canadian Government	10.340/440
10. Canadian Public Administration	ICSA
11. Law for the Administrator	10.460
Module C (two subjects to be passed)	
12. Management of Human Resources	10.221/321
13. Economic Policies and Problems	10.235
14. Management Techniques and Services	10.908
Module D (both subjects to be passed)	
15. Meetings — Law and Procedure	ICSA
16. Corporate Secretarial Practice	ICSA

Municipal and Other Local Government Programs

Module A (both subjects to be passed)	
7. Local Government Finance Accounting	ICSA
8. Law of Local Government	10.957
Module B (two subjects to be passed)	
9. Canadian Government	10.340/440
10. Canadian Public Administration	ICSA
11. Law of Local Government 2	10.957
Module C (two subjects to be passed)	
12. Management of Human Resources	10.221/321
13. Economic Policies and Problems	10.235
14. Management Techniques and Services	10.908
Module D (both subjects to be passed)	
15. Municipal Government Meetings	ICSA
16. Municipal Secretarial Practice	ICSA

Note for Qualified Mature Students: For mature students with appropriate qualifications ICSA will be offering a "Professional Administrator" designation, subject to individual requirements.

ICSA: These programs are presently only directly available through ICSA National Head Office.

Students who want additional information on the ICSA program should contact: The Institute of Chartered Secretaries and Administrators, Suite #1 - 650 Clyde Avenue, West Vancouver, B.C. V7T 1E2. Telephone: 922-0535.

THE MUNICIPAL ADMINISTRATION EDUCATION COUNCIL OF B.C.

The Municipal Administration Education Council is authorized by resolution of the Municipal Officers' Association of British Columbia and its membership includes six representatives from the Municipal Officers' Association, one representative from the Union of British Columbia Municipalities, one representative from the Board of Examiners and one representative from the Ministry of Municipal Affairs.

The members of the Municipal Administration Education Council also form an Advisory Council to the Board of Examiners to advise on the qualifications requisite to the granting of certificates; the sufficiency of courses of instruction provided by professional and other organizations; equivalencies between existing courses of instruction; the adequacy of various seminars, workshops and orientation courses; and the dissemination of public information formulated for the purpose of encouraging suitable persons to train for a career in municipal service.

The Board of Examiners is established under the Municipal Act and its main function is the granting of certificates of proficiency in the areas of administration and finance to persons in municipal employment. Requirements for certification are the attainment of a recognized level of academic qualification together with the appropriate amount of work experience in the local government field.

BCIT is recognized by the Board of Examiners as one of the educational institutions offering courses and certificates which are acceptable to meet the academic qualifications required for certification.

Course requirements for a Business Certificate in Public Administration Municipal Option, are detailed in the Certificate Program section of this calendar.

For further information contact (Mrs.) Joan E. Stephens, Secretary, Municipal Administration Education Council, c/o Ministry of Municipal Affairs, 747 Fort Street, Victoria, British Columbia V8W 3E1 or telephone 387-5925.

PURCHASING MANAGEMENT ASSOCIATION OF CANADA

The Purchasing Management Association of Canada offers a wide variety of activities and services to purchasing personnel and to those interested in entering this challenging profession.

One of these is the widely-recognized professional development program. It has been designed to meet the changing structure of the business world and job demands as well as increase knowledge about the supply field and attainment of personal objectives within it.

The following steps are required to achieve the Professional Purchaser Diploma:

1. Registration with PMAC before December 31, 1987
2. Principles of Buying - PM 300
3. Principles of Production and Inventory Management - PM 100
4. Principles of Traffic and Transportation - PM 200
5. Twelve PMAC seminar credits
6. Management studies courses — unversity level only
7. Six years of practical experience
8. Board of Examiners interview
9. Professional Purchaser Diploma

BCIT cooperates with the B.C. District of the PMAC in presenting the courses required to complete Steps 2, 3 and 4.

For information on PMAC Telephone (605) 879-7325 or write to: Chairman, Professional Development, Purchasing Management Assoc. of Canada, 206 - 604 West Broadway, Vancouver, B.C. V5Z 1G4. PMAC information is also available from Larry Berglund, 462-7111; Jim Matterson, 985-3827; Collin Ashton, 888-1515.

THE SOCIETY OF MANAGEMENT ACCOUNTANTS OF BRITISH COLUMBIA

The Society of Management Accountants of British Columbia has advised the British Columbia Institute of Technology that it will accept certain BCIT courses as meeting its course requirements, providing a student meets the other prerequisites and requirements and is acceptable to the Society of Management Accountants.

Students interested in the Registered Industrial Accountant (RIA) program should contact the Society at (604) 687-5091, or write to them at 1575-650 West Georgia Street, Vancouver, B.C. V6B 4W7.

The following courses have been accepted for transfer credit:

RIA Courses	BCIT Full-time	BCIT Continuing Education
LEVEL I		
111 Introductory Accounting	16.140/240	16.140/240 or 16.918
122 Commercial Law	10.380/480 or 10.384/484 or 10.387/487	10.360/460
123 Organizational Behavior	10.380/480 or 10.100/200/300 or 10.102/306 or 10.102/322 or 10.104/204 or 10.324 or 18.316/416 or 10.107/467 or 10.228/328	10.131/232 or 10.221/321 10.285/438
LEVEL II		
212 Economics	10.110/210 or 10.114/214 or 10.116/216 or 10.117/217 or 10.218/318	10.135/235
213 Communications & Case Analysis	31.110/210 or 31.114/214 or 31.116/216 or 31.118/218 or 31.120/220 or 31.122/222	31.910 and 912 or 31.101/201
229 Intermediate Accounting 1	16.347	16.347 or 16.926
232 Quantitative Methods 1	22.210 or 22.214 or 22.216 or 22.118/318 or 22.220 or 22.200	22.935
LEVEL III		
314 Data Processing	14.050/052 or 14.160/260 or 14.050/052 or 14.050 and 22.202	14.050 and (14.052 or 902 or 909 or 919 or 503 or 505 or 515 or 927 or 928)
331 Cost and Management Accounting	16.341/441	16.341/441
333 Quantitative Methods II	22.300/400	22.963
339 Intermediate Accounting II	16.447	16.447 or 16.926
LEVEL IV		
424 Taxation	16.450	16.912/913
442 Financial Management	16.362/462 or 16.361/461	16.361/461
451 Accounting Information Systems	no equivalent	no equivalent
452 Internal Auditing	no equivalent	no equivalent
LEVEL V		
541 Advanced Management Accounting	no equivalent	no equivalent
543 Advanced Financial Accounting	no equivalent	no equivalent
553 Management: Processes and Problems	no equivalent	no equivalent

THE TRUST COMPANIES INSTITUTE

The Institute is concerned with upgrading and updating professional competence in all areas of activities carried on within the trust industry.

Comprehensive descriptions of educational programs leading to accreditation in various specialties within the industry are available in the calendar of the Trust Companies Institute of Canada.

The Institute will recognize Continuing Education courses offered at BCIT but candidates are encouraged to work with an institute representative in selecting an appropriate program of courses.

A Business Education Certificate is available through the Trust Companies Institute. Candidates may begin by registering their intent to participate in the program with the institute. The registration form must be accompanied by a $25.00 processing fee.

Candidates who have completed post-secondary education may be eligible for advanced standing in the program.

Candidates may enrol in courses that are recognized by the institute and offered by an approved community college or university.

Candidates who have completed the program requirements may make formal application for accreditation. The application form must be accompanied by a $25.00 processing fee for those candidates who have registered.

The following courses have been accepted for transfer credit:

TRUST COMPANIES INSTITUTE SUBJECTS	BCIT CONTINUING EDUCATION EQUIVALENTS	
COMPULSORY SUBJECTS		
Principles of Accounting	16.904	Accounting for the Manager or
	16.140	Accounting 1
Business Communications	31.910	Business and Technical Correspondence or
	31.902	Basic Business and Technical Communication or
	31.912	Business Report Writing or
	31.920	Business and Technical Report Writing — Advanced
Interpersonal Communication	20.502/602	Public Speaking and Oral Communication 1 & 2
Business Law	10.360/460	Business Law 1 & 2
Principles of Economics	10.135/235	Economics 1 — Micro Economics 2 — Macro
OPTIONAL SUBJECTS		
Money and Banking		Not presently available through Part-time but is under development
Principles of Business Administration	10.131	Management 1
Organizational Behavior	10.321	Organizational Behavior 2
Principles of Marketing	20.914	General Marketing or
	20.180/280	Marketing 1 & 2
Management Accounting	16.443	Management Accounting
Business Statistics	22.935	Statistics for Business & Industry
Principles of Psychology	10.221	Organizational Behavior 1
Financial Accounting	16.347	Financial
	16.240	Accounting or Accounting 2
Business Mathematics	22.100	Basic Mathematics of Finance
Business & Government	10.240	Government & Business
Personnel Generalist	10.910	Personnel Management
Taxation	16.912	Taxation 1

Other courses not listed above which are appropriate to the various programs of studies on pages 46 & 47 of the 1978-80 Trust Companies Institute Calendar.

10.325	Labor Relations 1
16.361	Business Finance 1
31.911	Business and Technical Report Writing
31.920	Business and Technical Report Writing — Advanced

Further information can be obtained by contacting either Joanne LaPlante, Administrator Business Education Program Trust Companies Institute at Ste. 400, 11 Adelaide St. West, Toronto, Ontario, M5H 1L9 416-364-1210 or any Branch Manager of a Member Company in the Trust Companies Association of Canada.

Engineering

THE SOCIETY OF ENGINEERING TECHNOLOGISTS OF BRITISH COLUMBIA (SETBC)

Most engineering technology courses offered through the B.C. Institute of Technology, Division of Continuing Education and Industry Services, are recognized for credit toward certification with the society. The society is currently completing a full and formal accreditation of BCIT's day programs and, once complete, will re-assess all continuing education courses. When each course is re-assessed and found to be acceptable, the course description will contain the notation "accredited by the Society of Engineering Technologists of B.C." If you are unsure as to whether you will gain credit toward certification and want to ensure you are embarking on an acceptable program, please contact the society office.

SETBC is a professional society registering and certifying technicians and technologists in the fields of agrology, architecture, engineering, forest resources and surveying. Certification with the society is primarily dependent on academic qualifications in accordance with national standards, however, credit is granted for extensive experience. A minimum of two years technological experience is required for certification. Registered Certified Engineering Technicians and Certified Engineering Technologists are recognized in industry by the designation "CET" after their names.

Until the end of 1977, SETBC made certification at three levels; including that of senior engineering technician. Since January 1, 1978 the society certifies only at the technician and technologist levels.

ACADEMICS REQUIRED FOR TECHNICIAN CERTIFICATION

The academic requirement at the technician level is equivalent to: 12 SETBC exams or 850 hours or 26 BCIT units.

ACADEMICS REQUIRED FOR TECHNOLOGIST CERTIFICATION

The academic requirement at the technologist level is a Diploma of Technology, or equivalent.

ASSOCIATE MEMBERSHIP

Persons not qualified as technicians or technologists are encouraged to join SETBC as associate members.

In evaluating an application for membership and certification the SETBC Board of Examiners, which comprises Certified Engineering Technologists, Professional Engineers, Professional Agrologists, Professional Foresters and others, takes into consideration career training other than that received at BCIT, including foreign qualifications.

The Board of Examiners is responsible for recommending certification levels and providing the applicant with the program of studies required to progress to the next certification level. The board therefore recommends that to ensure full credit toward certification, an application be submitted to the society before beginning a program of studies.

Please note that the processing of applications generally takes four months.

The society is incorporated under the Societies Act of British Columbia. Briefly, its objectives are:

- To provide formal recognition in the form of certification for engineering technologists and engineering technicians in B.C.
- To provide a controlled, qualified, and responsible body of certified engineering technologists and engineering technicians, thus obtaining recognition of the profession in industry.
- To act as the vehicle whereby its members may increase their knowledge and skills in appropriate technologies.
- To offer placement and education services, technical literature, special group insurance and other group benefits inherent in all such organizations.

In accordance with these general objectives, the society actively represents technicians and technologists in B.C. Its activities include the promotion of technological programs offered by BCIT's Division of Continuing Education and Industry Services and community colleges; the presentation of briefs leading to the development of directed study courses in technology; the development of an accreditation program to aid in the maintenance of the highest educational standard; involvement with the Anik 'B' Satellite project wherein the Society is working with industry to provide short technical seminars throughout the province; and, most recently, working toward appropriate recognition in law for its members.

Persons interested in the society should write to: Director of Membership Services, The Society of Engineering Technologists of the Province of British Columbia, 203 - 4400 Dominion Street, Burnaby, B.C., V5G 4G3, or telephone (604) 433-0548.

THE INSTITUTE OF NAVAL ARCHITECTS OF BRITISH COLUMBIA

The Institute of Naval Architects of British Columbia has made arrangements with BCIT to enable students to take courses leading towards the requirements for membership in the Institute.

The Institute of Naval Architects of British Columbia was formed in 1975 as a controlling agency for the organization and development of the profession of Naval Architecture.

Prospective students who are now employed in the ship building industry are advised to register with the Institute as student members. Interested students may contact the Institute by mail at 2206 West 33rd Avenue, Vancouver, B.C., V6M 1C2; or by phone at 261-9102.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF BRITISH COLUMBIA

The Association of Professional Engineers of British Columbia has a formal examination system leading to registration for students who, after careful consideration and investigation, find they cannot attend university. It should be stressed that this program of association examinations is not an easy way to qualify academically as a professional engineer. The program comprises about 26 examinations, which cover approximately the same material as a four-year engineering course at a university. To complete the whole program a candidate would require years of home study.

The association does not offer courses to prepare candidates for these examinations. Some courses offered at the British Columbia Institute of Technology provide one method of assisting students to prepare for the examinations. However, the student should note that the diploma courses at BCIT were not designed specifically for this purpose. A student embarking on the association's examination program should seek advice from the Association of Professional Engineers to ensure that a course taken at BCIT will provide a reasonable amount of assistance in studying for a course in the association's syllabus. The syllabus contains course outlines so that comparison of content may be made with the content of BCIT courses. For further information contact: The Association of Professional Engineers of British Columbia, 2210 West 12th Avenue, Vancouver, B.C., V6K 2N6, or telephone (604) 736-9808.

FUNDAMENTAL EXAMINATION TUTORIALS

Engineering and Core Continuing Education is prepared to offer tutorials for fundamental examination candidates if sufficient demand is shown.

1 Calculus
2 Vector Analysis and Differential Equations
3 Linear Algebra and Numerical Analysis
4 Computer Science
5 Probability and Statistics
6 Physics
7 Chemistry
8 Statics and Dynamics
9 Mechanics of Fluids
10 Thermodynamics
11 Engineering Materials
12 Theory of Circuits and Power Engineering
13 Strength of Materials
14 Organic Chemistry

Interested people must indicate their intention to take specific tutorials by sending a $50 commitment fee per tutorial **prior to July 15, 1983.** This fee is fully refundable if insufficient demand is shown. Fees are payable in full by **August 12, 1983.** They are estimated to range between $200 and $400 depending on tutorial length and number of students attending.

For further information contact
Program Assistant, Engineering and Core
Telephone: 434-5734 Local 521, or
Program Consultant, Engineering and Core
Telephone: 434-5734 Local 467

ASSOCIATION OF BRITISH COLUMBIA PROFESSIONAL FORESTERS

The Association of British Columbia Professional Foresters was founded in 1947 under enabling legislation entitled the British Columbia Foresters Act, April 3, 1947. The act was revised subsequently and the association now operates under authority of the British Columbia Professional Foresters Act — 1970 and the association's by-laws which were amended in January, 1975 and again in January, 1977.

Some of the requirements for registration include appropriate academic qualifications, a minimum of four years of acceptable forestry experience in the opinion of the Board of Examiners, Canadian citizenship or permanent resident status and references from at least one Registered Professional Forester (RPF) and two other references as sponsoring foresters. All applicants for registration are required to write a special examination. Pupils are also required to submit a "Professional Report".

Briefly, the objectives of the association are as follows:

- To ensure that the forests of British Columbia are managed by professionally qualified foresters.
- To promote those policies of integrated use of forest land for timber production, recreation, wildlife and water management which ultimately provide the greatest social and economic returns to society.
- To advise the public and government of implications of policies affecting uses of forest land.

To date, the association's objectives have been implemented in various ways, including the submission of recommendations to appropriate authorities on numerous topics such as inventories, protection, timber management, water management, fish and wildlife management, range management, forest research, forest taxation, and forest education.

Arrangements exist whereby students may prepare themselves to become professional foresters, in part through courses at BCIT. Interested students are advised to contact the Association of B.C. Professional Foresters, Suite 406 - 837 West Hastings Street, Vancouver, B.C., V6C 1B6, or telephone (604) 687-8027.

THE ARCHITECTURAL INSTITUTE OF BRITISH COLUMBIA

The Architectural Institute of British Columbia, in association with the Royal Architectural Institute of Canada, has an apprenticeship system generally referred to as the Syllabus of Studies Program.

BCIT day school graduates receive credit for a number of syllabus courses. The program will take a BCIT graduate from 5 to 8 years to complete. Entry to the program is restricted to applicants in the employ of a registered architect.

The program is generally completed by self-study, however syllabus students may elect to take BCIT courses through the Division of Continuing Education and Industry Services for credit towards syllabus subjects.

Before signing for any subjects at BCIT, you must obtain approval of prospective credit from: The Registrar, Royal Architectural Institute of Canada, Syllabus Program. The Registrar may be contacted at The Architectural Institute of British Columbia, 3rd Floor, 1134 Homer St., Vancouver, B.C. V6B 2X6 (604) 669-9830.

THE CANADIAN INSTITUTE OF QUANTITY SURVEYORS

The Canadian Institute of Quantity Surveyors through the Quantity Surveyors Society of B.C. has an academic program comprising 22 separate subjects. Credit may be obtained as follows:

1. Graduates from the full-time day school Building Technology (Economics Major) at BCIT receive credit for 13 of the 22 subjects. Candidates for these 13 subjects may arrange to attend BCIT day school if there is space in the program.
2. Credit will be granted for seven of the remaining nine subjects for successful completion of evening courses through the Division of Continuing Education and Industry Services.
3. Preparatory courses for writing the CIQS final examination for the remaining two subjects are also held in the evening by the Division of Continuing Education and Industry Services.

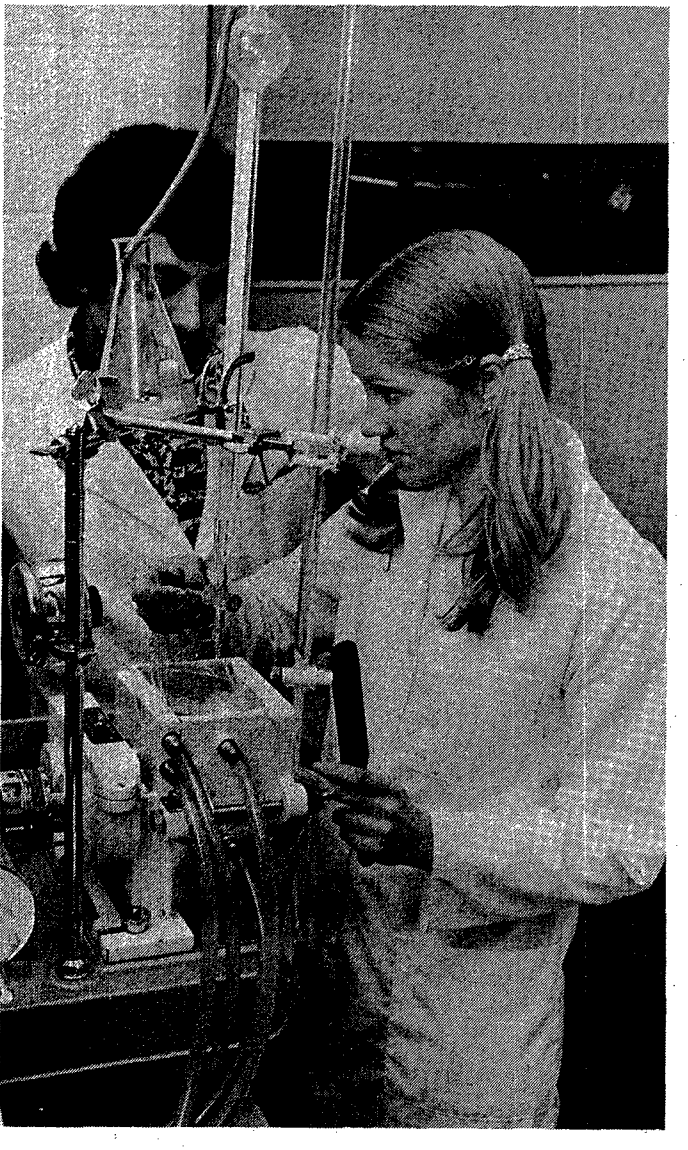
Before signing for any subjects at BCIT, you must obtain approval of prospective credit from: The Chairman, Education Committee, Quantity Surveyors Society of B.C., 1250 Homer Street, Vancouver, B.C., V6B 2Y5, or telephone (604) 681-0296.

THE CORPORATION OF LAND SURVEYORS OF THE PROVINCE OF BRITISH COLUMBIA

The Corporation of Land Surveyors of British Columbia is the controlling agency for professional land surveyors within the province and has a board of examiners that sets formal examinations for entry into the profession.

Some of the credit courses at BCIT are designed to enable candidates to take these examinations. In addition non-credit tutorials are offered as demand warrants.

Enquiries about B.C. land surveyors examinations and courses from: The Corporation of Land Surveyors of B.C., 101 - 655 Douglas Street, Victoria, B.C., V8V 2P9, or telephone (604) 382-4323.



Health

BRITISH COLUMBIA HEALTH ASSOCIATION

B.C.H.A. is a non-profit organization representing all public hospitals in B.C., a number of major health care agencies and Long Term Care facilities.

B.C.H.A.'s primary purpose is to ensure quality in the delivery of health care. To achieve this purpose, it maintains liaison with other health care organizations and with the provincial government. Through its committees and task forces, it collects information and provides advice about the educational needs of the health care workers.

B.C.H.A. works closely with BCIT through its sponsorship of the Health Care Management Program (Level 1) and its participation in advisory committees.

Persons interested in the society should write to:

Information Officer, B.C.H.A., 440 Cambie Street, Vancouver, B.C. V6B 2N6

BRITISH COLUMBIA ASSOCIATION OF MEDICAL RADIATION TECHNOLOGISTS (B.C.A.M.R.T)

The B.C.A.M.R.T. is the provincial body of the Canadian Association of Medical Radiation Technologists.

Among its prime concerns are the basic and continuing education of its members.

BCIT is pleased to cooperate with the association through joint offering of courses.

For further information contact:

President
B.C.A.M.R.T., P.O. Box 2155, New Westminster, B.C. V3L 5A5.

THE REGISTERED NURSES' ASSOCIATION OF BRITISH COLUMBIA

The Registered Nurses' Association of B.C. is a professional organization of 27,000 registered nurses working in all areas of the B.C. Health Care System. Empowered by the Nurses (Registered) Act, the Association registers nurses, evaluates and grants approval of nursing education programs, and when necessary, reviews the adequacy of individual nurse performance. The Association is not a union, but does provide a wide range of member services directed at the Association's primary objectives: to further the standard of nursing practise and to ensure efficient service to the people of British Columbia.

For further information contact The Registered Nurses' Association of British Columbia, 2855 Arbutus Street, Vancouver, B.C., V6J 3Y8, or call 736-7331.

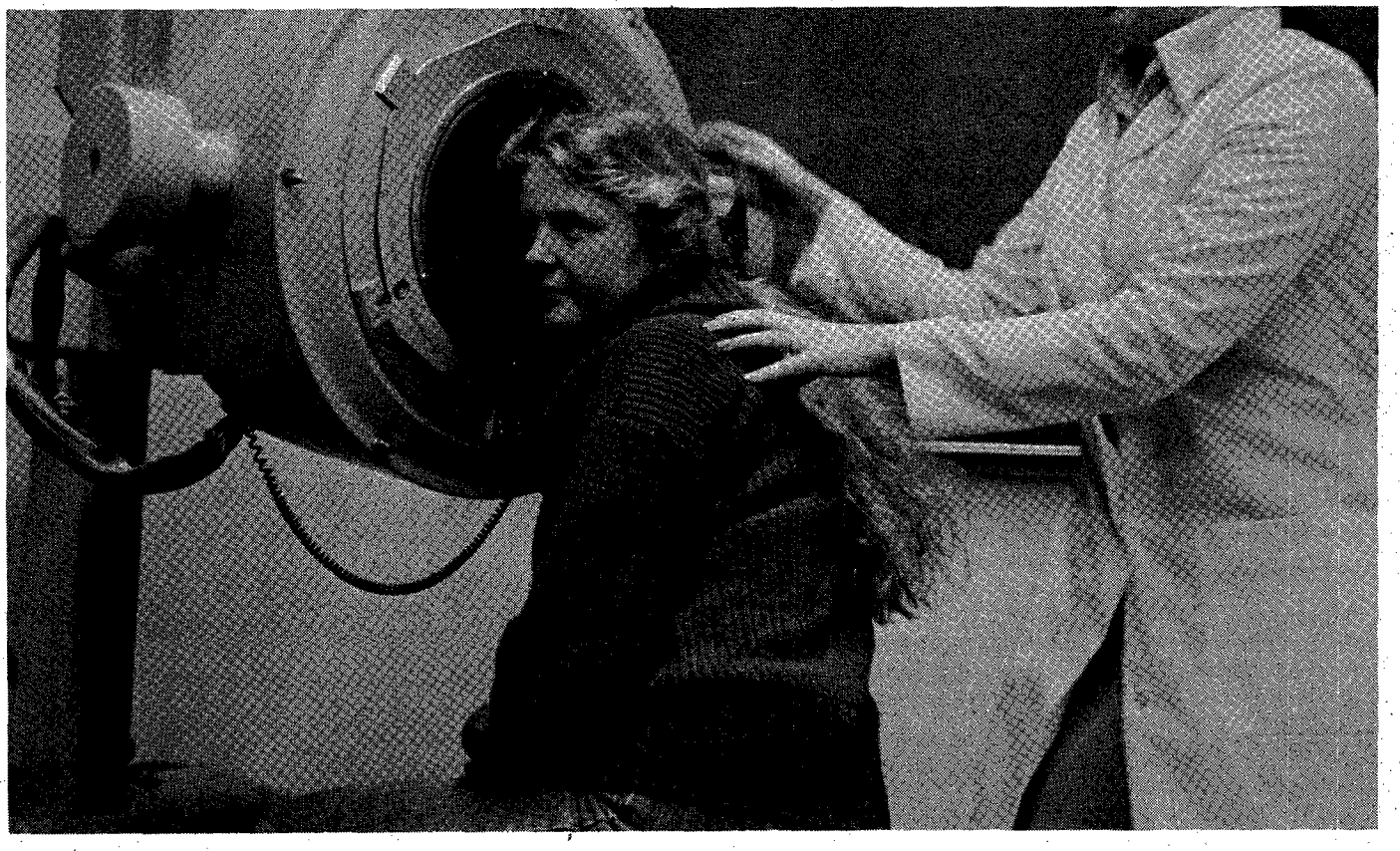
CANADIAN COLLEGE OF HEALTH SERVICE EXECUTIVES

Canadian College of Health Service Executives is a national professional association for senior health service managers and health executives in hospitals, nursing homes, extended care facilities, community clinics and other health related associations.

The purpose of the College is to improve the health of Canadians through improved management of health services. The College is actively involved with the professional development of health executives.

Persons interested in the association should write to:

Canadian College of Health Service Executives, 440 Cambie Street, Vancouver, B.C. V6B 2N5



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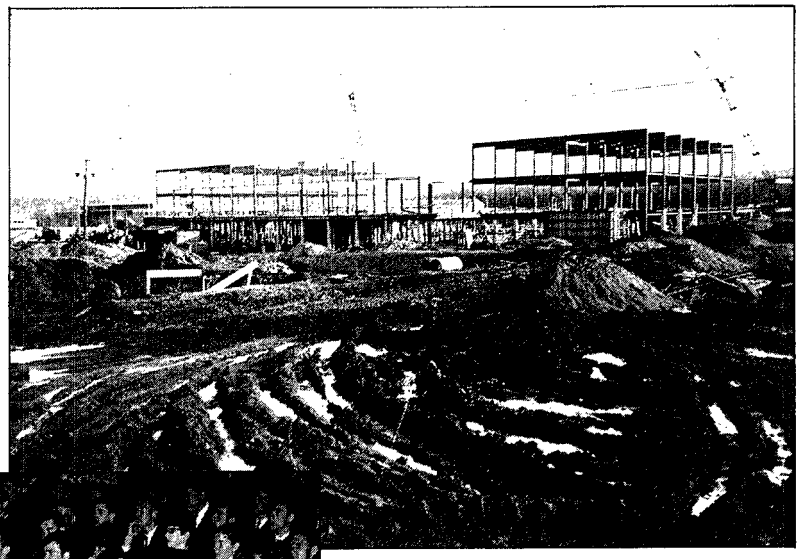

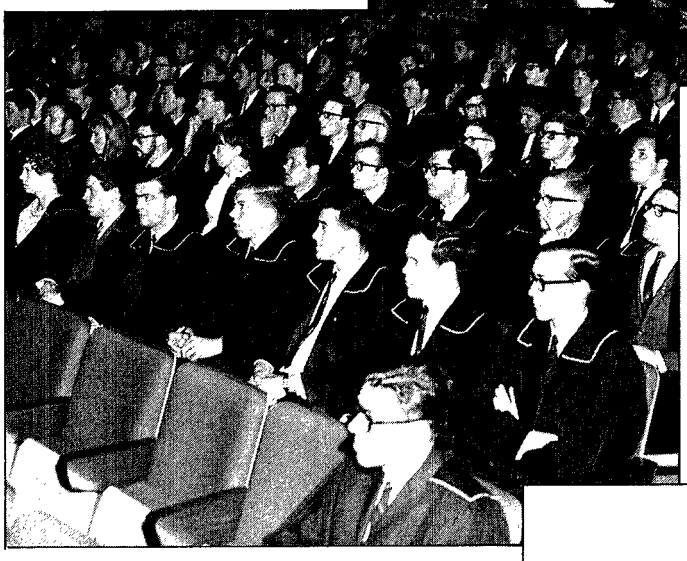

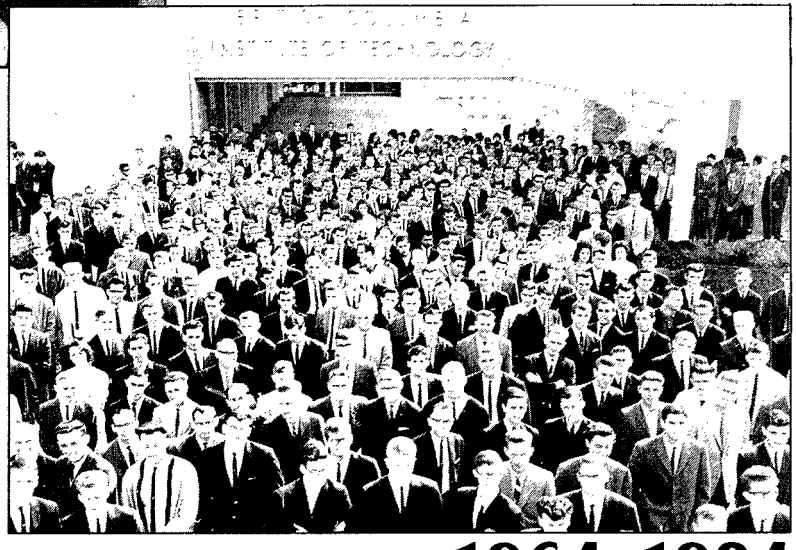

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BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

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