BCIT

75/76

ADVANCED TECHNICAL PROGRAMMES FOR PART-TIME STUDENTS

CAREER PROGRAMMES DIVISION
BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

FOR YOUR INFORMATION

1. Do not fail to read the "General Information" section at the front of the Calendar. This is your official source of information about Career Programme policies.

2. The Table of Contents and course and programme descriptions are found on pages 3 to 12 at the front of the Calendar.

3. Note that the Calendar is divided into three sections—Business, Engineering, and Health (in that order).

4. Courses are offered in three different terms beginning in September, January, and April.

5. We make every effort to accommodate every student applicant.

6. You are encouraged to register early by mail or in person. In every instance, fees must accompany the application form before it will be processed.

7. For information on course fees, please *see* page 15.

8. An Application for Certificate form (not to be confused with the above) is found on pages 243–244.

BCIT

3700 Willingdon Avenue
Burnaby, B.C.
V5G 3H2
Telephone: (604) 434-5722

Administered by

THE BOARD OF GOVERNORS
of the
BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

G. A. THOM, B.COMM., M.B.A., M.ED., *Principal*

D. J. SVETIC, B.A.SC., P.ENG., *Co-ordinator, Career Programmes*

TABLE OF CONTENTS

Courses in Programmes

BUSINESS MANAGEMENT DIVISION

ADMINISTRATIVE MANAGEMENT

BROADCAST COMMUNICATIONS TECHNOLOGY

COMPUTER PROGRAMMING TECHNOLOGY

FINANCIAL MANAGEMENT TECHNOLOGY

HOSPITALITY INDUSTRY

EXECUTIVE HOUSEKEEPERS PROGRAMME

MARKETING MANAGEMENT TECHNOLOGY

OPERATIONS MANAGEMENT TECHNOLOGY

COURSES IN ENGLISH

ENGINEERING DIVISION

INSTRUMENTATION AND SYSTEMS TECHNOLOGY

LANDSCAPE TECHNOLOGY

MECHANICAL TECHNOLOGY

MINING TECHNOLOGY

NATURAL GAS AND PETROLEUM TECHNOLOGY

SURVEYING TECHNOLOGY

MATHEMATICS DEPARTMENT

THE ROLE OF THE CAREER PROGRAMMES DIVISION IN BCIT

Through the Career Programmes Division, BCIT provides advanced technical education for part-time students.

The philosophy of continuing education and the need for keeping pace with technological change have brought an ever-increasing awareness of BCIT services to members of the work force.

People of all ages and educational background are taking advantage of the opportunity to improve their knowledge and skills as part-time students in evening classes and on Saturday mornings. They find that education at the adult level, BCIT-style, is satisfying and rewarding and clearly attuned to the world of work.

Despite the pressures of growth, we are constantly striving to present a high quality of technical courses under the guidance of capable instructors. New courses are added to keep pace with student needs and technological advances and we welcome advice and guidance from students and the business community.

Students wishing to take advantage of our counselling service in planning their career development are welcomed at any time of the year.

We hope you find the certificate programmes and course content in this calendar meet your needs and that we will have the pleasure and satisfaction of serving you.

GENERAL INFORMATION

1. The Academic Year

The academic year, commencing July 1, for Career Programmes, consists of three terms:

(*a*) The Fall Term—September to December (Term I).
(*b*) The Winter Term—January to April (Term II).
(*c*) The Spring Term—April to June (Term III).

Courses, however, may begin at any time.

2. Office Hours

All general inquiries about Career Programmes evening classes should be made to the Career Programmes office between the following hours:

Until September 5—	
Monday to Friday	8.30 a.m. to 4.30 p.m.
September 8 to June 25—	
Monday to Thursday	8.30 a.m. to 10 p.m.
Friday	8.30 a.m. to 4.30 p.m.
Saturday	8.30 a.m. to 12.30 p.m.

3. Counselling

Career Programmes invites your inquiries for information, assistance, and counselling relating to the programme offerings of the Division. Phone 434-5722 (local 204/205) or drop in to the Career Programmes office during the above hours.

A full-time Programme Consultant (Counsellor) is on staff and is anxious to be of assistance to students and prospective students to plan a program of studies to meet individual needs. Students are encouraged to seek the services of the Programme Consultant at any time during the year and may phone the Career Programmes Office for an appointment.

There are counselling nights during the week prior to registration for each of the three terms. Representatives from the various technologies are available at this time to assist students in interpreting course content, course sequence, etc., within their various technologies. Other counsellors are available to answer specific questions on Career Programme policies, etc.

In-depth counselling is not possible on these nights, but this indidivual service may be requested at any time as noted above.

Watch for details about counselling nights in the Vancouver papers prior to each term.

4. Admission

In general, courses are designed at a level which assumes a student has completed Grade XII. In addition, there are certain

specific prerequisites or special conditions for some of the courses. They are described with the courses in the Calendar.

A mature student may be accepted without general prerequisites, provided the student and the instructor consider that the student has a reasonable chance to complete a specific course or programme successfully.

Prospective students are advised to submit applications well in advance of commencement of classes. Wherever possible, all qualified students will be accepted, but where enrolment is limited, priority for admission will be based generally on the date of application. Failure of a student to present himself on the first night of classes or otherwise advise the BCIT Career Programmes Office may cause a student to forefeit his seat in a class.

Further, BCIT reserves the right to establish other special priority criteria for special situations.

5a. Registration and Payment of Fees

Students should register by completing the registration form which is found at the back of the Career Programmes calendar and mailing this to the Career Programmes Office.

Fees must accompany the registration form. Make fees payable to British Columbia Institute of Technology. Applications not accompanied by fee payment will not be processed.

Mailing an application and payment of fees does not ensure a seat in a class.

Students may have their company invoiced for their fees where they have an arrangement with their company to pay their fees.

Students must register and pay fees for the second term of a course by November 14, 1975.

5b. Course Fees

At the time of this printing, the fees are currently under review. There will be a schedule of fees published in the local newspapers.

CAREER PROGRAMMES/FEES
36 HOUR COURSE $ 50.00
54 HOUR COURSE $ 75.00
72 HOUR COURSE $100.00
90 HOUR COURSE $125.00
MAXIMUM $300.00
OTHERS- $1.40/HOUR PRO RATA

6. Late Registrants

Students should watch for registration deadlines (*see* Calendar of Events) and should register as early as possible.

Where possible, we will accept late registrations when there is a seat in the class.

7. Cancellations and Restricted Enrolment

The Institute will make every effort to offer all the courses, as listed in the Calendar, to all qualified applicants. Nevertheless, if at any time it should become necessary to do so, the Institute reserves the right to limit enrolment, to select candidates, to cancel courses, to combine classes, or to alter times of instruction without prior notice.

8. Cancellations of Courses

Courses which have 15 or more students are normally approved to continue.

Courses with fewer than 15 students may be given special consideration. Some grounds for special consideration are whether it is an advanced course that follows one or more preliminary courses or whether it is a course which is a continuation of a course from the previous term.

In some cases where a course does not meet the above criteria, and where the students are keen to continue, this course may be authorized for fewer weeks but at the same fee.

9. Refunds

Should a course be cancelled, fees in full will be refunded or transferred to another course as requested by the student.

Students who withdraw within two weeks after the first night of class will be given a full refund. The application for a refund must be in the Bursar's office prior to the third session of the course in question if it is a one-night-per-week course and prior to the fifth session if it is a two-night-per-week course.

IN EVERY INSTANCE, BEFORE A REFUND WILL BE ISSUED, A STUDENT MUST HAVE COMPLETED AN "APPLICATION FOR REFUND" FORM WHICH IS OBTAINABLE FROM THE BURSAR'S OFFICE.

10. (a) Parking

Free parking is available for students in the parking-lot east of the main building. A female student travelling alone can get a parking permit from the Career Programmes Office, which entitles

her to park in front of the school on a first-come, first-serve basis. There is special parking for handicapped students as well. Details are available by phoning the Career Programmes Office at 434-5722, local 204/205.

STUDENTS ARE NOT TO PARK IN THE PARKING-LOT AT THE FRONT OF THE B.C. VOCATIONAL SCHOOL.

(b) Cafeteria

A hot meal service is available in the Food Services Building between the hours of 5 p.m. and 6 p.m. on each evening during the sessions. A snack counter in the Student Association Centre will be open from Monday to Friday from 10 a.m. to 7 p.m.

(c) Library

The library facilities will be available to all registered evening class students until 11 p.m. during sessions.

(d) Bookstore

Whenever available, textbooks and supplies may be purchased at the Bookstore, which is located in the Library Building. Textbooks also may be obtained by arrangement with the Career Programmes Office when the Bookstore is no longer open in the evenings.

Bookstore hours are 7.30 a.m. to 4.20 p.m. During busy periods the Bookstore opens again for a couple of hours in the evening.

(e) Employment Service

Canada Manpower has an employment office on campus to assist in the placement of graduates from BCIT. Their services are available to part-time students. Those who wish to register should contact the above office during the day. Notices of employment are also placed on the bulletin board outside Room 222.

11. Examinations

(*a*) *Policy on examinations*—As a general rule there will be assessments made of students enrolled in Career Programmes classes at BCIT. Assessments will normally be based on mid-term examinations and a final examination, plus projects or other oral and written work. No rigid form of evaluation is prescribed except to say that it should provide some measure of the students' comprehension and application of the body of knowledge learned. It should also distinguish between superior and passing students.

Students are required to take the examinations for each course at a time set by the Institute.

In order to be allowed to write examinations, a student must have (1) satisfactory attendance and (2) satisfactorily completed work assignments during the session.

Students unable to write examinations due to special circumstances should contact the Co-ordinator, Career Programmes.

(*b*) *Statement of marks*—It is the policy of Career Programmes to issue a statement of marks to every Career Programmes student who completes a course.

(*c*) *Audit*—A student may audit courses. He will pay the fees prescribed for the course and he will receive a transcript with "Audit" indicated.

(*d*) *External examinations*—(1) We will attempt to co-operate with any Career Programmes student who cannot write our examinations because of absence from the city, by allowing that student to write the examination at a set time in another centre under an invigilator acceptable to us. (2) It is understood that the student would be responsible to make all arrangements to obtain a place for his examination and to obtain the services of an invigilator and, further, to pay all costs, if any, that are involved.

12. Purchase of Textbooks

Most courses require that a student purchase a textbook. This generally costs $10 to $15 above the course fee.

13. Transcripts

A fee of $1 will be charged for each extra transcript and copies of marks.

14. Course Exemption

A student may be given permission to omit a course in a programme. In this case the student is not given credit for the course omitted, and he must substitute an elective or a specified course.

A student who is seeking course exemption must apply in writing to the Co-ordinator, Career Programmes.

15. Career Programmes Students Attending Day Classes

If a course is not available in the evening due to insufficient enrolment, then the Career Programmes student may seek permission to attend day classes in that course. To do this, a student must complete a Request to Take Day Courses at BCIT form, which involves getting the approval of the course Instructor, the department head, and the Co-ordinator of Career Programmes.

One condition of attending day classes is that there is room for the student, particularly in the laboratory sessions.

When permission to take the particular course(s) in question is granted, the student must then complete a Registration for Career

Programmes Courses form and pay the Career Programmes rates for the course, based on the number of classroom and laboratory hours.

16. Course Credit

The basic measure of course credit is a UNIT, which normally consists of three classroom hours per week for 12 weeks, a total of 36 hours.

A student who attends three hours per evening twice a week for 12 weeks would receive two units of credit if he is successful.

17. Challenge Credit

What It Is—Challenge credit is a means whereby students may acquire credit recognition for knowledge and skills gained through self-study and (or) work experience.

By challenging a course, the student claims he already has the knowledge and abilities to be learned from the course.

The student's abilities in the subject area challenged will be assessed by an evaluator through a written examination, an oral examination, a research paper, or other means as the evaluator sees fit.

A fee may be charged the student who is challenging a course.

Challenge credit is not considered as work completed at BCIT. If a student is successful, a "C" credit will be indicated on his transcript. If he is unsuccessful, nothing will be indicated.

Who May Challenge—A student may challenge a course in a Certificate Programme in which he is enrolled. Prior to challenge a student must have successfully completed at least one course at BCIT.

Only five (5) units of challenge credit will be allowed on each certificate programme.

How to Challenge—A student may challenge a course by completing an Application to Challenge a Course form and mailing it to

Co-ordinator of Career Programmes
Career Programmes Division
B.C. Institute of Technology
3700 Willingdon Avenue
Burnaby, B.C. V5G 3H2

18. Transfer Credit

Transfer credit is a means whereby students may acquire credit recognition for academic work completed at another recognized post-secondary institution.

The course work for which transfer credit is being requested must be related to the student's programme of studies here at BCIT.

(*a*) *Transfer from day classes*—A student transferring to evening classes from day classes will generally be granted credit for all courses successfully completed on withdrawal from day school. Students who fail one or more subjects in day programme are encouraged to consider Career Programmes as an alternative.

Any day student may become eligible for a Career Programmes Certificate on successful completion of at least one unit of work in Career Programmes courses after withdrawal from day classes, with the balance of his credits coming from day school.

(*b*) *Transfer credit from other recognized post-secondary institutions*—Students who have completed courses included in the Career Programmes programme of studies may submit documentation (*see* section 19) and generally credit will be granted toward a certificate for related course work at a similar standing and level. However, to be eligible for a certificate, a student normally must complete with BCIT 50 per cent of the course work required for that certificate.

(*c*) *Direct entry into advanced certificate programmes*—A student with advanced standing equivalent to a certificate level may be admitted into an advanced programme even though he has not completed the basic certificate at BCIT. Where a student does not have the preceding certificate equivalent, he may be required to make up his deficiency. He may also be given up to 50 per cent credit toward an advanced certificate through challenge credit and (or) transfer credit.

(*d*) *Conflict with accrediting societies*—Career Programmes will not give credit where there is a danger of being in conflict with accrediting societies such as the Society of Engineering Technologists. Where a student has considerable credit and where the amount of credit is not easily determined, the Co-ordinator, Career Programmes, may recommend that the student be accredited by such a society and that he will accept the ruling of that society.

19. Procedure for Application for Transfer Credit

Students must apply in writing to the Programme Consultant, Career Programmes, BCIT, and enclose

(*a*) copy of an official transcript;

(*b*) an official description of course completed, including the number of hours involved for each course (excerpts from the appropriate calendars, etc., would be acceptable);

(*c*) a statement as to which BCIT certificate programme the student wishes credit to be granted;

(*d*) a list of courses completed at BCIT.

20. Career Programmes Certificates and Diplomas

(*a*) *The Engineering Technician Certificate or Business Certificate*

(15 units)

A BCIT Engineering Technician Certificate or Business Certificate will be awarded on completion of a programme of 15 units.

Outlines of these certificate programmes in the various technologies are given throughout the Calendar.

For instance, on page 72, a 15-unit programme is outlined which will lead to a Business Certificate in Finance. However, as is noted at the top of the page, this is not a rigid programme and changes will be made to meet the students' particular needs.

(*b*) *The Senior Engineering Technician Certificate or Senior Business Certificate*

(30 units)

A Senior Engineering Technician Certificate or Senior Business Certificate will be awarded upon completion of an additional 15 units of study beyond the certificate programme outlined in (*a*).

In viewing the Calendar it may be seen that there are no program outlines for the senior certificate. Students are, therefore, advised to seek assistance in planning their programmes.

(*c*) *The National Diploma of Technology*

(at least 45 units)

A student with extensive related work experience and a good academic record may make application to a Special Review Board consisting of the Co-ordinator, Career Programmes, the Director, and the department head or heads concerned. At least 15 units of further approved course work in addition to the senior certificate would then be required for graduation.

(*d*) *The Advanced Certificate*

(a certificate programme for graduates of BCIT and other institutions)

A student who has graduated from BCIT with a National Diploma of Technology or has a university degree or a college diploma or some similar or equivalent recognition may receive an Advanced Certificate with 15 units of further study.

When a student who has previously obtained a National Diploma of Technology has completed a total of 24 postgraduate units on an approved programme, he will receive a second National Diploma of Technology.

(e) Other Certificates

Other certificates may be created from time to time to meet special situations which may or may not be related in number of units to the above certificates.

Course completion certificates will be presented if requested for special courses, but are not issued in the normal course of business. Transcripts, however, are normally issued on completion of every course.

21. Policy on Application for Certificates

The responsibility of applying for a certificate lies with the student. An application for a certificate should be completed only when the student has completed the requirements for the certificate. The application form is located on pages 243–244 of this Calendar.

22. Certificate Programmes for Graduates of BCIT and Other Institutions

A student who has graduated from BCIT with a National Diploma of Technology or has a university degree or a college diploma or some similar or equivalent recognition may receive an Advanced Certificate with 15 units of further study. When such a student earns 24 postgraduate units he may receive a second National Diploma of Technology.

23. Policy on Combined Programmes for Vocational School Graduates

A student who has Grade XII and has completed a full year of study in a British Columbia vocational school or an equivalent school may be admitted into a Special Combined Advanced Certificate Programme.

Students may also consider using this training as technical requirements for certificates in Industrial Management or Technical Marketing, as described in our Calendar.

24. Old Certificate Programme

Students who completed at least one course prior to July 1, 1973, may elect to receive a 12-unit certificate as described in previous Calendars. These may be connected to new 15-unit certificates by completing the remaining units required and by trading in the old certificate.

25. Policy on Statements of Accreditation

Where no accrediting body is available to accredit persons who have completed the equivalent of any certificate or diploma in a subject area offered by BCIT, and provided the student does not have a certificate or a diploma which would be generally accepted

in the Province of British Columbia, then BCIT may evaluate the student's academic and other experience and provided it meets the general specifications, a statement of accreditation may be issued by the Co-ordinator, Career Programmes, to that person.

The Society of Engineering Technologists accrediting procedures will be followed as a model.

A minimum fee of $50 will be charged per person for this service.

The Co-ordinator, Career Programmes, will establish an accrediting committee in each case that is accepted. The Co-ordinator, Career Programmes, may refuse to accept any case presented to him if he feels the grounds are insufficient or if he feels the case does not come within the above-stated policy.

FINANCIAL ASSISTANCE FOR PART-TIME STUDENTS

THE HARRY H. STEVENS MEMORIAL FUND

The Kiwanis Club of Vancouver has established an assistance fund at BCIT as a memorial to the late Honourable Harry H. Stevens.

Interested businesses, individuals, or organizations are encouraged to contribute to this worth-while fund.

The purpose of this fund is to provide financial assistance to part-time students in British Columbia, taking courses through BCIT in order to upgrade their skills or retrain themselves in technical, supervisory, or management areas.

To be eligible, applicants must have been a resident in British Columbia for at least one year immediately prior to applying for assistance. Applicants must not be receiving, or be eligible for, assistance from any government-sponsored programme which would duplicate the benefits offered by this fund. However, consideration may be given to granting supplemental assistance in extenuating circumstances where a shortfall can be shown to exist.

Moneys will be first available from this fund during the 1976/77 academic year.

The above memorial fund has been created to honour a great Canadian, the Honourable Harry H. Stevens, a champion of Western Canadian development who personified much of the country's 20th century history.

A member of Parliament almost continuously for 29 years, he turned down two chances at being Prime Minister. He formed his own party, then lost his seat in Parliament.

As a Federal Member of Parliament he found full range to expend his energies. He fought for legislation that initiated civil service reform, established the first Federal aid to technical education, changed the face of Vancouver's harbour, and redirected the country's trade policies.

This award recognizes the leadership potential inherent in every person.

CALENDAR OF EVENTS

Fall 1975 (Term I)

September 8–10	Counselling and registration.
September 10	Deadline for registration for Term I classes.
September 15–18, 20	Commencement of classes.
October 13	Thanksgiving Day, if proclaimed.
November 11	Remembrance Day, if proclaimed.
November 14	Deadline for registration and payment of second term of two-term courses.
December 3, 4, 6	Last nights for 12-week courses.
December 8, 9	Last night for Monday and Tuesday night courses.

Winter 1976 (Term II)

January 5, 6	Counselling and registration.
January 6	Deadline for registration for new Term II classes.
January 5–8, 10	Recommencement of 24- and 30-week courses.
January 12–15, 17	Commencement of new classes.
March 22–25	Last night for 24-week classes.
March 29–31	Last night for 12-week classes.
April 1, 3	Last night for Thursday and Saturday 12-week classes.

Spring 1976

April 5–8	Commencement of Term III classes.
April 16	Good Friday.
April 19	Easter Monday.
May 4–6, 8	Last night for 30-week classes.
May 11–13, 15	Last night for 18-week classes.
May 17	Victoria Day.
June 22–24, 26	Last night for 12-week Term III classes.
June 28	Last night for Monday 12-week classes.

1975

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26	27	28	29	30	31	

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23/30	24/31	25	26	27	28	29

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25	26	27	28	29	30	31

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28	29	30	31			

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27	28	29	30			

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25	26	27	28	29	30	31

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29	30	31				

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5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

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S	M	T	W	T	F	S
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

NOVEMBER						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

ADMINISTRATION

G. A. THOM, B.COMM., M.B.A., M.ED. - - - - - - - *Principal.*
J. C. MCADAM, B.A.SC., M.B.A., P.ENG. *Executive Director, Administration.*
M. T. MCDOWELL, B.P.E., M.P.E., PH.D. *Executive Director, Technological Education.*
J. D. MICHAELS, B.A.(Hons.), B.SC. *Executive Director, Personnel, Information Services, and Student Services.*
D. K. BANNERMAN, B.A.SC., S.M., P.ENG. - *Director, Engineering Division.*
E. W. H. BROWN, B.A. - - - - - - - *Director, Business Division.*
J. T. FIELD, B.COMM. - - - - - - - - - - - - *Registrar*
D. A. HUME, B.ED. - - - - - - - *Co-ordinator, Industry Services.*
D. M. MACPHERSON, C.A. - - - - - - - - - - - - *Bursar.*
S. T. RICHARDS - - - - - - - - - *Director, Health Division.*
R. C. W. SMYTH, C.ENG., M.I.MECH.E., P.ENG. - *Co-ordinator, Planning and Services.*
D. J. SVETIC, B.A.SC., P.ENG. - - *Co-ordinator, Career Programmes.*

CAREER PROGRAMMES

D. J. SVETIC, B.A.SC., P.ENG. - - *Co-ordinator, Career Programmes.*
L. S. MCGILL - *Associate Co-ordinator, Business, Career Programmes.*
A. W. MORROW, B.A., B.ED., M.ED. - - *Programme Consultant, Career Programmes.*
F. SENIOR, B.A.(HONS.) *Technology Co-ordinator, Computer Programming.*
G. E. BISSELL, B.COMM., M.A. - *Technology Co-ordinator, Administrative Management.*

INDUSTRY SERVICES

D. A. HUME, B.ED. - - - - - - - *Co-ordinator, Industry Services.*
L. A. SMITH, DIPL.T. - - - *Associate Co-ordinator, Industry Services.*
J. I. W. HARBORD - - - - - - - *Co-ordinator, Sheriff Training.*
R. G. BALLAM, J.P. - - - - - *Co-ordinator, Court Administrators.*
M. K. DWYER - - - - - - - - *Acting Co-ordinator, Consulting.*
D. H. MACLAURIN, S.F., R.P.F. - - *Acting Co-ordinator, Development.*
R. C. MORRIS, B.A., D.H.A. - *Associate Co-ordinator, Health Programme.*
E. A. MORSE, B.E., P.ENG. - - - - - *Acting Co-ordinator, Delivery.*
G. JANSEN, DIPL.T. - - - - - - *Supervisor, Stenographic Services.*

DIRECTED STUDIES

W. D. ROBERTSON, B.ED. - - *Associate Co-ordinator, Directed Studies.*

INFORMATION RESOURCE CENTRE

G. WEEKS, B.A., B.L.A. - - - - - - - - - *Assistant Librarian.*
MRS. M. L. ALLINGHAM, B.A., B.L.S. - - - - - *Reference Librarian.*
MRS. M. E. RAY, B.A., B.L.S. - - - - - - - *Catalogue Librarian.*
F. J. KNOR, B.ED., B.L.S. - - - - - - *Audio-Visual Co-ordinator.*

INDUSTRY SERVICES

INTRODUCTION

A Commitment to Adult Education

Industry Services is a community resource for "industry." It is an alternative to traditional patterns of adult education and central institutionalized education.

"Industry" describes the whole spectrum of the work force; it includes health care agencies, Government agencies at all levels, private and public corporations, volunteer and professional organizations, and individuals.

The thrust of service to industry is toward joint participation in all training activities by all parties. Emphasis is on learning rather than teaching.

The "Why" of Industry Services

1. A person in today's work force needs a sense of personal worth and achievement. A large number of today's employed people grew up during the depression, lived through a war, and lived in a postwar society where there was limited opportunity for technical training. Now that training is more readily available at the pre-employment level, newly emerging persons from the education system pose a serious threat to older members of the work force who have been trained on the job, sometimes well, but in many cases poorly.

2. The typical Industry Services student is in this latter category, is gainfully employed, and well motivated to learn.

3. While pre-employment training can provide for technical change, little opportunity exists for employed persons to achieve the level of skills required in today's job market.

Our commitments are constantly expanding to satisfy the need to "catch up." A study of the situation in British Columbia reveals that the gap between the typical employee's present level of knowledge and the level required by industry is wide and getting wider.

The "What" of Industry Services

The total systems approach to training—This is the age of rapid technical advances. "Industry" is faced with the problem of how to meet training needs with the available resources, with a limited budget, and with a philosophy of continuous planning throughout the life of a training programme.

The application of the systems approach provides a structure for the joint management of training. The system must provide credit for learning experience on the job equally with formal training.

The integration of all factors (recruitment, indoctrination, on-the-job training, skill upgrading, promotion) into "total training" is the systems approach used by Industry Services.

TYPES OF SERVICE

Consulting and identification of training needs.
Development of
courses
programmes } to meet needs.
mini schools
Delivery of established programmes.
Modifications to established programmes.
Evaluation of training.
Provision of specialized instructional aids.
Writing texts.
Development of correspondence courses.
Management of training programmes.
Staff development.
Pre-employment orientation.
Counselling.
Special needs programmes.

FUTURE CONCEPTS

With continued technological advances, it is necessary to explore training methods of the future. Among these:

Communications Satellite Utilization.
Multi-media Delivery Systems.
Open Technical Institute.
Personal Development Centre.
Small Business Centre.
Portable Training Facilities.
Week-end College.
"Sandwich" Package Programme.
Computer-aided Instruction.
Telephone Conference Line Seminars.
Cable TV—Lectures and Demonstrations.

Directed Studies

The recently created directed study service at the British Columbia Institute of Technology has a mandate to make technical education more accessible by providing an off-campus, student-centred study programme for individuals and by developing of a range of instructional packages which could be used where and when needed by students. Very few materials are available at this time, but many proposals are being considered and a limited number of programmes will be expanded during the 1975/76 academic year. Specific details are available upon request.

BUSINESS MANAGEMENT

Courses and programmes in this section of the Calendar are in the following order indicated by the two-digit technology prefix number:

CERTIFICATES IN ADMINISTRATIVE MANAGEMENT

Business Certificate in Administrative Management

Business Certificate in Personnel Management

Business Certificate in Industrial Training

Business Certificate for Executive Secretary/Administrative Assistants

Business Certificate in Municipal Administration

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Administrative Management Technology may be designed to meet the needs of the individual student.

ADMINISTRATIVE MANAGEMENT TECHNOLOLGY

Business Certificate in Administrative Management

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

	September	*January*	*April*
YEAR I	Units	Units	Units
	Management in Industry I (10.131) 1.0	Management in Industry II (10.232) 1.0	Accounting for the Manager (16.904) 1.0
	Management Psychology I (10.221) 1.0	Management Psychology II (10.321) ..... 1.0 *or* Organizational Behaviour (10.906)	
YEAR II			
	Personnel Management (10.910) 1.0	Elective 1.5	Elective 1.0
	Labour Relations (10.325) 1.0	Labour Relations (10.425) 1.0	
YEAR III			
	Economics I (10.135) .. 1.0	Economics II (10.235) .. 1.5	
	Business Law I (10.360) 1.0	Business Law II (10.460) 1.0	

List of Suggested Electives

20.180/280	Marketing	2.5
16.508/608	Marketing Financial Management	2.5
22.941/942	Work Study I and II	2.5
10.904	Supervisory Skills	1.0
10.912	Industrial Training	1.0
14.901	Introduction to Data Processing	1.0
22.535/635	Statistics for Business and Industry	2.0
20.502/602	Oral Communications and Public Speaking I and II	2.5
10.914	Manpower Planning	1.0
10.907	Discussion Leadership	1.0

Students who desire counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

ADMINISTRATIVE MANAGEMENT TECHNOLOLGY

Business Certificate in Personnel Management

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	*January*	*April*
YEAR I		
Units	Units	Units
Personnel Management (10.910) 1.0	Selection Interviewing (10.913) 1.0	Management Psychology I (10.221) 1.0
Business Writing (31.504) 1.0	Business Writing (31.604) 1.0	
YEAR II		
Labour Relations I (10.325) 1.0	Labour Relations II (10.425) 1.0	Organizational Behaviour (10.906) 1.0
Industrial Training (10.912) 1.0	Accident Prevention (10.918) 1.0	
YEAR III		
Aptitude Testing (10.915) 1.0	Counselling I (10.916) 1.0	Elective 1.0
Management in Industry I (10.131) 1.0	Management in Industry II (10.232) 1.0	

List of Suggested Electives

10.919	Labour Relations Research	1.0
10.360/460	Business Law I and II	2.0
10.321	Management Psychology II	1.0
20.906	Public Relations	1.0
10.905	Managerial Styles	1.0
10.917	Counselling and Testing II	1.0
10.914	Manpower Planning	1.0
10.501/601	Salary Administration I and II	2.0
20.502/602	Oral Communications and Public Speaking I and II	2.5
10.907	Discussion Leadership	1.0

Students who desire counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

ADMINISTRATIVE MANAGEMENT TECHNOLOLGY

Business Certificate in Industrial Training

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Industrial Training (10.912)	1.0	Manpower Planning (10.914)	1.0	Management in Industry II	1.0
Discussion Leadership (10.907)	1.0	Management in Industry I (10.131)	1.0		
YEAR II					
Oral Communications and Public Speaking I (20.502)	1.0	Oral Communications and Public Speaking II (20.602)	1.5	Personnel Management (10.910)	1.0
Management Psychology I (10.221)	1.0	Organizational Behaviour (10.906)	1.0		
YEAR III					
Managerial Styles (10.905)	1.0	Elective	1.5		
Business Writing (31.504)	1.0	Business Writing (31.604)	1.0		

List of Suggested Electives

10.913	Selection Interviewing	1.0
10.904	Supervisory Skills	1.0
22.941/942	Work Study I and II	2.5
10.135/235	Economics I and II	2.5
20.906	Public Relations	1.0
20.914	General Marketing	1.0
31.101/201	Communications	2.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

ADMINISTRATIVE MANAGEMENT TECHNOLOLGY

Business Certificate for Executive Secretary/Administrative Assistants

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Secretarial Science I (10.930)	1.0	Secretarial Science II (10.931)	1.0	Selection Interviewing (10.913)	1.0
Management Psychology I (10.221)	1.0	Management Psychology II (10.321) *or* Organizational Behaviour (10.906)	1.0		
YEAR II					
Oral Communications and Public Speaking I (20.502)	1.0	Oral Communications and Public Speaking II (20.602)	1.5		
Business Writing (31.504)	1.0	Business Writing (31.604)	1.0		
YEAR III					
Accounting for the Manager (16.904)	1.0	Elective	1.5	Elective	1.0
Managerial Styles (10.905)	1.0	Discussion Leadership (10.907)	1.0		

List of Suggested Electives

10.131/232	Management in Industry I and II	2.0
10.904	Supervisory Skills	1.0
10.910	Personnel Management	1.0
31.101/201	Communications	2.0
20.275	Salesmanship	1.0
20.914	General Marketing	1.0
10.360/460	Business Law I and II	2.0
22.941/942	Work Study I and II	2.5
20.906	Public Relations	1.0
22.535/635	Statistics for Business and Industry	2.0
14.901	Introduction to Data Processing	1.0
16.900/901	Accounting I and II	2.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

ADMINISTRATIVE MANAGEMENT TECHNOLOLGY

Business Certificate in Municipal Administration

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Municipal Finance (10.921)	1.0	Municipal Administration (10.920)	1.0	Elective	1.0
Management in Industry I (10.131)	1.0	Management in Industry II (10.232)	1.0		
YEAR II					
Supervisory Skills (10.904)	1.0	Elective	1.5		
Management Psychology I (10.221)	1.0	Management Psychology II (10.321)	1.0		
YEAR III					
Managerial Styles (10.905)	1.0	Oral Communications and Public Speaking II (20.602)	1.5	Accounting for the Manager (16.904)	1.0
Business Writing (31.504)	1.0	Business Writing (31.604)	1.0		

List of Suggested Electives

10.910	Personnel Management	1.0
10.913	Selection Interviewing	1.0
10.918	Accident Prevention	1.0
22.941/942	Work Study I and II	2.5
10.135/235	Economics I and II	2.5
20.502/602	Oral Communications and Public Speaking I and II	2.5
22.953	Project Planning and Scheduling	1.0
42.511/611	Public Services Inspection	2.0
14.901	Introduction to Data Processing	1.0
22.961	Materials Handling I	1.0
16.900/901	Accounting I and II	2.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this calendar.

Courses in Administrative Management

10.131 Management in Industry I

10.232 Management in Industry II

Purpose—This 24-week course over two terms is designed for supervisors, managers, and persons anticipating such responsibility. It provides a practical and theoretical introduction to the principal functions of modern management. The material covered is particularly useful for persons with no formal training in management as it provides a base for advancing to more specific training in the various areas touched upon in these sessions.

Objectives—From these sessions the student will obtain a good understanding of how an organization functions to accomplish its goals. It will also provide an insight for planning a certificate programme which will be of maximum assistance to the student in reaching his career goals.

Outline—Through lectures, films, and case discussions, with special emphasis on participation, the classes will examine theory and improve the student's knowledge of the management functions of planning, organizing, directing, and controlling. Topics include the related areas of communication and management information systems; setting objectives; planning for profit, sales, and personnel; organization theory and structure; leadership styles; decision-making and other facets of managerial responsibility. In the two terms (24 weeks) only an overview of these subjects can be obtained as a base for in-depth examination in subsequent courses.

PART I

Monday or Tuesday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15 or 16
Wednesday: 6.45–9.45 p.m. *or*	Sept. 17
Thursday: 6.45–9.45 p.m. *or*	Sept. 18
Saturday: 9–12 noon	Sept. 20
Term I (12 weeks)	*Unit:* 1.0

Part I will also be offered in Term II on Monday, Tuesday, Wednesday, Thursday, or Saturday, beginning January 12, 1976.

Part I will also be offered in Term III, beginning Wednesday, April 7.

PART II

Monday or Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 15 or 17
Term I (12 weeks)	*Unit:* 1.0

Part II will also be offered in Term II, beginning Monday, January 12, or Wednesday, January 14, or Thursday, January 15.

Part II will also be offered in Term III, beginning Monday, April 5.

Prerequisite—Students entering Part II should have completed Part I.

Please indicate a preference of night.

10.135 Economics I

10.235 Economics II

Purpose—This course is designed to improve managerial skills by providing a basic understanding of how the market place functions. It supplies background for other BCIT courses and is accepted by various associations such as the Institute of Chartered Accountants for students in such programmes.

Objective—On completion of the 30 weeks the student has increased his understanding of the anatomy and physiology of the economy and the interaction of individual components in the interdependent economy.

Outline—In Part I through lectures, laboratory exercises, and case studies the student is introduced to the subject and the language of Economics.

From this basic understanding, Part II becomes more of a seminar-type course, including such topics as urban economic problems and the money market, and ranges from understanding consumer behaviour to complex international economics.

PART I

Tuesday or Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 16 or 17
Term I (12 weeks)	*Unit:* 1.0

PART II

Tuesday or Wednesday: 6.45–9.45 p.m.	*Begins:* Jan. 13 or 14
Term II (18 weeks)	*Units:* 1.5

10.221 Management Psychology I

Purpose—To give the person with no formal courses in psychology a background in basic psychological concepts and the application to management situations. This will include 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 behaviour studies.

Objective—To give students a common background for further courses in management administration and interpersonal and organizational behaviour.

Outline—A combination of lectures, films, case studies, discussion, and group experiences. Concentration is on the individual in the first portion of the course with a focus on determinants of behaviour; heredity, culture, motivation, perception, attitudes, learning, and leadership. The course concludes with a focus on understanding group interactions in an organizational environment.

Succeeding courses are 10.321 Management Psychology II or 10.906 Organizational Behaviour (Human Behaviour at Work).

Monday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15
Tuesday: 6.45–9.45 p.m. *or*	Sept. 16
Wednesday: 6.45–9.45 p.m. *or*	Sept. 17
Thursday: 6.45–9.45 p.m. *or*	Sept. 18
Saturday: 9–12 noon	Sept. 20
Term I (12 weeks)	*Unit:* 1.0

The course will be repeated in Term II on Monday, Wednesday, or Thursday, January 12, 14, or 15, 1976.

The course will be repeated in Term III on Monday, April 5.

Please indicate a preference of time to attend class.

10.321 Management Psychology II

Purpose—For the supervisor manager and people with leadership responsibilities who will benefit from further study of human behaviour in the world of work.

Objective—To carry on from Part I of this course so that the student may have a deeper appreciation of motivation theory and application.

Outline—Through lectures, case studies, and films the group will probe deeper into the theories which were introduced in Part I as they relate to people management. This includes organization culture, attitudes, and their importance in change leadership styles and conflict in goals and objectives.

Tuesday or Thursday: 6.45–9.45 p.m. *Begins:* Sept. 16 or 18

Term I (12 weeks) *Unit:* 1.0

This course will be offered again in Term II on Monday, Wednesday, and Thursday, January 12, 14, 15, and in Term III, Tuesday, April 6.

Prerequisite—Management Psychology I.

Please indicate a preference of night.

10.325/425 Labour Relations I and II (formerly Industrial Relations)

Purpose—This 24-week course is designed for people who are involved in or associated with labour relations either as a member of management or a union. People in the personnel field, shop stewards, supervisors, or managers will find the coverage of the collective bargaining process and day-to-day contract administration extremely useful.

Objective—The student with this 24-week course behind him can expect to approach his responsibilities in matters covered by a collective agreement with more confidence and expertise.

Outline—Through lectures, case discussions, and exchange within the group the course covers related laws, collective bargaining, mediation, arbitration, typical contract clauses, grievance procedure, responsibilities of the supervisor and the shop steward, and current activities in the labour relations field.

PART I

Monday or Thursday: 6.45–9.45 p.m. *Begins:* Sept. 15 or 18

Saturday: 9–12 noon Sept. 20

Term I (12 weeks) *Unit:* 1.0

PART II

Monday: 6.45–9.45 p.m. *or*	*Begins:* Jan. 12
Thursday: 6.45–9.45 p.m. *or*	Jan. 15
Saturday: 9–12 noon	Jan. 17
Term II (12 weeks)	*Unit:* 1.0

Please indicate a preference of day.

10.331 Introduction to Property Management

Purpose—This course will provide students with a basic overview of property management.

Objective—Upon completion of this course a student will be able to identify and understand typical property management problems. Some arrangements are under way for students completing this course to continue to develop skills leading to a certificate of Certified Property Manager.

Outline—This course will include a review of the property management agreement, economic surveys and analysis for rental purposes, supervision, and the responsibility of the property manager. The course content also includes a study of the preparation of financial statements and the supporting fixed and variable cost data of a typical commercial or revenue property.

Thursday: 6.45–9.45 p.m.	*Begins:* Sept. 18
Term I (12 weeks)	*Unit:* 1.0

10.360 Business Law I

Purpose—This course is designed as familiarization for students who will benefit from a general coverage of commercial law or those requiring the fundamentals to proceed to the more advanced studies outlined in 10.460.

Objective—Students who attend this course will acquire a broad understanding of the principles of law.

Outline—The course consists of reading assignments, lectures based on the readings, and case study.

About half of the course will deal with contract law. Other topics covered will be jurisprudence, organization of courts, a brief discussion of tort law, along with a brief study of constitutional law.

Wednesday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 17
Thursday: 6.45–9.45 p.m. *or*	Sept. 18
Saturday: 9–12 noon.	Sept. 20
Term I (12 weeks)	*Unit:* 1.0

Please indicate a preference of day.

10.460 Business Law II

Purpose—The second part of this course is designed for students who require considerable depth of knowledge in commercial law.

Objectives—Upon completion of this course students will have a better understanding of contracts, mortgages, real property law, and company law; they will be able to deal more effectively with lawyers and be better able to handle many of their own affairs. Finally, completion of this course will enable students to determine specifically what legal problems should be turned over to a lawyer.

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

Wednesday: 6.45–9.45 p.m. *or*	*Begins:* Jan. 14
Thursday: 6.45–9.45 p.m. *or*	Jan. 15
Saturday: 9–12 noon	Jan. 17
Term II (12 weeks)	*Unit:* 1.0

Prerequisite—Successful completion of 10.360 Business Law I or permission of the instructor.

Please indicate a preference of day.

10.501/601 Salary Administration

Purpose—This 24-week presentation is for people who will benefit from a solid grounding in the fundamentals of salary administration.

Objective—On completion of this course the student should know the whys and hows of salary administration and have an introductory level knowledge and understanding of the techniques in this field.

Outline—Through lectures, discussions, case presentations, and examples the first 12 weeks will cover how to set up a plan, alternative methods of job evaluation, problems related to hiring and salary surveys.

The second term will include administering a salary plan, establishing and maintaining salary schedules, the various types of general and specific adjustments for promotions, demotions, etc., and the influences of location.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
10.501 Term I (12 weeks)	
10.601 Term II (12 weeks)	*Units:* 2.0

10.902 Small Business Management I

Purpose—This course will assist people planning to embark on a small business venture. This can be either starting a new business or purchasing an existing operation.

Objective—Through developing a new business proposal in class, members of the group should be able to analyse systematically the feasibility of participating in a small business operation.

Outline—The subjects covered by lectures, case studies and general discussions will include prerequisites for success, financing, legal problems, credit, physical facilities, location, and layout planning, etc.

Operational tactics are covered in Part II.

Tuesday or Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 16 or 17

Term I (12 weeks) *Unit:* 1.0

10.903 Small Business Management II

Purpose—This course is designed for the manager or owner of a small business and for students who have completed Part I and wish to be exposed to operating techniques before embarking on a new business venture.

Objective—This segment of the two-part course 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.

Outline—Subjects covered through lecture, case studies, films, and general discussion will include financial control, record-keeping, budgeting, forecasting, product and inventory control, pricing, sales promotion, staffing, and other functions pertinent to successful business operation.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (12 weeks) *Unit:* 1.0

10.904 Supervisory Skills

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

Objectives—To provide knowledge and techniques which will enable the student to increase his confidence and capabilities as a leader. It also will prepare the student for more in-depth training in supervision and management.

Outline—Lectures, films, and case discussions are used to cover the needs of persons taking the first step into supervision. Included on such subjects as getting work done through others, handling grievances, delegation, work planning, and roles and relationships within an organization.

Tuesday or Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 16 or 17

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, Tuesday or Wednesday, January 13 or 14, and again on Wednesday, April 7, in Term III.

Please indicate a preference of night.

10.905 Managerial Styles (formerly Management Supervision and Administration)

Purpose—This course is designed for people with leadership responsibility as supervisors or managers, or for students who have taken other courses and wish a better understanding of the "people aspects" in management.

Objective—Students completing this course should have a better knowledge and appreciation of the theory and practices related to getting work done through others.

Outline—Starting with the roles and relationships of a manager, the course through lectures, case studies, films, and discussion groups provides an overview of the most accepted theories which lead to a good examination of how those theories may be applied in differing situations.

Prerequisite—Students should have a working experience in leadership situation and preferably have completed Management in Industry I and Management Psychology I.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
Term I (12 weeks)	*Unit:* 1.0

This course will also be offered in Term II, beginning Monday, January 12.

This course will also be offered in Term III, beginning Monday, April 5.

10.906 Organizational Behaviour

Purpose—To further explore human behaviour in an organizational setting, particularly the inter-relationship of individuals with groups and intergroup relationships. Suited to practising junior management levels, it will assist anyone with leadership responsibilities to develop knowledge and understanding of the process of work-team development.

Objectives—To organize knowledge of human behaviour so that it can be used in an interpretive and predictive way in an organizational setting; to generate an understanding of human needs or motivations and their meaning for supervisors/managers, so that organizational and group needs are better met.

Outline—Further analysis of groups. The study of power, authority, sanctions, leadership, communications, conflict, and change. Group dynamics will develop partly through participation in structured experiences.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0
Monday or Tuesday: 6.45–9.45 p.m.	*Begins:* Jan. 12 or 13
Term II (12 weeks)	*Unit:* 1.0

This course repeats in Term III, beginning April 5, 1976.

Prerequisite—Management Psychology I.

Please indicate a preference of night.

10.907 Discussion Leadership

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

Objective—Persons completing this course will gain confidence and skill in getting the most out of an exchange within a group, a meeting, or a more formal conference.

Outline—Through lectures, demonstrations, and critiqued practice sessions the instructor will lead the group through the kinds of meetings for various situations, planning techniques, introducing the subject, question techniques, controlling the discussion ensuring participation, summarizing fixing responsibility, and ensuring follow-up action.

Many people in leadership situations find this training the most useful they have ever experienced.

Wednesday or Thursday: 6.45–9.45 p.m.	*Begins:* Sept. 17 or 18
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, beginning on Thursday, January 15, 1976.

Enrolment will be limited to 20 students per class.

10.910 Personnel Management

Purpose—This 12-week introductory course is designed for those who have recently joined personnel or industrial relations departments or who plan to enter the field. It is also valuable to supervisors and managers who must implement and are held accountable for administering personnel policies.

Objective—On completion of the course, students can expect to have a good understanding of the role of the personnel function, its relation to management, its responsibility to employees, and what it does.

Outline—Through lectures, case studies, and audio/visual aids, all of the major functions of the personnel department will be examined, with particular emphasis placed on the practical application of personnel policies and procedures within the work environment. It includes such topics as employment wage and salary administration, administration of pension plans and insurances, employee relations, and other functions. These subjects are presented to show the breadth of these functions only and should be followed by supporting courses giving in-depth coverage on how to administer the various subject areas.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15
Tuesday: 6.45–9.45 p.m. *or*	Sept. 16
Thursday: 6.45–9.45 p.m. *or*	Sept. 18
Saturday: 9–12 noon	Sept. 20
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Jan. 12
Tuesday: 6.45–9.45 p.m. *or*	Jan. 13
Thursday: 6.45–9.45 p.m.	Jan. 15

This course will be repeated in Term III.

Tuesday: 6.45–9.45 p.m.	*Begins:* April 6

Please indicate a preference of night.

10.912 Industrial Training

Purpose—This course is helpful to people with responsibility for training of personnel in business, industry, government, municipalities, and institutions. Members of a personnel department contemplating a training programme and supervision will be particularly interested.

Objective—On completion of this 12 weeks the student will have a good grounding in current training methodology techniques and aids.

Outline—Lectures, demonstrations, and practice sessions will cover such topics as learning theory, determining training needs, writing objectives, designing training programmes, using outside resources and evaluation. Practice sessions will provide familiarity and skills in the effective use of visual aids.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, 1976.

10.913 Selection Interviewing

Purpose—This course is presented for people in the Personnel field—supervisors, managers, and anyone who is called upon to interview candidates for employment.

Objective—This highly important skill is seriously under-rated in most organizations. Students completing this course can be expected to make a more meaningful contribution to their organization through avoiding many of the pitfalls of inappropriate selection of new employees.

Outline—The course identifies techniques, styles, stages, uses, pitfalls, and key points in interviewing, with particular emphasis on question techniques and selective listening. The classes will lean heavily to practice sessions using tape recorders and closed circuit television. With this need for individual attention the class is limited to 20 students.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15
Tuesday: 6.45–9.45 p.m. *or*	Sept. 16
Thursday: 6.45–9.45 p.m.	Sept. 18
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, Monday, Tuesday, or Thursday, January 12, 13, or 15.

This course will be repeated in Term III, beginning Tuesday, April 6.

Prerequisite—Students should have had some previous exposure to the selection process and preferably completed the course on Personnel Management.

Enrolment will be limited to 20 students per class. Please indicate a preference of nights.

10.914 Manpower Planning

Purpose—Members of a personnel department, managers, supervisors, or people in a planning organization which involves "people resources" are those who will find this presentation very practical.

Objective—To give participants the philosophy and some of the techniques of maximising people potential in an organization.

Outline—Through lectures, group discussions, and case studies the instructor will lead the class to an understanding of 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 programme evaluation.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18
Term I (12 weeks) *Unit:* 1.0

10.915 Aptitude Testing

Purpose—For personnel selection and career planning. This basic course is designed to assist persons in personnel departments and administration departments in industry, business, hospitals, and education where selection and development of personnel is of concern. Supervisors, managers, and counsellors will find useful this practical orientation to the proper use of psychology tests. BCIT students who have completed 10.913 Selection Interviewing will find this Aptitude Testing course particularly supportive and appropriate.

Objectives—Satisfactory completion of this course should enable the participants to (1) understand the proper use of aptitude tests, their administration, scoring, and norms, and straightforward interpretation of Level A tests; (2) avoid unintentional abuse of tests and the data derived; (3) appreciate when professional guidance and assistance are needed in a testing programme and how to use supplementary analysis and reports from an industrial psychologist.

Outline—A practicum course which will allow each student to "see, touch, and do" an extensive battery of aptitude tests. Proper methods of administering, scoring, norming, and initial interpretation of basic tests will be taught. Participants will obtain their own private results on a number of standard aptitude and interest tests as well as gain an introduction to achievement tests, personality inventories, and specialized tests. Course is prepared and conducted by a consulting industrial psychologist.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
Term I (12 weeks) *Unit:* 1.0
(Plus lab fee for personal test materials and computer scoring, etc.)

10.916 Counselling I

Purpose—To give a broad orientation to the range and ramifications of the counselling process and to develop usable skills for persons involved in interviewing within business, industry, hospitals, social agencies, and education.

Objectives—To understand the different counselling methods, who is competent to use each and when a particular counselling mode is appropriate to a client's needs; to enhance personal interviewing abilities by developing skills of active listening and nondirective counselling.

Outline—Lectures, films, and tapes by recognized international authorities to acquaint class participants with (1) the historical developments and present trends in counselling and (2) with the philosophies, processes, and

methods of various counselling approaches. Some personal interviewing and listening skills will be practised and a general base will be laid through this course and 10.917 Aptitude Testing for those wishing to enter into a greater depth of interpersonal training via the subsequent course 10.916. Courses are prepared and conducted by a consulting organizational psychologist.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (12 weeks) *Unit:* 1.0

(Plus lab fee for tape rentals, etc.)

10.917 Counselling—Testing II

Purpose—To provide a greater depth of experience and understanding to those students who have completed 10.915 Aptitude Testing and 10.916 Counselling.

Objectives—To develop a sensitive awareness to the process of personality appraisal and personal growth through individual and group counselling methods; to enable each student to complete some complex personality inventories and receive confidential feed-back; to let groups of students learn to develop an accepting and supportive circumstance in which an individual can express personal concerns and learn to share in an atmosphere of trust, openness, and mutual respect.

Outline—Individuals will learn by doing and by discussion of personality tests, interviews, and small group process. Special counselling films and audio tapes will be used to expand on instructor-presented information. Students will be active participants, each presenting at least one short paper to the group. The psychologist will contribute as a resource person and in the function of a facilitator—participant vs. lecturer.

Tuesday: 6.45–9.45 p.m. *Begins:* April 6

Term III (12 weeks)

(Plus lab fee for students' test materials and computer scoring services.)

Prerequisite—10.916 Counselling I or the permission of the Instructor.

10.918 Accident Prevention

Purpose—This course is for anyone who has responsibilities for accident prevention in an industrial setting. Managers, supervisors, shop stewards, safety committee members, or members of a personnel department will find this presentation very practical.

Objective—On completion of this course the participants should make a meaningful contribution to the reduction of injuries and accident costs in their operation.

Outline—Through lectures, films, and case discussions the course will cover the important aspects of accident prevention, including the *Workers' Compensation 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 co-operation, and other ways and means of getting this important job done.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (12 weeks) *Unit:* 1.0

The course will be repeated in Term II, beginning Wednesday, January 14, 1976.

10.919 Labour Relations Research

Purpose—To give an insight into the information used in collective bargaining and arbitration. To familiarize 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 labour-management negotiations.

Objectives—A student completing this course will (*a*) be able to prepare factual data for negotiations and will understand the information presented; (*b*) be able to cost wage, salary, and fringe-benefit proposals; (*c*) be familiar with sources of information; (*d*) have an understanding of research concepts.

Outline—The course emphasizes discussion following lectures and will employ mock bargaining to demonstrate the importance of emotional and political interference in the communication process. Guest speakers from labour and management will be invited to participate in lectures and discussions.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (12 weeks) *Unit:* 1.0

This course will repeat in Term II, beginning Wednesday, January 14, 1976.

Prerequisite—Working experience in labour relations or have completed a course in labour relations.

10.920 Municipal Administration

Purpose—This course is designed for people in the municipal field, those interested in municipal public office, and others who will benefit from an understanding of how a municipal administration is structured and operates.

Objective—In addition to giving a general familiarization, students completing this course will be equipped to take the course in municipal finance and other courses related to this field.

Outline—Lectures, including guest lecturers, discussions, and assignments, are used to cover such subjects as constitution and law; definition of powers and how they are utilized, elections and functions of council; administrative organization and functions; financial framework and the concept of regional bodies.

Thursday: 7–9 p.m. *Begins:* Jan. 15
Term II (12 weeks) *Unit:* 1.0

10.921 Municipal Finance

Purpose—This course is for people in the municipal field who will benefit from a basic understanding of the unique elements of finance in the municipal area. Supervisors and people in related positions will benefit from this overview.

Objective—On completion of this course students will have a good understanding of the differences in sources of finances for municipalities and know how they are managed. It does not teach municipal accounting.

Outline—Through a series of co-ordinated guest lectures the student will be given an introduction to sources of municipal revenue, taxation, assessment, the Provincial and Federal relationships. In the expenditure and control area the lectures will deal with budgeting, financial management, and cost control and the responsibilities of elected officials and municipal administrators.

Tuesday: 7–9 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

10.930 Secretarial Science I

Purpose—This course gives a basic introduction and overview of all executive secretarial functions as well as providing simulated practical training. It is designed for persons interested in assuming more responsibility in the office and also improving communication and management skills in order to advance their career objectives.

Objectives—On completion of this course, a student can expect to (*a*) have a good understanding of the role and duties of an executive secretary, including an intensive review of secretarial procedures, work organization, letter writing, office management and supervision; (*b*) possess improved communication skills and be able to deal with difficult human relations problems; (*c*) identify and practise some of the skills and responsibilities an executive secretary/administrative assistant might perform.

Outline—A variety of methods will be used in the course. These include lectures, case studies, role-playing, films, in-basket exercises, guest speakers, small syndicate group discussions, videotaping and cassette recordings. Topics include word processing, the secretary's responsibilities for written communication, conferences, staffing and supervision, planning, efficiency techniques, processing and presenting business data, communications, human relations, and career opportunities.

Monday or Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 15 or 17

Term I (12 weeks) *Unit:* 1.0

There are no prerequisites and Secretarial Science I and II may be taken in any order.

Please indicate preference of the evening you wish to attend.

10.925 An Introduction to Appraising Real Property—SREA

Purpose—The course is designed for beginners in the fields of appraiser, real estate broker, lender, builder, and assessor. It assumes no particular background for the student other than an interest in appraising and ability to learn.

It may also serve as a refresher for experienced appraisers who feel a need to refresh and update their knowledge and skills.

Objective—On completing this introductory course, the student will not be an appraiser, but will have learned how to apply the principles and techniques to actual residential appraisal problems. To become a professional

appraiser, the student completing this course must add meaningful practical appraisal experience and further advanced training.

Outline—Through lectures, discussion groups, reading assignments, and practical case problems, the material covered will include 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, neighbourhood 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: correlation analysis and final value estimate, writing the appraisal report; professional ethics and standards of practice.

Saturday: 9 a.m. to 4 p.m. *Begins:* Nov. 15

Term I (9 weeks) *Units:* 1.5

10.931 Secretarial Science II

Purpose—This course provides unique opportunities for persons involved in the secretarial profession and interested in improving their ability to communicate effectively, in person and on paper. It will provide both theoretical and simulated experience in executive secretarial planning, supervising, decision-making, and communication.

Objectives—On completion of the course, a student can expect to (*a*) be able to compose basic as well as difficult letters; (*b*) demonstrate ability in using problem-solving strategies for troublesome interpersonal situations; (*c*) be able to assert one's personality, feel more at ease and confident in communicating and relating with others; (*d*) develop competency in performing the higher level duties of an executive secretary/administrative assistant such as delegating work, assuming additional decision-making responsibilities, problems unique to the new woman supervisor, etc.

Outline—Topics include psychology of human behaviour for the executive secretary, letter composition, attitudes, problem-solving, decision-making and creativity, career opportunities and duties, interviewing, office management and planning, communications, personality projection and motivation. Such methods as lectures, guest speakers, videotaping, discussions, films, and case studies will be used to accomplish the objectives.

Monday or Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 12 or 14

Term II (12 weeks) *Unit:* 1.0

There are no prerequisites and Secretarial Science I and II may be taken in any order.

Please indicate preference of the evening you wish to attend.

10.940 Special Project

Purpose—This opportunity is offered to give advanced level BCIT Extension students the opportunity to do an independent, in-depth study of an area of interest in the business management field under the guidance of an instructor.

Objective—In this project students will be able to 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 will be set by the student himself.

Outline—If a student is interested in pursuing this avenue of study, he should approach an extension counsellor for assistance in putting forth his proposal for the project.

Unit—This course may be taken for one or two units of credit.

CERTIFICATES IN BROADCAST COMMUNICATIONS TECHNOLOGY

Business Certificate in Broadcast Communications

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Broadcast Communications Technology may be designed to meet the needs of the individual student.

BROADCAST COMMUNICATIONS TECHNOLOGY

Certificate Programme in Broadcast Communications

Students seeking a Certificate in Broadcast Communications should be prepared to complete a minimum of 10 units in Broadcast subjects plus an additional five units from Broadcast or other Business Division courses. At least two courses in each of the Radio, Television, and Broadcast Journalism areas must be included in the 10 units.

All non-Broadcast courses must be approved by Broadcast Administration before registration if they are to apply to this Certificate Programme.

NOTE—Some of the following courses are designated as limited in numbers for registration. Selection for those courses will be made prior to the beginning of each term. Would you please therefore mail your application with any pertinent information that would assist the selectors. Interviews for those limited registration courses will be held in advance of course beginning.

For further information regarding screening dates and appointment times, please call 434-5722, local 204/205.

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Broadcast Communications

12.901 Radio—Basic

Purpose—This course is for persons currently employed in nonproductive areas of the broadcast industry or persons highly motivated toward this area.

Objective—On completing this course students will have developed minimal entry skills and a basic understanding of the production process.

Outline—The course introduces the student to broadcast radio equipment and its use in practical industry situations.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks). *Unit:* 1.0

This course will be repeated in Term II, beginning Tuesday, January 13, 1976.

LIMITED ENROLMENT.

12.902 Television—Basic

Purpose—This course is designed for persons in the industry working in nonprogramme areas or those outside the field who will benefit from knowing more of the "how" and "why" of television.

Objective—On completion of this course students will have an elementary knowledge of television production techniques.

Outline—The course material includes an introduction to all commonly used television equipment and includes some practice in its use. A television production is the ultimate goal of this course.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks). *Unit:* 1.0

This course will be repeated in Term II, beginning Monday, January 12, 1976.

LIMITED ENROLMENT.

12.903 Film for Beginners

Purpose—People with an interest in cinematography or with limited experience are invited to particpate.

Objective—To provide an introduction to basic camera operation and film editing as practised in a television sense.

Outline—In discussion and workshops the course material will cover optical and magnetic sounds, animation, processing, trick photography, limitations of the television system, etc.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Tuesday, January 13, 1976.

LIMITED ENROLMENT.

12.904 Film Use in News

Purpose—This presentation is for persons with an interest in or experience in broadcast journalism who wish to develop skills as a TV camera man.

Objective—Successful completion of this course should fit the student for entry to this field in the limited area covered.

Outline—The course covers the use of still and 16-mm film for the coverage of television news. It includes the use of cameras and special techniques, editing and experimentation. Students will have an opportunity for "hands on" use of some equipment in addition to practice in editing and cutting.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Thursday, January 15, 1976.

LIMITED ENROLMENT.

12.905 Radio Copywriting

Purpose—This course is ideal for nonproduction or writing employees in the broadcast industry looking for a move to this area or for any person wishing to know "how it's done."

Objective—To improve the student's technique in selling.

Outline—The course will cover the how's and why's of writing radio commercials with considerable practice and evaluation.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, 1976.

12.906 TV Staging and Lighting

Purpose—People in nonproductive areas who wish to know more about staging, people with a high interest in staging and those with stage experience who wish to add skills in this area will benefit.

Objective—Students will have a sound introduction to the workings of a television staging department.

Outline—The course deals with personnel, materials, tools, and basic skills in planning studio set-ups.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Thursday, January 15, 1976.

12.907 Audio Production

Purpose—This course is designed for persons in the industry wishing to add production skills, persons with a high interest in sound recording, or those who are interested in music recording techniques.

Objective—To provide a base of knowledge for the type of persons noted above and to introduce them to new techniques.

Outline—The course includes techniques in sound pick-up and recording and basic production methods used for special programming material and commercials.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Monday, January 12, 1976.

Prerequisite—12.901 Radio—Basic.

LIMITED ENROLMENT.

12.908 Broadcast News Writing

Purpose—To aid those in the news field who wish to develop additional skills, those with a general interest in the field, and employees in the broadcast industry who wish to add news writing to their present skills.

Objective—Students can expect to improve their oral and visual newswriting skills.

Outline—The course covers the techniques and skills used in writing news for radio and television. Practical demonstrations, assignments, and practice sessions will be used to develop these skills.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, 1976.

12.909 Broadcast Reporting

Purpose—This course is for people with some desk experience in this field and for students who have completed 12.908 Broadcast News Writing and 12.910 The Broadcast Newsroom.

Objective—To provide a further depth of knowledge and skill for those with some experience and background.

Outline—In this course the group will move out of the newsroom and into the community where news is found to learn how it is reported. It covers both radio and television news.

Monday: 6.45–9.45 p.m.	*Begins:* Jan. 12
Term II (12 weeks)	*Unit:* 1.0

12.910 Broadcast Newsroom

Purpose—This course is suited to people in the industry who wish to move into the news field or those with a general interest in this aspect of community life.

Objective—On completing the course students will have a sound introduction to the radio and television newsroom.

Outline—The course will cover newsroom routine, editing techniques and management, the specialized equipment and functions of the radio and television newsroom.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
Term I (12 weeks)	*Unit:* 1.0

12.911 Television Operations

Purpose—This course is specifically designed for those students who have the basic equipment and orientation television course. It deals exclusively with the day to day and continuous operation of a television station.

Objective—To sharpen student's skills and to add complex techniques to those previously covered in Basic Television.

Outline—Students will be given a weekly assignment of a minimum of two hours' duration in which actual broadcast conditions will be simulated.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, 1976.

Prerequisite—12.902 Television—Basic.

LIMITED ENROLMENT.

12.912 Radio and Television Announcing

Purpose—To provide students in broadcast with introductory skills and practice in this important function.

Objective—To improve presentation, articulation, and familiarity with basic announcing skills.

Outline—Students will be exposed to several styles of announcing techniques and will be given sufficient time for practice.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, 1976.

NOTE—In the event there is a large enrolment for this course, an audition will be given prior to acceptance into the programme. In all cases, the examination will be a practical audition.

CERTIFICATE IN COMPUTER PROGRAMMING TECHNOLOGY

Business Certificate in Computer Programming

For students who have completed a first-level Certificate as above, further programs of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Computer Programming Technology may be designed to meet the needs of the individual student.

COMPUTER PROGRAMMING TECHNOLOGY

Business Certificate in Computer Programming

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate. At least six units must be other than computer-oriented courses.

September		*January*		*April*	
YEAR I	Units		Units		Units
Introduction to Data Processing (14.901)	1.0	Computer Programming I (14.902)	1.5	Elective	1.0
Accounting I (16.900)	1.0	Accounting II (16.901)	1.5		
YEAR II					
Computer Programming II (14.501)	1.0	Computer Programming II (14.601)	1.0		
Elective	1.0	Elective	1.5		
YEAR III					
Computer Systems Techniques (14.505)	1.0	Computer Systems Techniques (14.605)	1.0		
Elective	1.0	Computer Programming Introductory COBOL (14.923)	1.5		

List of Suggested Electives

10.131	Management in Industry I	1.0
10.232	Management in Industry II	1.0
10.135/235	Economics I and Economics II	2.5
10.905	Managerial Styles	1.0
16.902/903	Cost Accounting I and Cost Accounting II	2.5
16.504/604	Financial Accounting I and II	2.5
20.180/280	Marketing	2.5
20.503/603	Oral Communications and Public Speaking I and II	2.5
22.535/635	Statistics for Business and Industry	2.0
22.941	Work Study I	1.0
22.942	Work Study II	1.5
22.551/651	Systems Analysis	2.5
22.953	Project Planning and Scheduling	1.0
22.963	Mathematics for Management	1.5
31.503/603	Business and Technical Report Writing	2.0
43.507/607	Digital Techniques	2.0
31.504/604	Business Writing	2.0
14.922	Introduction to R.P.G. II	1.0

Students working on higher level certificates should choose 50 per cent of their course work from the following list and 50 per cent of their course work from noncomputer electives:

14.502/602	Computer Programming III	2.5
14.906	IBM System/370 DOS Systems Programming	1.0
14.503/603	Computer Programming PL/I	2.5
14.909	Basic FORTRAN IV	1.0
14.917	Advanced FORTRAN IV	1.5
14.515/615	Systems Development	2.0
14.924	Computer Programming—COBOL	1.0
14.921	Data Communications I	1.0
14.925	Introduction to Computer Operations	1.0
14.926	Computer Operations Management	1.0
14.927	Introduction to R.P.G. II	1.0
14.928	Introduction to Data Base	1.0
14.929	Data Base Design	1.0
14.930	Data Communications II	1.0
14.931	Probability and Simulation I	1.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

14.901 Introduction to Data Processing

Purpose—To allow people with little or no experience in data processing to enjoy contact with and practice in the basic principles of electronic data processing as found in commercial application. For persons considering employment in the data processing area the course provides an opportunity for students to assess their aptitude while practising basic principles of data processing. For students with a general interest in data processing the course provides an opportunity to enhance the students understanding of commonly used techniques in commercial data processing.

Objective—To give students a basic foundation in data processing from which they may progress to further training, or students will learn enough to improve their understanding of the data processing procedures in their work environment.

Outline—The data processing principles practised include data preparation integrity; data manipulation and file manipulation; system flow charts for multifile problems, elementary computer programme writing and testing.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15
Wednesday: 6.45–9.45 p.m. *or*	Sept. 17
Thursday: 6.45–9.45 p.m.	Sept. 18
Term I (12 weeks)	*Unit:* 1.0

Please indicate a first and second choice of nights.

Course repeats beginning January 12, 1976. Course repeats in Term III, beginning April 8, 1976.

ENROLMENT LIMITED.

14.902 Computer Programming I

Purpose—To provide an introductory programming course for those persons intending to become computer programmers. An assembler language is used so that the student will become more familiar with the actual programming steps taken by the computer in solving a number of elementary business problems. Students should have previous knowledge of the data processing environment and the programming function through completion of an introductory course in data processing and (or) experience in the data processing field.

Objectives—On completion of the course a student can expect to be able to (*a*) produce working, fully documented computer programmes for elementary business problems; (*b*) understand the operation of a small business computer.

Outline—By means of a combination of lectures and workshop practice, the student will write, test, and debug a series of programmes that illustrate the problems encountered in the business data processing field. Topics include computer storage; devices; assembler instruction set; logical development a programme; decision-making; problem analysis; flowcharting; coding and testing; debugging; programming standards; documentation, control, and validation of data; data totals; multilevel totals.

Tuesday: 6–10 p.m. *Begins:* Sept. 16
Term I (13 weeks) *Units:* 1.5

Course repeats in Term II, beginning January 13, 6.45–9.45 p.m. for 18 weeks.

Prerequisite—Second-class standing in Introduction to Data Processing or equivalent data processing experience, and permission of the Department.

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14.501/601 Computer Programming II

Purpose—To provide persons who have a basic knowledge of business computer programming with a detailed practical knowledge of IBM 360 and 370 assembler language. Although this course is designed to follow 14.902 Programming I, persons employed in 360 or 370 computer installations will find it particularly useful in enhancing their knowledge and employment prospects. This course is a prerequisite for 14.502/602 Computer Programming III.

Objectives—The course provides (*a*) a basic working knowledge of assembler language; and (*b*) the use of assembler in common business programming situations.

Outline—Lectures and problem sessions. Coding, testing, debugging, and documentation of programme assignments according to acceptable standards and controls. Decimal, binary, and hexadecimal number systems. Declaratives: character, packed and binary. Decimal arithmetic, multiply and divide, editing. Registers, and base/displacements addressing. Explicit use of base registers. Tables and table lock-up techniques. IOCS: file definition and imperative macros. Introduction to magnetic tape and disk storage devices.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15
14.501 Term I (12 weeks)
14.601 Term II (14 weeks) *Units:* 2.0

Prerequisite—Computer Programming I or equivalent.

14.502/602 Computer Programming III

Purpose—To allow persons with some practical experience in IBM 360/370 assembler language to write extensive programmes in assembler language. Specifically, this course will provide theoretical and practical training in most aspects encountered when programming in assembler language. Persons already employed in programming will find this course helpful in broadening their understanding of programming concepts and IBM operating systems.

Objectives—On completion of the course a student can expect to (*a*) be knowledgeable of the architecture and principles of operation of the IBM S/360 or S/370 computers; (*b*) understand the input/output control and operating system interfaces; (*c*) be able to use the assembler macro language and perform binary data manipulation; (*d*) be capable of writing subprogrammes and overlay structures.

Outline—A mixture of lectures and laboratory exercises will provide practical experience. The various programming exercises will be done using the on-sight IBM computer. Topics include machine architecture; input/output control; operating system interfaces; tape and disk storage; binary data manipulation; macro writing; subprogrammes, overlays.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
14.502 Term I (12 weeks)
14.602 Term II (18 weeks) *Units:* 2.5

Prerequisite—Computer Programming II or equivalent.

14.505/605 Computer Systems Techniques

Purpose—To allow persons considering employment in data processing to develop their analysis skills and learn basic systems design techniques. The techniques will be studies using common business applications as processed on small to medium-size computers. This is done in order to concentrate on systems fundamentals rather than technical problems.

Objectives—On completion of the course a student can expect to be able to gather and organize systems data, prepare systems flowcharts, and other documentation. The student will become familiar with such topics as document and accounting controls, methods of data coding and file organization, and the use of decision tables.

Outline—Lectures and discussion will be used to introduce the topics, followed by practical exercise executed individually or in small teams. The exercises will use basic applications such as billing, payroll, and inventory control. Students will set up and execute one application on the Department's batch processing computer.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
14.505 Term I (12 weeks)
14.605 Term II (12 weeks) *Units:* 2.0

Prerequisite—14.901 Introduction to Data Processing, familiarity with one high-level language, or permission of the Department.

14.515/615 Systems Development

Purpose—To give computer programmers, programmer analysts and systerm users an introduction to the broad perspective of systems development

and its relation to the business environment. People who are entering the area of systems analysis and design will find the course helpful in providing (*a*) the background cycle within which the analysis and design take place; (*b*) training and practice in the basic techniques used in analysis and design.

Objectives—On completion of the course a trainee analyst can expect to be able to contribute to development projects under the guidance of an experienced analyst. A programmer analyst will be able to participate in the detailed design of commercial systems. A "user" department supervisor will become aware of his role in the development process and be able to participate actively in the system cycle from inception to implementation.

Outline—By means of a combination of lectures, discussions, and extended case study practice, the students will be guided through the various phases of system development, including feasibility studies, fact finding and analysis, design alternatives, developing and implementing the system.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

14.515 Term I (12 weeks)

14.615 Term II (12 weeks) *Units:* 2.0

Prerequisite—14.505/605 Computer Systems Techniques or an advanced programming course, or permission of the Department.

14.906 IBM System/370 DOS Systems Programming

Purpose—This course is designed for application programmers who wish to become systems programmers. For the programming-oriented portions a thorough knowledge of assembler language is required.

Objectives—On completion of the course the student will be able to assume the responsibilities of a systems programmer, this being mainly to maintain the IBM operating system and generate a new system as new releases are issued by IMB; in addition, to be able to give advice or perform the more complex assembler programming problems.

Outline—The three-hour period will be divided into one to one and one-half hours lecture and one to one and one-half hours lab (performing assignments). Topics will include the implementation of IBM programming support under system/370 Disk Operating System, including utilities, programming languages and the operating system; generation of a custom-tailored supervisor; design of standard programming techniques and practices; overlay structures; physical IOCS; problems of implementing manufacturer supplied programmes; OS job control.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (12 weeks) *Unit:* 1.0

Prerequisite—14.501/601 Computer Programming II or permission of the the instructor.

14.503/603 Computer Programming PL/I

Purpose—To allow students who have had some previous programming experience to become familiar with the PL/I language. In addition, to familiarize the student with typical business programmes and techniques in writing them.

Objectives—On completion of this course the student can expect to be able to code, test, and debug PL/I programmes of a relatively complex nature.

This course will also prepare the student for the writing of the more complex programmes required in courses 14.504/604.

Outline—The three-hour period is divided into approximately one to one and a half hours lecture and one and one-half hours to two hours lab (coding and running programmes). Topics include basic elements of the language with emphasis on Record I/O. Techniques and efficiencies in using the language and processing of card, printer, tape and disk files, including variable length and indexed sequential. A number of programmes will be assigned, during the course, with the on-site system/370 available for their testing.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

14.503 Term I (12 weeks)

14.603 Term II (18 weeks) *Units:* 2.5

Prerequisite—Computer Programming I or permission of the instructor.

14.909 Basic FORTRAN IV (formerly Applied Fortran IV)

Purpose—To allow persons with little or no knowledge of computer programming to gain an insight into one of many available programming languages. Persons already familiar with another programming language will find the course helpful in broadening their outlook on computing in general. Grade XII mathematics, including an orderly and logical reasoning capacity, is a desirable but not a necessary prerequisite to attending this course. Basic FORTRAN IV is intended as a preparation for course 14.917 Advanced FORTRAN IV.

Objectives—To give persons sufficient knowledge and experience in the use of FORTRAN IV to enable them to (*a*) design, write, test, and debug programmes within their own fields of endeavour; (*b*) follow the logic within programmes written by others.

Outline—The course consists of a balance between lectures, tutorials, and pracitcal hands-on experience by writing programmes as assigned. 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 programmes to the BCIT computer.

Wednesday or Thursday: 6.45–9.45 p.m. *Begins:* Sept. 17 or 18

Term I (12 weeks) *Unit:* 1.0

Class will be limited to 20 students. Please indicate preference of the evening you wish to attend.

The course will be offered again in Term II, beginning Wednesday, Jan. 14, 1976.

14.917 Advanced FORTRAN IV (formerly Applied FORTRAN IV Advanced)

Purpose—To give persons already acquainted with FORTRAN a chance to expand their knowledge to more advanced features of the language. Grade XII mathematics, including an orderly and logical reasoning capacity, is a desirable but not a necessary prerequisite to attending this course. Basic FORTRAN IV (14.909) or its equivalent is a required prerequisite.

Objective—To give persons more hands-on experience in writing and testing programmes using the most advanced features of FORTRAN IV.

Outline—The course consists of a balance between lectures, tutorials, and practical hands-on experience, by writing both programmes as assigned, and programmes within a person's own discipline. Topics include the syntax and use of the common statements comprising the FORTRAN IV language; the application of these statements to solving both numeric and non-numeric problems; preparation and submission of programmes (including the use of magnetic tape and disk units) to the BCIT computer.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (18 weeks) *Units:* 1.5

Class will be limited to 20 students. This course is not offered during the fall term.

14.921 Data Communications I

Purpose—This course provides an introduction to the analysis and design of business and data communications systems. With the rapid changes in telecommunications, this course would be extremely valuable to systems programmers and analysts, including individuals directly or indirectly involved in the communications or computer industry.

Objective—Upon completion of the course the student will be conversant in the area of data communications and will be capable of assisting in the analysing and designing of most data communications systems for business applications.

Outline—The course will outline the basic principles of data communications; the various types of terminal equipment and their characteristics; the line facilities and service offerings as provided by the common carrier companies and the economics of these services and equipment. Computer teleprocessing and timesharing will be briefly covered.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

14.922 Computers in Business

Purpose—For those people who are not specializing in data processing, a look at the types of computer systems currently in use in business. Through the exposure to and contact with current computer equipment, most of the abstraction associated with these computers will be removed.

Objective—Upon completion of the course the student should be able to communicate effectively with the people within the data processing industry and interact in a productive sense with the everyday operations of a data processing department.

Outline—Review of Introduction to Data Processing, types of computer systems, computer I/O media and devices, operating systems, mini computers, small business computers, programme preparation and execution (students will code and execute a COBOL programme in this section), security

and controls in computer systems, data centres, history and development of computer hardware and software, installing a computer, current computer systems.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
Term I (12 weeks) *Unit:* 1.0

Prerequisite—Introduction to Data Processing.

This course repeats in Term II, beginning Tuesday, January 13.

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14.923 Computer Programming—Introductory COBOL

Purpose—For persons who want to learn business computer programming using a widely used high-level language like COBOL. It is also a course which is suitable for accountants or accounting students who wish to learn how the programming is done in a data processing environment, so as to be more conversant with programmers. For the persons who want to program in COBOL in a career, this course serves as preparation for 14.924 Computer Programming—COBOL.

Objective—On completion of this course, a student has a good understanding of (*a*) all the basic instructions of the COBOL language; (*b*) the basic principles and practices of business computer programming; (*c*) a fundamental knowledge of file structures, including sequential disk and tape files.

Outline—The course covers all basic instructions of the COBOL language and they are applied in business programmes which the students write to run on the IBM System/370. Principles and practices of business computer programming like flowcharting, sequence checks, control breaks, page overflow, input and output controls are stressed. Other topics like modular programming, tables, file descriptions and record formats, and introduction to disk and tape file organizations are also taught.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12
Term II (18 weeks) *Units:* 1.5

Prerequisite—14.901 Introduction to Data Processing or permission of the instructor if the student has data processing experience.

14.924 Computer Programming—COBOL

Purpose—This course is designed for persons who want to write programmes in a data processing environment using the COBOL language. It gives them an opportunity to write programmes using disk and tape extensively.

Objectives—On completion of this course a student has a good understanding of (*a*) all tape file organizations and the COBOL instructions associated with tape files; (*b*) all disk file organizations, including indexed, sequential, and random access files, and the COBOL instructions associated with their usage; (*c*) utility programmes and programme libraries; (*d*) special techniques like overlays, binary table search, and subprogrammes. The student should be adequately trained to programme in COBOL in an actual data processing environment.

Outline—The course covers efficient programming techniques, sequential and binary table look-ups, subprogrammes, 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 programmes are also taught. The students write programmes which apply the techniques and they also use disk and tape files extensively.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

Prerequisite—14.923 Computer Programming—Introductory COBOL or previous programming experience in COBOL.

14.925 Introduction to Computer Operations

Purpose—To provide an introductory course for people who have some data processing knowledge and have some prospects of employment as computer operators.

The course also provides a data processing student with the opportunity to learn about the functions of operations department.

Objective—To give students practice in using operations techniques and a basic knowledge of DOS POWER/VS operating system, thus enhancing their employment prospects as trainee operator.

Outline—A mixture of classroom lectures and "hands on" operating, students must be prepared to attend one Saturday during the term for "hands on" operating practice.

The course includes the organization of a data processing installation, operator duties and responsibilities, running the equipment within installation standards, input-output control, tape-disk library function, error reporting.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18 (and Saturday by individual arrangement)

Term I (12 weeks) *Unit:* 1.0

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14.926 Computer Operations Management

Purpose—The course is intended for experienced operators, shift supervisors, or operations manager candidates, to provide theoretical and practical training in operations management.

Objective—On completion of the course the student can expect to understand commonly used techniques and the responsibilities of computer operations management.

Outline—A mixture of lecture, discussion, and practising techniques. Topics include standards policy, department organization and training, budgeting estimating and costing, planning, forecasting and scheduling, performance measurement and personal evaluation.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (12 weeks) *Unit:* 1.0

Prerequisite—14.925 Introduction to Computer Operations and practical operations experience or permission of the Department.

14.927 Introduction to R.P.G. II

Purpose—To provide an introductory course for people who have some data processing knowledge and wish to take training in the fundamentals of programming in R.P.G. II.

Objective—To give students practice in the use of elementary R.P.G. programming techniques and programme documentation, as applied in Business applications.

Outline—The course is a combination of lecture and practical programming, the student will be expected to develop, write, test, and run several programmes.

Topics included in the course include basic R.P.G. logic, input specification, output specification, calculation specifications, and input-output devices.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

Prerequisite—Introduction to Data Processing or working experience in an R.P.G. environment and by permission of the Department.

Due to equipment limitations, this class will be limited to a maximum of 15 students, and preference given to students from R.P.G. environments.

14.928 Introduction to Data Base

Purpose—To provide a basic course in data base concepts for programmer analyst and computer system designers who are familiar with disk characteristics and file organization and who wish to know of alternatives to conventional file structures.

Objective—To familiarize students with the purpose of data base, commonly used data base structures, and data base terminology.

Outline—The course will include the evolution of data structures, advantages of data base concepts, data base utilities, data base applications, and data base implementation. The course format will be lecture followed by lab session during which the student will participate in solving data base problems.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

Prerequisite—Systems Development or permission of the Department.

14.929 Data Base Design

Purpose—To provide training in data base design for data base managers, systems analysts, and senior programmer analysts who need to know the procedures involved in applying data base in a system application.

Objective—To train students in the phases of the data base design cycle.

Outline—The course will include data collection, data relationship analysis, data base structure analysis, data base development and implementation. The course will put heavy emphasis on student participation in workshop sessions.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (12 weeks) *Unit:* 1.0

Prerequisite—Introduction to Data Base Design or permission of the Department.

14.930 Data Communications II

Purpose—This course is the logical extension of the Data Communications I course and takes over where it left off. This course covers the problem

of designing a data communications system and presents the analytical tools necessary in determining the variables (i.e., number of terminals, number of lines, speed of lines, type of terminal, etc.) of such a system.

Objective—The objective of this course is to give the student the necessary quantitative as well as qualitative methods necessary to design a cost effective data communications system.

Outline—The 12-week course will systematically present the analytic tool necessary to develop a data communications system. The terminal through the modems, lines, control units, software, and finally the CPU will be analysed. Basics of probability and statistics and queuing theory will be present so that the design methods will be understood. Various d.c. systems will be modelled and their parameters studied.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (12 weeks) *Unit:* 1.0

Prerequisite—14.921 Data Communications I or permission of the instructor is necessary before admission to this course.

14.931 Probability and Simulation I

Purpose—To provide the basic principles of probability and decision-making under uncertainty and offer an opportunity to apply these principles in the context of computer simulation.

Objective—On completion of this course a person should be able to recognize situations where computer simulation might successfully be applied, be able to develop a simulation model, and communicate the results effectively.

Outline—The course will consist of lectures, tutorials, and lab sessions during which FORTRAN IV computer programmes will be written Baysian statistics, decision-making under uncertainty, Monte Carlo sampling and queuing theory.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

Prerequisite—At least Grade XII mathematics and a working knowledge of the FORTRAN IV computer language.

CERTIFICATES IN FINANCIAL MANAGEMENT

Business Certificate in Accounting

Business Certificate in Auditing

Business Certificate in Finance

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Financial Management may be designed to meet the needs of the individual student.

FINANCIAL MANAGEMENT TECHNOLOGY

Business Certificate in Accounting

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Accounting I (16.900)	1.0	Accounting II (16.901)	1.0	Management in Industry I (10.131)	1.0
Business and Technical Report Writing (31.503)	1.0	Business and Technical Report Writing (31.603)	1.0		
YEAR II					
Introduction to Data Processing (14.901)	1.0	Personnel Management (10.910)	1.0	Elective	1.0
One of:		*One of:*			
Cost Accounting I (16.902)	1.0	Cost Accounting II (16.903)	1.5		
Financial Accounting I (16.504)	1.0	Financial Accounting II (16.604)	1.5		
Marketing Financial Management (16.508)	1.0	Marketing Financial Management (16.608)	1.5		
YEAR III					
Economics I (10.135)	1.0	Economics II (10.235)	1.5		
Credit and Collections (16.909)	1.0	Elective	1.0		

List of Suggested Electives

31.504/604	Business Writing	2.0
16.912	Taxation—Basic	1.0
10.232	Management in Industry II	1.0
22.963	Mathematics for Management	1.5
16.914	Financial Independence	1.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

FINANCIAL MANAGEMENT TECHNOLOGY

Business Certificate in Auditing

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Accounting I (16.900)	1.0	Accounting II (16.901)	1.5	Introduction to Data Processing (14.901)	1.0
Management in Industry I (10.131)	1.0	Personnel Management (10.910)	1.0		
YEAR II					
Auditing (16.506)	1.0	Auditing (16.606)	1.0		
Financial Accounting I (16.504)	1.0	Financial Accounting II (16.604)	1.5		
YEAR III					
Business Law I (10.360)	1.0	Business Law II (10.460)	1.0	Elective	1.0
Elective	1.0	Elective	1.0		

List of Suggested Electives

16.912	Taxation—Basic	1.0
16.913	Taxation—Advanced	1.0
10.232	Management in Industry II	1.0
22.963	Mathematics for Management	1.5
31.503/603	Business and Technical Report Writing	2.0
16.914	Financial Independence	1.0
16.909	Credit and Collections	1.0
31.504/604	Business Writing	2.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

FINANCIAL MANAGEMENT TECHNOLOGY

Business Certificate in Finance

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Accounting I (16.900)	1.0	Accounting II (16.901)	1.5	Elective	1.0
Economics I (10.135)	1.0	Economics II (10.235)	1.5		
YEAR II					
Business Finance I (16.507)	1.0	Business Finance II (16.607)	1.5		
Business Law I (10.360)	1.0	Business Law II (10.460)	1.0		
YEAR III					
Credit and Collections (16.909)	1.0	Security Analysis (16.911)	1.5		
Elective	1.0	Elective	1.0		

List of Suggested Electives

10.131/232	Management in Industry I and II	2.0
16.914	Financial Independence	1.0
22.963	Mathematics for Management	1.5
31.503/603	Business and Technical Report Writing	2.0
31.504/604	Business Writing	2.0
16.912	Taxation—Basic	1.0
16.913	Taxation—Advanced	1.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Financial Management

16.900 Accounting I

Purpose—To permit individuals with little or no accounting background to become familiar with the techniques required in working through the full accounting cycle. This course will provide *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 Accounting II.

Objectives—On completion of the course the student can expect (*a*) to have an understanding of basic accounting functions; (*b*) to be able to maintain the financial records and prepare the financial statements of any small business; and (*c*) to have gained an appreciation for the accounting theory which sets the foundation for accounting procedures.

Outline—A mixture of lectures and laboratories will provide for an interesting course. 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.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15
Tuesday: 6.45–9.45 p.m. *or*	Sept. 16
Wednesday: 6.45–9.45 p.m. *or*	Sept. 17
Thursday: 6.45–9.45 p.m. *or*	Sept. 18
Saturday: 9–12 noon	Sept. 20
Term I (12 weeks)	*Unit:* 1.0

Please indicate a preference of the time you wish to attend and an alternative.

16.901 Accounting II

Purpose—To permit individuals with a basic course in accounting to expand their knowledge of financial and management accounting techniques. This course will provide *theoretical* and *practical* training in these areas. Persons already employed or seeking employment in accounting will find this course helpful in broadening their employment possibilities. It also serves as preparation for 16.902 and 16.903.

Objectives—On completion of the course the student can expect (*a*) to have gained an appreciation for a number of financial and management accounting techniques; (*b*) to prepare and interpret detailed financial statements and management reports; and (*c*) to converse with and understand the requirements of professional accountants.

Outline—A mixture of lectures and laboratories with the undertaking of a practice set will provide for an interesting course. Topics include inventory, long-lived assets, liabilities, forms of business organization, cash-flow analysis, manufacturing accounting, management accounting, income tax, consolidated statements, and analysis of financial statements.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Jan. 12
Tuesday: 6.45–9.45 p.m. *or*	Jan. 13
Wednesday: 6.45–9.45 p.m. *or*	Jan. 14
Thursday: 6.45–9.45 p.m. *or*	Jan. 15
Saturday: 9–12 noon	Jan. 17
Term II (18 weeks)	*Units:* 1.5

Prerequisite—16.900 Accounting I or permission of the instructor if the applicant claims equivalent experience.

Please indicate a preference of time you wish to attend and an alternative.

16.902 Cost Accounting I

Purpose—To enable the student with some background in introductory accounting to understand the basic tools that management can use in planning and controlling the activities of an organization. In addition, problems related to inventory valuation and income determination in manufacturing enterprises will be introduced.

Objective—The successful student will be able to apply the techniques which he has learned to problem areas in his own particular area of employment. He will also be equipped to move on to Cost Accounting II or its equivalent.

Outline—A mixture of lectures and problem-solving periods. The course will emphasize the role of the management accountant, cost terms and purposes, cost-volume-profit relationships, job-order accounting, budgeting, responsibility accounting, and standard costs.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (12 weeks) *Unit:* 1.0

Prerequisite—16.901 Accounting II or its equivalent or permission of the instructor if claiming equivalent experience.

16.903 Cost Accounting II

Purpose—To enable the student who has completed 16.902 or who has considerable practical cost accounting experience, or who 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.

Objective—The successful student will be able to apply these diversified management accounting techniques to his own particular area of employment at the management, cost accounting, or audit level within the business community.

Outline—A mixture of lectures and problem-solving periods. The course will emphasize 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.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14
Term II (18 weeks) *Units:* 1.5

Prerequisite—16.902 Cost Accounting I or permission of the instructor if claiming equivalent experience.

16.904 Accounting for the Manager

Purpose—This course is designed for the manager who wants to understand basic accounting principles without taking a formal introductory accounting course. It will also serve as refresher for those who have taken an introductory course or for persons who wish to know more about the accounting function as a vocation.

Objective—The student completing this course can expect to have a good understanding of the accounting function, the services it can provide to the manager, and how to interpret statements, reports, budgets, etc., in managerial decision-making.

Outline—Through lectures and problem-solving labs the student is exposed to the accounting cycle, inventory valuation and control, depreciation methods, determination of uncollectable accounts, types of liabilities, consolidation, and analysis of financial statements.

Tuesday or Thursday: 6.45–9.45 p.m.	*Begins:* Sept. 16 or 18
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, beginning Tuesday, January 13, or Thursday, January 15, and again in Term III, beginning Thursday, April 8, 1976.

16.909 Credit and Collections

Purpose—To give the student a thorough understanding of the uses of credit in business today at various levels of the economy: (*a*) Government (a brief study only); (*b*) Financial institutions; (*c*) Manufacturing and construction; (*d*) Wholesaling; (*e*) Retailing; (*f*) Hotel, motel, and restaurant credit; (*g*) Consuming.

The course is suitable for the following people: (*a*) Persons contemplating employment in the field who have no or limited previous experience in credit work. (*b*) Persons whose knowledge of credit is specialized, and who wish to broaden their understanding of the subject. (*c*) Persons in areas such as marketing, accounting, etc., to whom a knowledge of credit would be advantageous now or in the future.

Objectives—There will be a detailed examination of credit granting and collection techniques and philosophy in all levels of business. On completion of the course a student can expect (*a*) to be able to handle the complete responsibilities of a credit manager of a small or medium sized business; or (*b*) to assist the credit manager of a larger business in any area of the subject.

Naturally, the experience, age, and ability of each student will govern the level of responsibility attained in industry.

Outline—Each evening there will be a lecture of about one and one-half hours, followed by a discussion of about the same length of time. The discussions will be based on material prepared in advance by each student, based on specified readings from the prescribed text and the previous week's lecture. 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 co-operation; credit history, present and future.

Tuesday: 6.45–9.45 p.m.	*Begins:* Sept. 16
Term I (12 weeks)	*Unit:* 1.0

Classes will be limited to 20 students. If there is sufficient demand, the course may be offered either on an additional evening or again in January.

16.911 Security Analysis

Purpose—To permit persons with little or no knowledge about the stock market or the securities traded thereon to invest more successfully.

Objective—Upon completion the individual should be able to analyse a company and identify the risks associated with investing in a particular company.

Outline—A mixture of lectures and labs. Topics include sources of information, financial analysis, bond and preferred stock analysis, business cycle analysis, technical analysis, taxation, and commodity markets.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Units:* 1.5

16.912 Taxation—Basic

Purpose—To provide individuals who have little or no background in income tax an opportunity to become familiar with the basis of Canadian income tax. This course is designed to assist individuals in completing tax returns and schedules to their best advantage. It should be of particular interest to the small businessmen operating under the form of a limited company, partnership, or sole proprietorship.

Objective—On completion of the course the individual can expect to have gained a general understanding of Canadian income tax and the financial advantage of tax planning.

Outline—A mixture of lectures and discussions will provide for an interest course. Topics include classes of taxpayers; income tax rates and the computation of tax; gross income versus taxable income; computation of income or losses from office, employment, business, and property; capital gains and losses, accounting income versus taxable income; tax evasion and avoidance, tax planning; tax returns, assessments, payment of tax and appeal procedures.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

16.913 Taxation—Advanced

Purpose—To provide a more in-depth study of Canadian taxation than provided in the basic course. This course is designed to broaden and further the knowledge of individuals who have a "working knowledge" of Canadian taxes.

Objectives—Upon completion of this course, the individual can expect a better-than-average knowledge of the subject and be acutely aware of the problem areas and pitfalls regarding tax planning.

Outline—The course is designed to be a discussion-type course rather than a lecture course. Topics include concept of income, computation of income —employment, business, property; capital cost allowance and cumulative eligible capital, capital gains and losses, computation of tax for corporations; corporate distributions; trusts and partnerships; sales taxes (Federal and Provincial); estate taxes and succession duties.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (12 weeks) *Unit:* 1.0

Prerequisite—16.912 Taxation—Basic or permission of the instructor.

16.914 Financial Independence

Purpose—A course designed to introduce students to a variety of savings and investment aspects to build a sound programme to achieve their long-term financial goal.

Objective—At the conclusion of the course the student should be in a position to follow an investment programme tailored to his needs.

Outline—A mixture of lectures and discussions will provide for an interesting course for individuals of all ages. Topics include money management, life insurance, investments and portfolio distribution, home ownership, wills and estates.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

This course repeats in Term II, beginning Thursday, January 15, 1976.

16.504 Financial Accounting I

16.604 Financial Accounting II

Purpose—To provide students who have successfully completed the study of introductory accounting with an opportunity to enrich and broaden their understanding of the accounting process and its underlying theory. This will equip them for more responsible employment in the accounting field.

Objectives—On completion of the course a student can expect to (*a*) have sufficient accounting knowledge to perform competently in an intermediate-level financial accounting position; (*b*) have determined his affinity and aptitude for more advanced accounting study; and (*c*) have gained exemption from the equivalent course offered by a professional accounting body (subject to achieving a prescribed mark) should the student decide to seek a professional qualification.

Outline—Each weekly session will consist of lecture and discussion segments and a period of supervised practical work on weekly problem assignments.

The course is generally concerned with developing company financial information and properly presenting it on financial statements prepared for external circulation. Specifically, it will include a review of the accounting process from a more analytical standpoint; a study of cost, valuation, and presentation problems associated with each balance sheet category; statements from incomplete data; income tax allocations; and internal and external analysis of financial statements, including preparation and use of funds flow information.

PART I

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

16.504 Term I (12 weeks) *Unit:* 1.0

PART II

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

16.604 Term II (18 weeks) *Units:* 1.5

16.507 Business Finance I

Purpose—To familiarize the individual with little or no background in the field of financial management with the various methods of optimizing the firm's economic position.

Objective—To train the individual in Business Finance in order that the student, as a member of middle management, may make the best decisions on the financing of the firm.

Outline—The course combines 12 lectures and discussions on topics, including control and financial management of the business firm, a study of profit planning, cash and capital budgeting, as well as inventory control.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18
16.507 Term I (12 weeks) *Unit:* 1.0

Prerequisite—A working knowledge of accounting is helpful.

16.607 Business Finance II

Purpose—To familiarize the individual with the various methods of obtaining finances for the firm.

Objective—To teach the student how to obtain capital in order to finance the firm.

Outline—The course combines 18 lecture and discussions on topics, including 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.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15
16.607 Term II (18 weeks) *Units:* 1.5

16.508/608 Marketing Financial Management

Purpose—This course is directed at the sales and junior marketing manager who perceives the need to develop quantitative skills as they apply to the marketing situation.

Objective—Using accounting information, the students will approach a number of marketing decisions quantitatively, including product mix, sell or process further, make or buy, pricing decisions, and risk selection.

Outline—In addition, planning and control techniques will be discussed, including profit planning, resource and liquidity planning, inventory planning and control, profit, investment and cost centres, and reporting for revenue control.

Emphasis will be placed on skill development through problem-solving both at home and in class. This will be supported and enlarged upon in lectures.

Familiarity with fundamental financial accounting and linear algebra, while not prerequisite, is recommended.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
16.508 Term I (12 weeks)
16.608 Term II (18 weeks) *Units:* 2.5

16.905 Accounting I L

To permit students to start a basic course in accounting in January for those who were unable to begin a course the previous September. The course is for 18 weeks, enabling students to complete 16.901 the following fall term.

For details pertaining to course purpose, objectives, and outline, students are requested to read the material describing 16.900 and 16.901.

For succeeding course, *see* 16.906.

Wednesday or Thursday: 6.45–9.45 p.m. *Begins:* Jan. 14 or 15
Term II (18 weeks) *Units:* 1.5

16.906 Accounting II S

A follow-up course from 16.901 L to enable students to complete the last two-thirds of the material contained in the 16.902 course.

For details pertaining to course purpose, objectives, and outlines, students are requested to read the material describing 16.900 and 16.901.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

16.506/606 Auditing

Purpose—To equip the student with knowledge and skills relative to auditing techniques and procedures that will prove helpful to him in entering employment in such fields as public accounting, internal auditing, or management in any business.

Objectives—On completion of the course the student can expect to (*a*) have an understanding of the meaning and purpose of audit functions; and (*b*) to be able to make critical assessments of accounting procedures and to prepare opinions of them.

Outline—A mixture of lectures, discussions, and the undertaking of a short audit case will provide for an interesting course. Topics include basic auditing procedures, the audit programme, features of the internal control system, plus internal and other specialized audits.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

16.506 Term I (12 weeks)

16.606 Term II (12 weeks) *Units:* 2.0

Prerequisite—16.901 Accounting II or equivalent. Admission may also be granted with permission of the instructor.

CERTIFICATE IN HOSPITALITY INDUSTRY

Business Certificate in Hospitality Industry Management

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Hospitality Industry Management may be designed to meet the needs of the individual student.

HOSPITALITY INDUSTRY

Business Certificate in Hospitality Industry Management

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Front Office Procedures (18.203)	1.0	Night Audit Procedures (18.418)	1.0	Elective	1.0
Accounting I (16.900)	1.0	Cocktail Lounge Management (18.907)	1.0		
YEAR II					
Introduction to Food and Beverage Management (18.503)	1.0	Introduction to Food and Beverage Management (18.603)	1.5	Elective	1.0
Food and Beverage Control (18.313)	1.0	Marketing and Sales Promotion for the Hospitality Industry (18.907)	1.5		
YEAR III					
Quantity Food Production (18.904)	1.0	Legal Problems in the Hospitality Industry (18.317)	1.0		
Introduction to Hospitality Management Accounting (18.908)	1.0	Profitable Restaurant Operations (18.912)	1.0		

List of Suggested Electives

18.909	Restaurant Planning	1.0
14.901	Introduction to Data Processing	1.0
18.422	Menu Planning and Study of Wines	1.0
18.510/610	Travel Agents Course	2.5
18.501/601	Institutional Food Service Management	2.0
18.902	Beer Parlour Management	1.0
18.905	Supervisory Development for Hotel and Food Services Personnel	1.0
18.906	Private Club Administration	1.0
18.910	International Air-travel Agents	1.0
10.135	Economics I	1.0
10.235	Economics II	1.5
16.901	Accounting II	1.5
16.909	Credit and Collections	1.0
22.936	Basic Mathematics of Finance	1.0
22.941	Work Study I	1.0
31.504/604	Business Writing	2.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Hospitality Industry

18.203 Front Office Procedures

Purpose—To allow persons with little or no hotel/motel experience to explore the industry as a possible career field. Specifically, this course will provide theoretical and simulated practical training in most aspects of front office operation. Persons already employed in hotels/motels will find this course helpful in broadening their employment possibilities. It also serves as preparation for course 18.418 Night Audit Procedures.

Objectives—On completion of the course a student can expect to (*a*) be knowledgeable of the specific functions of the front office department in a hotel or motel; (*b*) be capable of performing standard postings on a NCR 4200 accounting machine; and (*c*) be able to perform the duties of a junior front-desk clerk in a hotel or motel (after a brief period of on-the-job training).

Outline—A mixture of lectures, discussions, and simulated practice sessions will provide for an interesting course. Topics include; Who does what in a hotel or motel; personal requirements to be a front-desk clerk; reservation systems; credit procedures; dealing with guests, management, and fellow employees; effective sales technique; cash handling; what to do in an emergency; operating a NCR 4200 accounting machine; career opportunities.

Monday or Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 15 or 16

Term I (12 weeks) *Unit:* 1.0

Classes will be limited to 20 students. Please indicate preference of the evening you wish to attend. The course will be offered again in Term II, beginning Tuesday, January 13.

18.313 Food and Beverage Control

Purpose—To allow persons who are interested in the catering field to gain an understanding of internal control procedures and information systems. The course will deal particularly with the interpretation of data obtained through such procedures/systems to allow for the making of corrective management decisions. Participants should enjoy working with figures and basic arithmetic calculations. Previous experience or related course work would be helpful, though not necessary.

Objective—To teach the fundamentals of internal control and information systems for food and beverage operations of all types. Emphasis will be given to the interpretation of information supplied by the control systems in order that meaningful and appropriate decision-making and action can be taken in sufficient time to correct undesirable results or trends.

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

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Monday, January 12.

18.317 Legal Problems in the Hospitality Industry

Purpose—To give persons at any job level within the hospitality industry an opportunity to learn about the legal side of the operation of a hotel, motel, or restaurant. The course will be taught by a lawyer. No formal background is required; some experience in the field, however, would help to make this course more meaningful.

Objective and outline—On completion of the course a student can expect to be familiar with the following topics: Common law of contract, tort, bailment, employment, and agency, property (real and personal), partnerships, and corporations; statutory enactments dealing with sale of goods, human rights, methods of securing debts, working conditions, crime, labour relations, liquor and health licensing.

A combination of lectures and case discussions will be used.

Wednesday: 6.45–9.45 p.m.	*Begins:* Jan. 14
Term II (12 weeks)	*Unit:* 1.0

18.418 Night Audit Procedures

Purpose—To prepare persons for work as night audit clerks in the hotel and motel industry. This is an advanced course; participants are expected to have had some practical experience in front office work or have completed course 18.203 Front Office Procedures. An interest in working with figures is the only other prerequisite.

Objective—On completion of the course a student can expect to be able to understand and perform standard night audit procedures using either the hand transcript or an NCR 4200 system. With such training a person would be prepared to enter the hospitality industry as a junior night auditor.

Outline—The course is problem-oriented. Practical exercises are designed to simulate typical hotel/motel situations. Small classes allow for close instructor/student contact.

Saturday: 9 a.m.–1 p.m.	*Begins:* Jan. 17
Term II (9 weeks)	*Unit:* 1.0

The class will be limited to 12 participants.

18.422 Menu Planning and Study of Wines

Purpose—To allow persons with limited experience in the food service industry to gain theoretical and practical experience in the planning and design of menus. A thorough discussion of Canadian and foreign wines forms part of the course.

Objective—On completion of the course a student can expect to (*a*) be knowledgeable about 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, costing; (*b*) be able to analyse the above data and compose suitable menus; (*c*) be able to advise management on layout, colour, print-type, and manufacture of actual menus; and (*d*) be knowledgeable about wines, including their manufacture, purchase, storage, service, and co-relation to foods on the menu.

Outline—Lectures and discussions will be used to introduce new material, followed by practical exercises that will allow the students to apply theory to practice. Some take-home assignments will be given.

Those persons who have had no field experience are advised to take course 18.904 Quantity Food Production first.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15
Term II (12 weeks) *Unit:* 1.0

18.501/601 Institutional Food Service Management

Purpose—To allow persons with limited or no experience in the commercial food service field to become aware of the multiple aspects of the management tasks. Having taken this course, a person will be prepared to take more specialized courses, i.e., Menu Planning, Restaurant Planning, Quantity Food Production. In the meantime, he will have gained a comprehensive over-all picture of the catering management field.

Objective and outline—On completion of the course a person can expect to have a fundamental understanding of the following topics as they relate to food service management: Food service design and layout; bar design; interior design; menu planning; fire prevention and safety; food hygiene and food handling; accounting procedures; personnel administration; staff training; marketing; business mathematics.

Lectures, discussions, and problem-solving exercises will be used; a behind-the-scene visit to a Vancouver restaurant operation is planned.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
18.501 Term I (12 weeks)
18.601 Term II (12 weeks) *Units:* 2.0

18.510/610 Travel Agents

Purpose—The preliminary course will provide a basic introduction of travel agency work. It will permit persons with an interest in the travel field to become familiar with the terminology used in the industry, the structuring of itineraries, and the fundamentals of air, steamship, rail, and bus transportation, tours, and hotels.

Objective—On completion of the course the student will be able to handle, under supervision, the services performed by the travel agent, or to act in a referral capacity to agents wishing to enlarge their sales market. It will also benefit those already working in the industry by improving upon general knowledge and selling techniques.

Outline—The following will be covered by lectures, slides, and illustrations:

Air: Domestic (Canada and the U.S.A.): Schedules, fare construction, rules, ticketing procedures, family plan, fare discounts, joint fares, pay-later plans, etc.

Steamship: Passenger transportation, cruises, and freighter travel.

Tours: Domestic and international tour packages, independent and escorted tours, air tours, ITC's, etc.

Rail: International and domestic rail transportation, fares and ticketing.

Bus: Domestic and international schedules and fares.

Other: Hotels, car rental, customs and immigration, health requirements, insurance, etc.

Monday or Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 15 or 17
18.510 Term I (12 weeks)
18.610 Term II (18 weeks) *Units:* 2.5

Limited to 90 students per night.
For International Air, *see* 18.910.

18.901 Cocktail Lounge Management

Purpose—To allow persons with some work experience in a cocktail lounge to expand their understanding of bar management in order to broaden their career opportunities in this fast-expanding field.

Objective—Upon completion of the course a student can expect to be able to perform the mixing of standard bar drinks and understand the principles and practices of modern cocktail lounge management.

Outline—Typical session would be divided into time for lecture, discussions, and practice sessions in the training bar. Topics include drink mixing, wine storage and service, bar design and layout, Liquor Administration Branch regulations, inventory control, cost control, menus, customer service, staffing.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Tuesday, January 13, 1976.

18.902 Beer Parlour Management

Purpose—To give those presently working in public houses (beer parlours), or in some other department of a hotel, a familiarity with management methods and problems related to beer parlour administration. For those at present in beer parlour management the course might be useful in bringing them up to date with new approaches and new techniques.

Objective—To improve standards and profitability of beer parlours. Upon completion of the course a person presently working in a beer parlour at a nonmanagerial level will find himself better equipped to move into management; a person working in some other department will have a better understanding of beer parlour management; and a person who is presently a beer parlour manager should be able to improve his own operation.

Outline—The course will cover purchasing, storage, handling, and selling of beer and other related products sold in beer parlours. Other topics will include sanitation, *Government Liquor Act* regulations, and staffing and labour control.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

18.503/603 Introduction to Food and Beverage Management

Purpose—To allow persons with limited or no experience in the food service industry to become aware of the multiple aspects of management tasks. Having taken this course, a person will be prepared to take more specialized courses, i.e., Menu Planning, Restaurant Planning, Quantity Food Production. In the meantime, he will have gained a comprehensive over-all picture of the catering management field.

Objective—On completion of the course a person can expect to have a fundamental understanding of food service management; lectures, discussions, and problem-solving exercises will be used to cover the various topics.

Outline—Food hygiene; food service design and layout; personnel administration; storage, identification, classification, and selection of foods; menu planning; operational cost control.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15
Term I (12 weeks)
Term II (18 weeks) *Units:* 2.5

18.904 Quantity Food Production

Purpose—To allow persons to study the management aspects of food production as they apply to restaurants, cafeterias, and related public eating facilities. This is not a cooking course; participants are expected to have some previous experience in the food production field. This course serves as preparation for course 18.422 Menu Planning.

Objective—On completion of the course a student can expect to be able to define and understand management procedures related to food-costing, food-loss control, kitchen sanitation and safety, standard recipes and standard food production methods and evaluation, and costing of test products. Furthermore, the student will be able to understand and perform basic food-preparation skills. An increased awareness of recent innovations in the area of equipment design and production methods can also be expected.

Outline—Lectures and discussions will be used to introduce the material. The practical aspects of food production will be explored in our fully equipped Food Production Laboratory.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18
Term I (12 weeks) *Unit:* 1.0

18.905 Supervisory Development for Hotel and Food Service Personnel

Purpose—To allow persons with practical experience in some aspects of the industry to explore problematic aspects of human relations and develop skills necessary to function as supervisors. Participants may be presently employed in junior/middle management positions or wanting to prepare themselves for a move in that direction.

Topics dealt with will be directly related to interpersonal relations with guests, fellow-workers, owner/managers, and people outside the operation. This course is not designed to prepare a person for one particular job, rather it will provide opportunity for personal learning and growth and thus help the individual to be a better, more meaningful functional person on the job and away from it.

Objective—On completion of the course the student can expect to (*a*) have gained an understanding of theoretical principles involved in interpersonal relationships; (*b*) be familiar with specific skills which can be used to improve interpersonal communications; (*c*) be knowledgeable of and be able to deal with some of the problem areas that arise when acting in a supervisory role; (*d*) have learned how he/she reacts in different situations and how others react in different situations; (*e*) have had experience in problem-solving and decision-making techniques.

Outline—A mixture of small lectures, discussions, case studies, communication exercises, films, and selected readings will be used to make the course meaningful to each participant. Specific course topics within the framework of this outline will be selected by the students and the instructor.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (12 weeks) *Unit:* 1.0

18.906 Private Club Administration

Purpose—To provide information to those people presently employed in the hospitality field of the academic and technical requirements in order to manage a private club.

Objective—To offer a course that will provide the necessary information to enable a person to, first, decide on their adaptability to the club field; and, secondly, provide an outline of the personal involvement and skills necessary to succeed in the club field.

Outline—The course will cover private club administration in the specific area of food and beverage, building and property, executive development, constitution and by-laws, and related sports activities such as golf, tennis, swimming-pools, and curling.

Tuesday: 6.45–9.45 p.m. — *Begins:* Sept. 16
Term I (12 weeks) — *Unit:* 1.0

18.907 Marketing and Sales Promotion for the Hospitality and Tourism Industry

Purpose—To serve as basic material for an individual wishing to advance into a sales and marketing capacity, broaden his existing managerial skills, or enter the hospitality or tourism field by operating one's own business.

Objective—To give the individual an understanding of the use to which sales and marketing skills can be put, with particular reference to the hospitality and tourism industry. Although the course, of necessity, is primarily theoretical, weekly in-class and take-home assignments will give the student a chance to apply the theory.

Outline—Major topics include defining the product and the consumer, the feasibility study, developing a marketing plan, establishing prices, the elements of advertising, sales promotion and merchandising, interaction between elements of the tourism industry, marketing tools and sales agents, internal promotion, brochure planning, incentive schemes.

Monday: 6.45–9.45 p.m. — *Begins:* Jan. 12
Term II (18 weeks) — *Unit:* 1.5

18.908 Introduction to Hospitality Management Accounting

Purpose—To allow persons with some background in accounting to study principles and procedures of hospitality management accounting. An understanding of general accounting principles is necessary to benefit fully from the course. If you are interested and not too sure about this or other aspects of the outline, consult the counsellor prior to registration.

Objective—To obtain an understanding of departmental income statements and balance sheets in order to be able to interpret and analyse the results and information shown; and to learn the use of management tolls such as the break-even technique, budgeting, and investing.

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

Thursday: 6.45–9.45 p.m. — *Begins:* Sept. 18
Term I (12 weeks) — *Unit:* 1.0

18.909 Restaurant Planning

Purpose—To allow persons to gain theoretical and simulated practical experience in planning a food-service operation from the initial concept to the eventual opening. Experience at the operational or supervisory level in the food service industry is required. This course is primarily aimed at persons who expect to be involved in the planning of a new operation or alteration to existing facilities.

Objectives—On completion of the course a participant can expect to understand and be able to initiate a thorough planning procedure for the establishment of a restaurant or similar food-service operation.

Outline—The participants will 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; management; location; menu development; staffing; equipment; buildings; layout; financing; promotion and operational planning.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

18.910 International Air-Travel Agents

Purpose—This six-hour-per-week course for six weeks is a concentrated presentation for people who have completed 18.510/610 or for those with experience in the industry who will benefit from in-depth training in this particular subject.

Objective—Successful students will be able to handle all facets of international air travel tariffs for travel agencies.

Outline—The material presented will include international tariffs, rules and regulations, fares, mileage system, fare constructions, and ticket issuance.

Monday and Wednesday: 6.45–9.45 p.m. *Begins:* May 20

Term III (6 weeks) *Unit:* 1.0

Prerequisite—Completion of 18.510/610 Travel Agents Course or at least one year of travel agency experience and permission of the instructor.

Limit: 40 students.

18.911 Profitable Restaurant Operation

Purpose—This course permits persons who are involved in the restaurant business to question and analyse their particular cost problems and solutions. This detailed course is directed at persons who are desirous of reducing operational restaurant costs.

Objective—The success of this course can be determined on a weekly basis as the participant may institute suggestions for cost reduction immediately within his operation and the results can be established quickly.

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

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

18.912 Introduction to Tourism

Purpose—To define tourism, what it has to offer and its scope at both the national and international level, and to define the relationship between tourism and the travel business.

Objective—To offer to those both interested in knowing about tourism, and to those already employed in the industry, a course covering the economic, sociological, and environmental aspects of tourism. The objective is to enhance the individual's knowledge about why people travel, what various destinations have to offer, and why particular destinations are more popular than others.

Outline—The course will cover destination and travel structure of tourism in Canada and the rest of the world; the sociology and psychology of travel; the current trend in creating new destinations; Government involvement in tourism; travel marketing; the function of tour operators; transportation requirements; and the future of tourism in Canada.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

This course may be repeated in January, depending on demand.

18.913 Understanding Wines and Spirits

Purpose—To enable the student to gain an understanding of the origins, manufacture, characteristics, storage, service, compatability with foods, and selling aspects of wines and spirits. Specific reference will be made to products available in British Columbia. The course is primarily aimed at personnel in the hotel and restaurant field, but would also be of interest to the general public.

Objectives—At the conclusion of the course a student could expect to (*a*) be capable of describing the characteristics of a popular range of products available in British Columbia; (*b*) describe the manufacturing process of wines and spirits; (*c*) be knowledgeable about the storage and service procedures appropriate to each product; (*d*) be able to select wines and spirits to harmoniously enhance the consumption of food.

Outline—Through discussions, lectures, film and slide presentations the following topics will be covered: How wine is made; how one wine differs from the other; where wines come from (specifically Canada, U.S.A., Australia, France, Germany, south and east Europe); wines and food; storage; service; sales promotion; the manufacture and characteristics of various spirits (i.e., whisky, gin, brandy, Kirschwasser, rum).

A visit to a local winery and a testing session are planned. Students are expected to do some home reading.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
Term I (12 weeks)	*Unit:* 1.0

This course may be repeated in Term II, depending on the demand.

CERTIFICATES IN EXECUTIVE HOUSEKEEPERS PROGRAMME

Certificate Programme for Executive Housekeepers

EXECUTIVE HOUSEKEEPERS PROGRAMME

Certificate Programme for Executive Housekeepers

BCIT in co-operation with the National Executvie Housekeepers Association, British Columbia Chapter, offers this programme of interest to persons in housekeeping and related positions in hospital, hotel, and other institutions.

Prospective students should get in touch with the local chapter of NEHA for certification requirements. The first two years of the programme offered by BCIT will meet the NEHA Group I, II, III, and IV requirements of certification.

Students who have previously completed Group I, II, III, and (or) IV will be given credit under this programme.

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Basic Social Sciences and Communication (19.901)	1.0	Purchasing (20.901)	1.0	Elective	1.0
Maintenance and Control (19.902)	1.0	Safety and Sanitation (19.905)	1.0		
YEAR II					
Accounting for the Manager (16.904)	1.0	Basic Interior Design (19.903)	1.0	Elective	1.0
Supervisory Skills (10.904)	1.0	Selection Interviewing (10.913)	1.0		
YEAR III					
Discussion Leadership (10.907)	1.0	Accident Prevention (10.918)	1.0	Elective	1.0
Management Psychology I (10.221)	1.0	Management Psychology II (10.321) or Organizational Behaviour (10.906)	1.0		

List of Suggested Electives

22.941/942	Work Study I and II	2.5
76.501/601	Fundamentals of Health Care Management	2.0
10.910	Personnel Management	1.0
10.501/601	Salary Administration	2.0

10.325/425	Labour Relations I and II	2.0
10.360/460	Business Law I and II	2.0
76.502/602	Supervisory Methods	2.0
10.131/232	Management in Industry I and II	2.0
20.502/602	Oral Communications and Public Speaking I and II	2.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Executive Housekeeping

19.901 Basic Social Sciences and Communications for Executive Housekeepers

Purpose—To assist those individuals interested in housekeeping and related positions in hospitals, hotels, and other institutions to become better supervisors and to prepare them for future advancement.

Objectives—On completion of this course the student can expect to be more knowledgeable in understanding (*a*) interests and needs of various social and age groups and the individual as a member of multiple group; (*b*) human relations; (*c*) leadership abilities; (*d*) unions and labour relations; (*e*) communications, its meaning and the skills used for effective communications.

Outline—A mixture of lectures, discussions, case studies, problem-solving, and role-playing will provide for an interesting course. Topics include public relations, decision-making leadership, sociology, investigation of behaviour, human relations, psychology, demand and supply, inflation, unions, economics, methods of communications, reports, memos, letter-writing, skills required in effective communications.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Units:* 1.0

19.902 Maintenance and Control for Executive Housekeepers

Purpose—To prepare candidates for a supervisory role in the housekeeping field and to assist people in this line of work who have not had formal training.

Objective—Students will acquire considerable depth of understanding of maintenance from a supervisory viewpoint and in particular of the chemicals involved in the various types of maintenance.

Outline—Lectures. demonstrations, visual aids and viewing equipment will provide knowledge of chemicals, disinfectants, equipment and techniques for maintaining floors, carpets, windows, blinds, etc., with particular attention to hotel, hospital, and institutional maintenance.

Wednesday: 7–9 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Units:* 1.0

19.903 Basic Interior Design

Purpose—Although initially designed for executive housekeepers, this course has broadened to be of interest and value to people in industry and in the domestic environment. Also, recently graduated students seeking a career find it a useful means of evaluating the field as a possible career.

Objective—Students completing these 12 weeks have a good understanding of the interior design art form.

Outline—Through lectures, slides, class projects, assignments, and practical exercises the instructor covers the principal elements of design as they relate to the interior environment—balance, emphasis, rhythm, and proportion. It includes how to influence the home through effective colour schemes, lighting arrangements, space planning, form or shape relationship, linear effects, and interesting textural compositions.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

19.905 Safety and Sanitation

Purpose—This presentation is for executive housekeepers, those persons who are desirous of achieving such such a position, and anyone who may benefit from knowledge in this area of expertise.

Objectives—The student will acquire a sound understanding of the causative factors of diseases and the methods available to control its incidence. The student will be able to identify physical and chemical safety hazards and utilize established methods to protect himself and others.

Outline—Presentation will be made from a composite of lectures, visual aids, demonstrations, and discussion sessions. Specific topics that will be covered are: Sanitation—terminology, related bacteriology, behaviour 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, flowable and corrosive liquids, tools and machinery, accident prevention, safety training, radioactive materials, fire hazards, disaster planning, evacuation, and case studies.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

Purchasing for Executive Housekeepers (see 20.901 Purchasing)

These courses have been combined with credit for the Certificate Programme for Executive Housekeepers.

4

CERTIFICATES IN MARKETING MANAGEMENT TECHNOLOGY

Business Certificate in Industrial Marketing

Business Certificate for Technical Sales Representative

Business Certificate in Travel Marketing and Management

Business Certificate in Advertising and Public Relations

Business Certificate in Retail Merchandising

Business Certificate in Traffic and Transportation Management

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Marketing Management Technology may be designed to meet the needs of the individual student.

MARKETING MANAGEMENT TECHNOLOGY

Business Certificate in Industrial Marketing

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Marketing (20.180)	1.0	Marketing (20.280)	1.5		
Management in Industry I (10.131)	1.0	Management in Industry II (10.232)	1.0	Elective	1.0
YEAR II					
Accounting for the Manager (16.904)	1.0	Elective	1.0		
Business and Technical Report Writing (31.503)	1.0	Business and Technical Report Writing (31.603)	1.0	Elective	1.0
YEAR III					
Elective	1.0	Elective	1.0		
Elective	1.0	Elective	1.5		

List of Suggested Electives

		Units
20.275	Salesmanship	1.0
20.903	Marketing Research	1.0
20.389	Marketing and Customer Behaviour	1.0
20.910	Advertising I	1.0
20.912	International Trade	1.0
20.476	Sales Management	1.0
10.135/235	Economics I and II	2.5
22.535/635	Statistics for Business and Industry	2.0
31.504/604	Business Writing	2.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

MARKETING MANAGEMENT TECHNOLOGY

Business Certificate for Technical Sales Representative

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Marketing (20.180)	1.0	Marketing (20.280)	1.5		
Management in Industry I (10.131)	1.0	Technical Elective	1.5		
YEAR II					
Salesmanship (20.275)	1.0	Marketing and Customer Behaviour (20.389)	1.0		
Work Study I (22.941)	1.0	Work Study II (22.942)	1.5		
YEAR III					
Technical Elective*	1.0	Market Planning (20.387)	1.0	Elective	1.0
Elective	1.0	Elective	1.5		

List of Suggested Electives

		Units
16.904	Accounting for the Manager	1.0
20.476	Sales Management	1.0
20.910	Advertising I	1.0
20.911	Advertising II	1.5
22.961	Materials Handling I	1.0
22.551/651	Systems Analysis	2.5
22.953	Project Planning and Scheduling	1.0
22.963	Mathematics for Management	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

* Technical Elective: Any approved course taken from the Engineering section.

MARKETING MANAGEMENT TECHNOLOGY

Business Certificate in Travel Marketing and Management

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Travel Agents Course (18.510)	1.0	Travel Agent Course (18.610)	1.5	International Air-Travel Agents (18.910)	1.0
Marketing (20.180)	1.0	Marketing (20.280)	1.5		
YEAR II					
Advertising I (20.910)	1.0	Public Relations (20.906)	1.0		
Management in Industry I (10.131)	1.0	Management in Industry II (10.232)	1.0		
YEAR III					
Personnel Management (10.910)	1.0	Elective	1.5		
Accounting for the Manager (16.904)	1.0	Elective	1.5		

List of Suggested Electives

		Units
20.275	Salesmanship	1.0
20.476	Sales Management	1.0
20.911	Advertising II	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

MARKETING MANAGEMENT TECHNOLOGY

Business Certificate in Advertising and Public Relations

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Marketing (20.180)	1.0	Marketing (20.280)	1.5	Elective	1.0
Advertising I (20.910)	1.0	Advertising II (20.911)	1.5		
YEAR II					
Management in Industry I (10.131)	1.0	Public Relations (20.906)	1.0	Elective	1.0
Elective	1.0	Elective	1.0		
YEAR III					
Business and Technical Report Writing (31.503)	1.0	Business and Technical Report Writing (31.603)	1.0		
Elective	1.0	Marketing and Customer Behaviour (20.389)	1.0		

List of Suggested Electives

		Units
20.275	Salesmanship	1.0
10.232	Management in Industry II	1.0
22.551/651	Systems Analysis	2.0
22.963	Mathematics for Management	1.5
14.901	Introduction to Data Processing	1.0
16.909	Credits and Collections	1.0
31.504/604	Business Writing	2.0

See Broadcast Communications Certificate for other possible electives.

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

MARKETING MANAGEMENT TECHNOLOGY

Business Certificate in Retail Merchandising

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Marketing (20.180)	1.0	Marketing (20.280)	1.5		
Management in Industry I (10.131)	1.0	Management in Industry II (10.232)	1.0		
YEAR II					
Retailing (20.384)	1.0	Merchandising (20.472)	1.5		
Advertising I	1.0	Salesmanship (20.275)	1.0	Elective	1.0
YEAR III					
Elective	1.0	Marketing and Customer Behaviour (20.389)	1.0	Elective	1.0
Elective	1.0	Elective	1.0		

List of Suggested Electives

		Units
20.903	Marketing Research	1.0
20.387	Market Planning	1.0
31.503/603	Business and Technical Report Writing	2.0
16.909	Credit and Collections	1.0
16.904	Accounting for the Manager	1.0
20.476	Sales Management	1.0
22.963	Mathematics for Management	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

MARKETING MANAGEMENT TECHNOLOGY

Business Certificate in Traffic and Transportation Management

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Management in Industry I (10.131)	1.0	Traffic and Transportation (20.902)	1.5		
Economics I (10.135)	1.0	Economics II (10.235)	1.5		
YEAR II					
Accounting I (16.900)	1.0	Accounting II (16.901)	1.5	Elective	1.0
Elective	1.0	Elective	1.0		
YEAR III					
Marketing (20.180)	1.0	Marketing (20.280)	1.5		
Elective	1.0	Elective	1.0		

List of Suggested Electives

		Units
20.912	International Trade	1.0
20.901	Purchasing	1.0
22.961	Materials Handling I	1.0
22.962	Materials Handling II	1.0
20.913	Transportation Trends and Economics	1.5
10.325/425	Labour Relations I and II	2.0
22.963	Mathematics for Management	1.5
14.901	Introduction to Data Processing	1.0
31.503/603	Business and Technical Report Writing	2.0
10.360/460	Business Law I and II	2.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Marketing Management

20.180/280 Marketing

Purpose—An introductory course for those who plan a career in marketing or related fields.

Objective—The primary objective of this course is to give the student a sound idea of marketing principles as it relates to the different activities in a firm.

Outline—The course will cover (1) the role of marketing management; (2) marketing research; (3) consumer behaviour; (4) the industrial market; (5) product planning and development; (6) distribution structure; (7) pricing; (8) promotion; and (9) marketing planning.

There will be lectures followed by participative discussions on specific marketing problems. A term project involving the marketing of a new product is usually a part of the course. Students will be exposed to basic techniques of marketing research and directed to analyse specific problems.

Monday: 6.45–9.45 p.m. *or*	*Begins:* Sept. 15
Tuesday: 6.45–9.45 p.m. *or*	Sept. 16
Wednesday: 6.45–9.45 p.m. *or*	Sept. 17
Saturday: 9–12 noon	Sept. 20
20.180 Term I (12 weeks)	
20.280 Term II (18 weeks)	*Units:* 2.5

Please indicate a choice of time you wish to attend.

20.914 General Marketing

Purpose—To provide an introductory course in marketing for persons who wish to have a short 12-week course rather than the longer combined Marketing Course. This course will be useful to persons concentrating their studies in areas other than marketing who wish limited exposure to the field of marketing. It also may be used by persons employed in the field of marketing or studying that area who, because of the nature of their work, can only commit a shorter period of time. Students who complete the course may go on to take the more advanced Marketing Courses or they may take at some future date the Marketing 280 portion of the Marketing Course. In the latter case, however, there will be some overlap.

Objective—The students will be given many concepts in the general field of marketing and asked to relate these to their own business situation and thereby see how the theory does apply to a situation to which they are familiar. Hopefully this will provide the students with a conceptual framework of marketing in their own firm as well as a theoretical understanding of this discipline.

Outline—The course will cover market grid analysis, marketing concept, uncontrollable factors, total product, market segmentation, product differentiation, packaging, branding, product classification for consumer and industrial goods, product life cycle, style and fashion, place utility objectives and channels of distribution, retailing, wholesaling, promotion blending, pricing policies. Students will be expected to answer questions on examina-

tions on the readings from the textbook as assigned and as well make an oral and written presentation relating the lecture and textbook material to their firm or to some business situation, should they not be employed.

Monday or Thursday: 6.45–9.45 p.m.	*Begins:* Sept. 15 or 18
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II and Term III.

Please indicate a choice of time you wish to attend.

20.275 Salesmanship

Purpose—To provide basic sales training for the sales aspirant and to give those already in the sales field who have had no formal training an understanding of the mechanics of salesmanship.

Objective—To provide the trainee with sufficient knowledge and skills to seek a career in the sales field. For those already in sales and who have had no formal training an opportunity to make an in-depth study of the mechanics of salesmanship and develop their skills to a professional level.

Outline—Through a series of lectures, reading assignments, and the use of training film the student covers the pre-approach, approach, demonstration/presentation, handling of objections and closing techniques.

Students will 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 discussion proves to be of great assistance to the student.

Wednesday: 6.45–9.45 p.m. *or*-	*Begins:* Sept. 17
Thursday: 6.45–9.45 p.m. *or*	Sept. 18
Saturday: 9 to 12 noon	Sept. 20
Term I (12 weeks)	*Unit:* 1.0

Please indicate a choice of time you wish to attend.

This course will repeat in Term III, beginning Tuesday, January 13, or Thursday, January 15, 1976.

This course will repeat in Term III, beginning Tuesday, April 6, 1976.

20.384 Retailing

Purpose—To teach the student retailing principles and methods and to expose him/her to retailing strategies in a competitive environment. Small-scale as well as large-scale retailing dealt with. Marketing 20.180/280 highly recommended before taking this course.

Objectives—To give the student an understanding of sound retailing management principles, and to deal with typical problems in retailing.

Outline—Principles of retail location and layout, trading area analysis, principles of retail gravitation, retail strategies trends in large and small-scale retailing, shrinkage problems, productivity, and sales promotion.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
Term I (12 weeks)	*Unit:* 1.0

20.387 Market Planning

Purpose—To assist persons who are or will be involved in a marketing programme for a consumer or industrial product or service to market more effectively the product or service.

Objective—To provide interested persons with the knowledge to meaningfully apply modern marketing methods and techniques to solve specific marketing problems.

Outline—A combination of class lectures, discussion, case studies and a term project will be used to provide a comprehensive range of knowledge in this important marketing area. Specific topics covered include analysing and reaching present and potential markets, improving various aspects of the product mix, applying marketing research methods and techniques, determining marketing objectives, and utilizing advertising, promotion, distribution, and price strategies.

Tuesday: 6.45–9.45 p.m.	*Begins:* Jan. 13
Term II (12 weeks)	*Unit:* 1.0

20.389 Marketing and Customer Behaviour

Purpose—The purpose of this course is threefold and is therefore directed at three groups of people.

In the first place, it represents an attempt to inform the business executive of various research findings which relate to customer behaviour (Market Planning).

In the second place, it is directed at the student in his first or second year of college or university who may eventually specialize in this field of marketing.

Thirdly, the course is designed for anyone who is interested in human beings and the rapidly changing world in which we live.

Objectives—On completion of this course the individual can expect to (*a*) be knowledgeable about the characteristics of various consumer publics and simple demographic variables such as age, sex, and socioeconomic level; (*b*) be able to understand how and why consumers act individually and in mass; (*c*) be able to understand purchase and postpurchase behaviour; (*d*) understand the behaviour of people as buyers and users of goods and services; and (*e*) be able to understand "product image" and "product personality" and the progress and changes being made toward a discipline of customer behaviour.

Outline—A mixture of lectures, discussions, seminars, projects, and assignments will provide an interesting course. Topics include the importance of customer behaviour, problems relating to customer behaviour, approaches to customer behaviour, purchase and postpurchase behaviour, mass communications, foundations of customer behaviour, consumer economic theory, contributions of the behavioural sciences, and customer behaviour present and future.

Monday: 6.45–9.45 p.m.	*Begins:* Jan. 12
Term II (12 weeks)	*Unit:* 1.0

20.472 Merchandising

Purpose—To prepare persons with limited experience in retailing to gain an understanding of basic concepts and practices in merchandising. Specifically, this course will deal with the techniques of establishing, procuring, maintaining, evaluating, and promoting a merchandise assortment.

Objectives—On completion of the course a student can expect to be conversant 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 promotion. With such training the student would be in a position to seek advancement in specialty retail and department store employment.

Outline—Lectures and problem-solving exercises will be used; some take-home assignments will be given.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14
Term II (18 weeks) *Units:* 1.5

20.476 Sales Management

Purpose—This course will provide students with 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 the human resources. Supplementary topics include sales research, planning, organization, and sales management ethics.

Objective—Upon completion of this course a student will be able to readily identify and to solve typical sales management problems relating to the topics listed above. Students should be able to demonstrate the basic "sales management skills."

Outline—Format includes lectures, discussions, case studies, role plays, and readings.

Monday or Thursday: 6.45–9.45 p.m. *Begins:* Jan. 12 or 15
Term II (12 weeks) *Unit:* 1.0

Please indicate a choice of time you wish to attend.

20.502 Oral Communications and Public Speaking I

20.602 Oral Communications and Public Speaking II

Purpose—To improve oral communications in business and social situations. Those people who lack self-confidence generally and who specifically lack confidence in communication situations should find this course very profitable. Class structure is flexible enough to allow for individuality of the class.

Objective—Each student will develop increased skill and confidence in all speaking situations.

Outline—Various types of communications situations are examined—telephone, conversation, social and business speaking situations, communication breakdown and how to avoid it, etc.

Training films, buzz groups, along with wide use of video will be utilized. Every night each student will be required to make some sort of public presentation. The final night of the course is in the form of a formal banquet at which the students have the opportunity to make speeches to class members and invited guests.

PART I

Tuesday or Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 16 or 17
Term I (12 weeks) *Unit:* 1.0

PART II

Wednesday or Thursday: 6.45–9.45 p.m. *Begins:* Jan. 14 or 15
Term II (18 weeks) *Units:* 1.5

20.901 Purchasing

Purpose—This course is for people preparing to enter the purchasing field, for those who are given buying responsibilities in a small operation along with other responsibilities, for people newly appointed to a purchasing department, and for those in related fields who will benefit from knowing the fundamentals of purchasing, for example, housekeepers, maintenance personnel, etc.

Objective—Students will gain a fundamental knowledge of the principles and practices of purchasing.

Outline—In the 12 weeks this course will include the functions of a purchasing unit, the relationship and responsibilities to management; centralized purchasing; negotiating controls; buying for quality, quantity, and price; timing and sources of supply; receiving and warehousing; and inventory control.

Tuesday: 6.45–9.45 p.m.	*Begins:* Sept. 16
Term I (12 weeks)	*Unit:* 1.0

This course repeats in Term II, beginning Thursday, January 15.

20.902 Traffic and Transportation

Purpose—This course will deal with the elements of traffic and transportation and will be introductory rather than technical in its presentation. It may also be utilized as a refresher course for those already involved in traffic and transportation management.

Objective—The course is intended to develop the individual's knowledge of transportation for both the buyer's and seller's point of view.

Outline—Those areas to be dealt with include the role of transportation in industry; railways vs. highway carriers; the bill of lading, a legal document; quantity transportation purchases; warehousing; ocean shipping; private vs. public carriage; unit load-handling; air shipments; and pipe-line movements.

Tuesday or Thursday: 6.45–9.45 p.m.	*Begins:* Jan. 13 or 15
Term II (18 weeks)	*Units:* 1.5

20.906 Public Relations

Purpose—This course is designed for people in business, government, municipalities, associations, and organizations who have a responsibility for communicating with the public and within the organization.

Objective—Students completing this course will tackle their information and communication assignments with increased confidence and competence.

Outline—Through lectures, examples, case studies, and discussion sessions the course material covers planning and executing a public relations program, writing for the mass media, principles of news writing, specialty advertising, utilizing the various media, community relations, exhibits and fund raising, internal communications, and employer relations.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, 1976.

20.910 Advertising I

Purpose—This course is carefully designed 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 exposing them to the newest trends and up-to-date changes taking place in advertising.

Objectives—On completion of Advertising I a student will be able (*a*) to be a competent critic of advertising; (*b*) to measure his or her own abilities and talents in one of the phases of advertising; (*c*) to have a deeper understanding of advertising in the marketing picture; (*d*) to understand better the problems and challenges of advertising; (*e*) to get valuable insights into the factors affecting creative endeavours; and (*f*) to make a more effective contribution if involved in an advertising career.

Outline—History of advertising—the field today and tomorrow. Definitions of local and national advertising. The media and media mix—newspapers, radio, TV, magazines, direct mail, and transit. Classroom projects and field visits. Copy writing, layout design, graphics, typography and art techniques. Production of effective advertising.

Tuesday or Thursday: 6.45–9.45 p.m. *Begins:* Sept. 16 or 18

Term I (12 weeks) *Unit:* 1.0

Please indicate which night you prefer to attend.

20.911 Advertising II

Purpose—To put into sharp focus the subject material covered in Advertising I; to enable persons holding junior advertising positions to advance to more responsible areas; to show the inter-relationship between marketing and advertising.

Objectives—On completing this course the student should expect (*a*) to possess a fair grounding in aspects of measuring advertising effectiveness; (*b*) to differentiate between advertising and sales promotion; (*c*) to understand media planning and budgets; (*d*) to know the make-up of advertising campaigns; (*e*) to know how an advertising agency operates; (*f*) to implement marketing planning, co-ordination, controls, and measurements; and (*g*) to take on greater responsibilities in an advertising operation.

Outline—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 productions, creative processes, the principles and practices of marketing planning, co-ordination, controls, and measurements.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (18 weeks) *Unit:* 1.5

Prerequisite—Advertising I or permission of the instructor.

20.903 Marketing Research

Purpose—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.

Objectives—To provide interested persons with the knowledge and ability to apply basic marketing research methods and techniques to a wide variety of marketing problems.

Outline—A combination of class lectures, discussions, case studies, and a field project will be used to provide a comprehensive knowledge of this integral marketing function. Specific topics covered are sampling theory and practice, questionnaire design and field interviewing, consumer behaviour, media, advertising, product, and industrial marketing research.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

20.912 International Trade

Purpose—This presentation is aimed at those in industry who are involved or are interested in the facets, functions, and documentations of international trade.

Objectives—Ability to handle details of import and export procedures; to understand just what happens to shipments and the paperwork concerning the goods, costing, financing, insurance, transportation, documentation, and customs clearance.

Outline—The course content will be geared to the needs and interests of the attending students. Class discussions will be encouraged.

The practical approach is emphasized. The intent of this course is to assist those in industry to understand the complexities of international trade, the terminology of international trade, and the activities involved within international trade as it is happening on the local and foreign scenes.

Wednesday or Thursday: 6.45–9.45 p.m. *Begins:* Sept. 17 or 18

Term I (12 weeks) *Unit:* 1.0

20.913 Transportation Trends and Economics

Purpose—This course is intended to round out the student regarding advancements in all modes of transportation while at the same time evaluating present and intended rate structures, classifications, and related areas of transportation costing.

Students will find this course extremely beneficial as they will be made aware of current developments in matters of physical distribution.

Objectives—For advancement in industry, individuals engaged in physical distribution activities should be aware of what is occurring in their own particular field and that of their competitors; be it another mode of transportation or another user of this service. This source is intended to broaden the student's horizons and enable him to relate better with his peers in the transportation world.

Outline—Presentations will be made from a composite of lectures and classroom discussions, with heavy emphasis on current handouts, films, and any other techniques necessary to update and provide the student with an insight into the transportation infrastructure and its evolution.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (18 weeks) *Units:* 1.5

20.907 Salesmanship—Salesmen

Purpose—This course is designed for men and women who are already employed as salesmen. It is also suitable for those who are employed in an "inside sales position" and who wish to move up into the sales representative category.

Objective—To give those persons already in the sales field an opportunity to develop further their sales skills and eliminate the costly "trial and error" method of learning.

Outline—A study of the mechanics of salesmanship covering the pre-approach, approach, demonstration, objection-handling, and closing techniques. Emphasis will be placed on selling practice role-playing using video tape and group-evaluation techniques. A number of sales training films are employed.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Monday, January 12, and in Term III, beginning Monday, April 5, 1976.

CERTIFICATES IN OPERATIONS MANAGEMENT

Business Certificate in Operations Management

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Operations Management may be designed to meet the needs of the individual student.

OPERATIONS MANAGEMENT

Business Certificate in Operations Management

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Work Study I (22.941)	1.0	Work Study II (22.942)	1.5		
Statistics for Business and Industry (22.535)	1.0	Statistics for Business and Industry (22.635)	1.0		
YEAR II					
Organizational Behaviour (10.906)	1.0	Elective	1.5		
Elective	1.0	Project Planning and Scheduling (22.953)	1.0		
YEAR III					
Systems Analysis (22.551)	1.0	Systems Analysis (22.651)	1.5	Elective	1.0
Elective	1.0	Elective	1.5		

List of Suggested Electives

		Units
14.909	Basic FORTRAN IV	1.0
16.904	Accounting for the Manager	1.0
10.135/235	Economics I and Economics II	2.5
22.963	Mathematics for Management	1.5
22.936	Basic Mathematics of Finance	1.0
10.131	Management in Industry I	1.0
10.232	Management in Industry II	1.0
22.961	Materials Handling I	1.0
10.360	Business Law I	1.0
22.962	Materials Handling II	1.0
49.900	Draughting	1.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

22.535/635 Statistics for Business and Industry

Purpose—To provide a comprehensive understanding of the techniques of elementary statistical methodologies used as aids to objective decision-making. The course is generally suitable for persons requiring statistics for initiating research in the fields of marketing, audit sampling, quality control, inventory control, and business forecasting.

Content—Descriptive Statistics and Probability is taken in Term I; Inferential Statistics and Forecasting in Term II. The package, however, is regarded as a single unit.

Outline—Introduction to the use of statistics in business and industry; descriptive statistical techniques involving collection and treatment of data and a review of elementary set theory and probability; Inferential Statistics include sampling, hypothesis testing, goodness of fit, regression analysis, correlation, and time series analysis.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

22.535 Term I (12 weeks)
22.635 Term II (12 weeks) *Units:* 2.0

22.936 Basic Mathematics of Finance

Purpose—An introductory course for those who wish an understanding of the earning power of money and its changing value over time as it applies to commercial transactions, as well as the personal financial planning of everyday activities.

Objective—Since the concept of interest is universally applicable to both business and personal transactions, the primary objective of this course is to give the student a sound background in the basic mathematical principles used in computations.

Outline—Through lectures and supervised class exercises the course material covers a brief review of basic mathematics, marketing applications (markup and markdown), note discounting, interest, the concept of present value, instalment plans, annuities, mortgages, sinking funds, depreciation methods, and techniques of evaluating investment alternatives.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

22.941 Work Study I

Purpose—This course is the fundamental course in Operations Management and is designed to create a systematic approach to problem-solving.

Objective—To create a plan for solving problems and to give the student the ability to apply this technique to his daily environment.

Outline—Principles of systematic scientific problem-solving as related to business and industry; 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 work-place design, supplemented by application of all topics to practical situations, intended as Part I of a two-part programme leading to a basic knowledge of Work Study.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
Term I (12 weeks) *Unit:* 1.0

22.942 Work Study II

Purpose—To procede from Work Study I into the area of time analysis and relating costs of time.

Objective—(1) To familiarize the student with the various systems of recording time and establishing standard times for work.

(2) To allow the student to do a complete work study exercise through to final report.

Outline—The course will cover historical times, work sampling and techniques, predetermined time systems, and the development of standard times from these techniques.

It will present a case problem requiring student to apply the knowledge gained in both Work Study I and II as a final assignment.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13
Term II (18 weeks) *Units:* 1.5

22.551/651 Systems Analysis

Purpose—This is a training course for persons interested in becoming a systems analyst, or for people desiring to improve their knowledge of the systems field.

Objective—To give the students an understanding of the systems side of Operations Management, and to let them use the techniques of Quantitative Analysis that are applied in the business environment.

Outline—This course will offer training and application of techniques in such areas as organization of projects, work measurement, scheduling, and model development for various business systems.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15
22.551 Term I (12 weeks)
22.651 Term II (12 weeks) *Units:* 2.0

22.953 Project Planning and Scheduling

Purpose—This course is designed for those who have a limited knowledge of the Critical Path Method or who wish to acquire a basic grounding in the CPM technique and its application to the management of projects.

Objective—To introduce the fundamentals of the Critical Path technique, especially in the area of planning, scheduling, resource allocation, and project management.

Outline—Through lectures, case studies, and a simulated construction project, the course material 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.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (12 weeks) *Unit:* 1.0

22.961 Materials Handling I

Purpose—To introduce an organized approach to the study of materials handling problems. The course is designed to allow the person with little or no analytical background to develop a basic awareness of materials handling problems and to become familiar with techniques of analysing and developing solutions to those problems.

Content—Introduction to the materials handling environment, methods study techniques, classification of problems, layout planning (both over-all and detailed) for plant and office; introduction to economic justification for change.

Outline—Lectures, films, and working sections coupled with home assignments develop a basic working knowledge of how to solve your materials handling problems. The course forms the foundation for the more detailed advanced course in materials handling.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

22.962 Materials Handling II

Purpose—To give the person who has been introduced to the materials handling field a detailed method of analysing problems and determining alternative materials handling systems.

Objective—To enable the student to develop and sell a materials handling system.

Content—Detailed handling analysis, development of integrated handling systems, economic justification of change, and comparison of current systems and equipment.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (12 weeks) *Unit:* 1.0

Prerequisite—Materials Handling I.

22.963 Mathematics for Management

Purpose—To provide a solid foundation in the type of mathematics fundamental to many of the quantitatively oriented business subjects, techniques, or formal programmes of study (BCIT Bus. Cert., M.B.A., B.Com., R.I.A.)

Objective—In the past two decades, new techniques such as linear programming, simulation, discounted cash flow, and inventory control models have been widely applied in a variety of business situations. However, persons wishing to learn about these new techniques are often hampered by a deficient mathematical background. Also, persons seeking full competency in such subject areas as economics, finance, marketing research, etc., often feel restricted by an inadequate grounding in the quantitative skills relevant to these subjects. The object of this course is to provide the necessary mathematical background.

Outline—The course is application-oriented, with the applications being chosen from the real business world. After an initial period of reviewing some necessary high school algebra, new theory will be introduced as it is required in the context of solving a real-life problem.

Some topic-problem area associations will be mathematics of finance—mortgages, depreciation, etc.; linear algebra—break-even analysis of business operations; matrices and determinants—material and labour constraints; linear inequalities—available resource constraints; linear programming—optimum resource allocation.

As a point of interest, the student will get some computer experience in solving the linear programming problems just mentioned.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (18 weeks) *Units:* 1.5

22.503/603 Production Control Management

Purpose—To introduce the basic concepts of production control. This course will provide theoretical and simulated practical training in most aspects of production control management. Students who are presently working in a production environment or those planning to enter the field will find this course particularly helpful.

Objective—To give the student a working knowledge of management techniques used in the design and control of production systems and the inter-relationships of the systems, i.e., the sales and inventory.

Outline—The course through lectures, case studies, and a simulated factory will cover such topics as types of production environments, organization of production departments, production information requirements, planning, development of time standards, scheduling, loading, dispatching, inventory management, computers in production control.

Student teams will operate a factory for several weeks of consecutive plant operation through the facilities of a computerized production system simulator. Each student team will design a production control system and then use the control system to make operating decisions.

The factory simulation will provide the student with a means of gaining experience in controlling a total production system, testing his ideas, and receiving immediate feedback, showing the results of his decisions.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 18

22.503 Term I (12 weeks)
22.603 Term II (12 weeks) *Units:* 2.0

COURSES IN ENGLISH

Students who require information on English courses should read section 3 on "Counselling" on page 14 of this Calendar.

31.101/201 Communications

Purpose—This course is an adaptation of the first-year communications courses offered to BCIT day-school students and will be of interest to anyone who feels the need to develop effective communications skills but who has had limited experience and training in the communications arts.

Objective—The 24-week presentation (Communications 31.101/201) provides an introduction to basic principles in communications and their applications in various contexts. Upon completion of this course, students can expect to be familiar with a variety of communications methods and some of the considerations behind their usage.

Outlines—Term I (12 weeks) will review some fundamental communications concepts and their applications in different settings. Verbal and written uses of language and techniques in the retrieval of information and research will be discussed.

Term II of this course (12 weeks) will concentrate upon techniques in presentation. In both terms, the emphasis will be upon practical applications and, in Term II, a number of presentations (featuring a wide range of audio-visual equipment) will be required of the student.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

31.101 Term I (12 weeks)
31.201 Term II (12 weeks) *Units:* 2.0

31.501/601 Tutorial on Writing

Purpose—This course is intended to review the fundamentals of writing, emphasizing practice in various forms, development of a language sense; and comparison of some communications media.

The course will operate mainly on a tutorial basis, since the diagnosis and correction of individual weaknesses is the fundamental purpose.

Outline—Material covered will include spelling; punctuation; work choice; grammar reference, agreement, unity, and coherence; compositions-predication, parallelism subordination, emphasis, transitions; library resources—indexes, periodicals, books, special materials, audio-visual materials.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

31.501 Term I (12 weeks)
31.601 Term II (12 weeks) *Units:* 2.0

31.503/603 Business and Technical Report Writing

Purpose—This course is designed to improve the report writing skills of persons presently employed, or intending to be employed, in business or industry.

Scope—The organization and presentation of a variety of reports will be considered, discussed, and practised. Particular attention will be given to those types of reports selected by the students as best meeting their voca-

tional needs. Some aspects of letter writing will be discussed, but emphasis will be placed on report writing. Other communication techniques (such as film, tape, and public speaking) may also be examined.

Saturday: 9–12 noon — *Begins:* Sept. 20

31.503 Term I (12 weeks)
31.603 Term II (12 weeks) — *Units:* 2.0

This course also repeats in Term II, beginning Saturday, January 17, 1976.

31.504/604 Business Writing

Purpose—To improve the student's ability to communicate. Business writing appropriate to the student's present and future needs is discussed and practised. Persons presently employed in a business setting should find this course useful.

Objectives—On completion of this course a student can expect to (*a*) be capable of writing an effective business letter and memorandum; (*b*) be capable of writing an effective business report; and (*c*) be able to give an effective oral presentation.

Outline—A mixture of lectures, discussions, writing sessions, and films will provide an interesting course. The following topics will be covered: (*a*) Sales letters; (*b*) collection letters; (*c*) inquiries and orders; (*d*) credit letters; (*e*) claim and adjustment letters; (*f*) application letters and résumés; (*g*) memorandums; (*h*) short reports; (*i*) long or formal reports; and (*j*) oral reports.

Thursday: 6.45–9.45 p.m. — *Begins:* Sept. 18

31.504 Term I (12 weeks)
31.604 Term II (12 weeks) — *Units:* 2.0

31.505/605 Technical Writing

Purpose—The improvement of the student's ability to communicate in a technical context is the principal purpose of this course. Though business and technical writing share a common basis of "good", i.e., "effective" English, there is a distinction in content. Technical writing is predominantly concerned with material generated by engineering and the applied sciences. This course is designed for persons working in these fields, although in today's industry there is a considerable overlap between technology and commerce, and some employment categories, e.g. marketing, allow no such demarcation.

Objectives—While no specific vocational objectives for this course can be formulated, the student may expect to improve confidence and competence in dealing with the wide range of communications required by modern industry. Thus, the work will be adapted as far as possible to the needs of individual students, and will include diagnosis of special problems and intensive remedial coaching through supervised assignments.

Outline—A study of the principles of style and form which govern effective report writing will be undertaken. Assignments will include letters, memos, formal reports, specifications, and various kinds of technical descrip-

tion. Some other communication techniques (such as film, tape, and public speaking) will be examined, but the emphasis throughout will be on written communication.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

31.505 Term I (12 weeks)
31.605 Term II (12 weeks) *Units:* 2.0

31.905 Reading Improvement

Emphasis will be placed on purposeful and flexible reading techniques related to speed of comprehension. This will involve skill development in the following areas: Reading rate, comprehension, vocabulary, pre-reading, note-taking, and study habits and skills.

Classes will meet for two hours twice a week for six weeks. Each class is limited to 15 students for emphasis on individual attention. This course is not intended for persons for whom English is a second language.

Tuesday and Thursday: 6.45–8.45 p.m. *Begins:* Sept. 16

Term I (6 weeks)

NOTE—There will be a second set, beginning October 28.

This course will be repeated in Term II, beginning January 13, with students attending Tuesdays and Thursdays.

COMBINED BUSINESS AND ENGINEERING CERTIFICATE PROGRAMMES

The Extension Division will award combined Business and Engineering Certificates to students who successfully complete 15 units of study drawing courses from both areas. The object of these certificates is to provide a course of studies which provides a general business base, but flexible in the branch of engineering of interest to each individual. For example:

Industrial Management Certificate (Branch of Engineering)

	Units
Management in Industry I and II	2.0
Work Study I and II	2.5
Business and Technical Report Writing	2.0
Engineering Courses and Business Electives	8.5
Total	15.0

Technical Marketing Certificate (Branch of Engineering)

Marketing	2.5
Salesmanship	1.0
Business and Technical Report Writing	2.0
Engineering Courses and Business Electives	9.5
Total	15.0

In both the above certificates the main branch of engineering would be stated. For example:

Industrial Management Certificate—Food Processing.
Technical Marketing Certificate—Forest Products.

The electives can be drawn from the main branch of engineering chosen or from approved related areas. In some cases 2 or 3 units will be devoted to Technical Mathematics.

ENGINEERING TECHNOLOGY CAREER PROGRAMMES CERTIFICATE PROGRAMMES AND COURSES

Courses and programmes in this section of the Calendar are in the following order:

ENGINEERING TECHNOLOGY CERTIFICATE PROGRAMMES

The Career Programmes Division will award certificates in the Engineering technologies to any student who successfully completes the programme as shown under the particular technology. A suggested course sequence and unit breakdown is given under the particular technology.

The following table is a general certificate programme format for students in engineering technology:

Engineering Technician Certificate

	Units
Mathematics	3.0
Basic technology course	4.0
Supporting or other basic technology course	8.0
Total	15.0

Senior Engineering Technician Certificate

Physics	2.0
Mathematics beyond certificate level	2.0
English	2.0
Supporting, basic, or technology course	6.0
Technology course	3.0
Total	15.0

Diploma of Technology

Students who have earned the Senior Engineering Technician Certificate and wish to study toward a Diploma of Technology should arrange to discuss their programme with the Career Programmes Division.

BIOLOGICAL SCIENCES TECHNOLOGY

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Biological Sciences Technology

Food Processing Option

44.904 Basic Food Processing

Purpose—To provide an overview of the basic methods of food preservation to persons already employed in food manufacturing or government inspection services or to those wishing to explore the food industry as a possible career field.

Outline—An introduction to the processes of canning, freezing, fermenting, concentrating, and dehydrating of foods. Experimental lots of food will be preserved by these methods during laboratory periods.

This course will not be offered the 1975/76 term.

44.906 Basic Quality Control for Food Processing

Purpose—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.

Outline—General principles of quality control; inspection forms; acceptance sampling; control charts; evolutionary operations; instrumental measurement and specification of food quality; Government standards and grades; sensory panel tests, including consumer tests; equipping a quality control laboratory.

Tuesday: 6.45–9.45 p.m.	*Begins:* Sept. 16
Term I (12 weeks)	*Unit:* 1.0

44.907 Retail Food Products Control

Purpose—To provide a basic understanding of food spoilage and food poisoning micro-organisms and to study methods of their prevention and control in retail food products. The course is specifically designed for persons employed in retail food outlets who have no formal training in microbiology. It would be beneficial to others with an interest in food sanitation.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
Term I (12 weeks)	*Unit:* 1.0

Food Production and Landscape Horticulture Options

44.908 Pestology and Plant Protection

Purpose—The course will provide knowledge of the principle and applied techniques of weeds, insect, and disease control. It is designed for persons

engaged in commercial landscape maintenance, greenhouse plant culture, food production or distribution, and sale of horticultural pesticides.

Objective—To provide an in-depth review of pestology for persons already holding certificates as pesticide applicators or pesticide dispensers. All others will have the opportunity to write certification examinations offered by the B.C. Department of Agriculture at the end of the course.

Outline—Weeds, insects, and disease pests of ornamental and garden plants in British Columbia. Emphasis on the principles of their life habits leading to suitable control measures, whether cultural or chemical; theory of biological control of pests. Laboratory sessions will include the identification of the main weeds, insects, and diseases of plants and will demonstrate control methods.

The class is limited to 20 students.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

44.909 Landscape Irrigation

Purpose—This course has been instituted to provide technical information and basic training for persons associated with or interested in turf and landscape irrigation.

Outline—Lectures, demonstrations, problem sessions, and product displays will be used to provide an understanding of turf and landscape irrigation. Topics discussed will include basic hydraulic theory, system design, and construction fundamentals. The scientific and practical aspects of water application on various surfaces and plants will be covered, together with the equipment required to apply water effectively. Installation, operating, and maintenance procedures for major types of irrigation systems (manual, automatic, etc.) will also be discussed.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

This class is limited to 20 students.

CERTIFICATE IN BUILDING TECHNOLOGY

Building Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Building Technology may be designed to meet the needs of the individual student.

BUILDING TECHNOLOGY

Building Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
YEAR II					
Draughting and Design (40.511)	2.0	Draughting and Design (40.611)	3.0		
YEAR III					
Building Construction I (40.512)	2.0	Building Construction I (40.612)	3.0		
Statics (42.103)	1.0	Strength of Materials (42.205)	1.5		

List of Suggested Electives

40.522/622	Building Construction II	2.5
40.913	Building Services—Plumbing	1.0
40.923	Building Services—Heating and Ventilating	1.5
40.933	Building Services—Air conditioning	1.5
40.543/643	Building Services—Electrical	2.0
40.953	Building System Controls	1.0
42.103	Statics	1.0
42.205	Strength of Materials	1.5
52.102/202	Engineering Surveying	2.5
40.914	Introduction to Construction Estimating and Specification	1.0
40.524/624	Construction Estimating	2.5
40.934	Construction Specifications	1.5
40.915	National Building Code	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Building Technology

40.511/611 Draughting and Design

Purpose—Provide an introduction to architectural draughting and design for those with little background in the subject. A preparation for more advanced courses in design and construction.

Accreditation may be claimed in 40.101/201 Draughting and Design in the day programme, if marks are satisfactory.

Objective—To give beginners instruction and practice in architectural design and in the preparation of presentation drawings and models for simple buildings.

Outline—Lettering, draughting, isometric and perspective drawings. Presentation techniques, shades and shadows, colour, model building. Fundamentals of design, æsthetic and functional. Architectural planning and design. History of architecture.

Tuesday and Thursday: 6.45–9.45 p.m. *Begins:* Sept. 16

40.511 Term I (12 weeks)
40.611 Term II (18 weeks) *Units:* 5.0

40.512/612 Building Construction I

Purpose—To improve the comprehension of good construction practise on the part of designers, draughtsmen, builders, inspectors, and appraisers, as well as beginners. In addition, to provide an opportunity to develop professional standards in the preparation of working drawings.

Accreditation may be claimed in 40.102/202 Building Construction in the day programme, if marks are satisfactory.

Objective—To give those with a minimum background an understanding of the basic principles of construction, a knowledge of standard practices, and the ability to prepare working drawings for residential and small commercial work.

Outline—Detailed examination of light wood systems—stud and joist, post, beam, and plank; of masonry systems—brick, concrete, block, hollow tile. Introduction to characteristics of materials and application to interior and exterior finishing. Detailing of doors, windows, stairs, cabinet work, fireplaces.

Application of the above to preparation of typical working drawings for residential construction.

Monday and Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 15

40.512 Term I (12 weeks)
40.612 Term II (18 weeks) *Units:* 5.0

40.522/622 Building Construction II

Purpose—A continuation from Construction I, this portion dealing with fire-resistive construction.

Objective—As well as dealing with construction systems and details, deals with building science—the effect of natural forces on the building envelope relative to weathering, deterioration, heat transfer.

Outline—Principles of building construction in fire-resistive structures. 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. Prefabrication and systems building. Building science. Free-hand preliminary working drawing sketches.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

40.522 Term I (12 weeks)
40.622 Term II (18 weeks) *Units:* 2.5

40.913 Building Services—Plumbing

Purpose—This course may be taken as a self-contained course in plumbing technology, or as the first of a series of courses in the "mechanical systems for buildings" field. It is geared to the needs of industry personnel wishing to round out their mechanical systems knowledge, to junior personnel wishing to advance to technologist status, and for accreditation purposes for building technology courses.

Objective—To teach rational design of building water supply and drainage systems in accordance with the B.C. Plumbing Code.

Outline—Mechanical system quantities and units; layout and sizing of water supply and drainage piping systems; plumbing system fixtures, valves, and appurtenances; centrifugal pumps in plumbing service. Code interpretation. Guidance on practical lab project.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

40.923 Building Services—Heating and Ventilating

Purpose—This course may be taken as a self-contained course in heating and ventilating technology, or as one of a series of courses in the "mechanical systems for buildings" field. Successful completion of the first of this series, Building Services—Plumbing, would provide helpful but not essential background for entering this course.

It is geared to the needs of industry personnel wishing to round out their mechanical systems knowledge, to junior personnel wishing to advance to technologist status, and for accreditation purposes for building technology courses.

Objective—To teach rational design of building heating and ventilating systems, with accent on fuel and energy conservation.

Outline—Mechanical system quantities and units; fuel handling and combustion. Hot-water space-heating components and systems; arrangement and sizing of hot-water space-heating piping. Air-handling equipment; duct sizing methods; air systems for heating and ventilating. Guidance on application lab.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (18 weeks) *Units:* 1.5

40.933 Building Services—Air Conditioning

Purpose—This is the final course in the "mechanical systems for buildings" series. While it is possible to take this as an independent course, there is considerable dependency on course material developed in 40.923 Building Services—Heating and Ventilation. As a prerequisite for entering

this course, the student should either have successfully completed course 40.923 or have attained satisfactory heating and ventilating experience in industry. Due to necessary sequencing of material, it is not possible to take courses 40.923 and 40.933 concurrently.

This course is geared to the needs of industry personnel wishing to extend the scope of their mechanical systems knowledge into the air conditioning field, or for accreditation purposes for building technology courses.

Objectives—To teach rational design of air conditioning systems for buildings, with the accent on energy conservation.

Outline—Building cooling loads. Comfort criteria; properties of air with reference to the psychometric chart. Air distribution; system design. Guidance on lab application project. Refrigerants. The vapour compression refrigeration cycle with reference to the pressure enthalpy chart; refrigeration system components. Practical lab on experimental refrigeration plant.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Units:* 1.5

40.543/643 Building Services—Electrical

Purpose—An introductory course in illumination and wiring as applied to buildings. Recognized for accreditation purposes for Building Technology Courses.

Objective—To give instruction and practice in fixture selection and arrangement, and in the attendant wiring necessary to provide a complete system.

Outline—Single, and three-phase alternating current, including power, reactive power, power factor, load factor, elementary short-circuit analysis, and theory of lighting. Equipment commonly encountered in building services. Application to actual design of industrial and commercial building services. Economic factors.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

40.543 Term I (12 weeks)
40.643 Term II (12 weeks) *Units:* 2.0

40.953 Building System Controls

Purpose—This course is being presented in order to fulfil the needs of industry technicians seeking knowledge and guidance in the application and selection of control systems for building mechanical systems.

Objective—It is desired to make the material quite specific in its application, so an outline knowledge of heating, ventilating, and air conditioning systems is advisable as obtained through industry involvement or related BCIT courses in the building services field.

Outline—Principles and practices of heating, ventilating, air conditioning, and plumbing systems controls; analysis of building load variables affecting system design; electric and pneumatic control systems for residential, commercial, and institutional buildings.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

40.914 Introduction to Construction Estimating and Specifications

Purpose—To introduce construction contracting procedures to persons already acquainted with building construction.

Objectives—To provide students with a working knowledge of how construction contracts are made; to provide students with the prerequisite knowledge for courses in 40.524/624 Construction Estimating, and 40.934 Construction Specifications, which are described elsewhere.

Outline—Basic of real property development by construction work and the persons and functions involved. The design, bidding, and contracting procedures. Types of construction contracts. Measurement and specification of construction work. The basis of construction costs. The course comprises lectures, discussions, and practical measurement of construction work.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Wednesday, January 14, and also in Term III, beginning Wednesday, April 7.

40.514/624—Construction Estimating

Purpose—To develop the student's skill in measuring construction work from drawings and specifications in order to estimate the costs.

Objectives—To learn methods of measurement and cost analysis; to understand the estimating/cost accounting/construction management cycle; to learn the process of bidding for work; to assist students in preparing for the professional examinations of the Canadian Institute of Quantity Surveyors.

Outline—Methods of measuring work of the major structural and architectural trades. Methods of cost analysis; cost data sources; cost accounting. Preparation of estimate summaries and bids. Assume minimum three hours per week in assignments outside of class.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

40.524 Term I (12 weeks)

40.624 Term II (18 weeks) *Units:* 2.5

Prerequisite—Minimum second-class mark in 40.914; or Diploma in Building Technology or equivalent course; or extensive knowledge of building construction and contracts. An entrance test may be given at the discretion of the instructor.

40.934 Construction Specifications

Purpose—To develop the student's understanding and use of specifications as bidding and contract documents, and to further develop a specific knowledge of construction materials and methods.

Objectives—To compile and interpret specifications of work in the structural and architectural trades; to develop judgment in the selection and specification of construction materials; to develop the use of technical language.

Outline—Writing and organizing specifications according to the uniform system. Sources and use of data on selected structural and architectural materials. Office organization and selected contractural procedures.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (18 weeks) *Units:* 1.5

Prerequisite—40.914 is recommended as preparation for this course.

40.915 National Building Code

Purpose—To enable persons to become familiar with the purpose, scope, and contents of the current National Building Code of Canada.

Objective—This will be of use to architects, draughtsmen, 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 British Columbia as a result of Provincial Statute.

Outline—Short history of the Code. General review of contents by section. Detailed consideration of Part 3 Use and Occupancy, Part 4 Cladding, Part 6 Services, and Part 9 Housing.

Under the supervision of W. H. Ball, of the Division of Building Research, National Research Council.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (18 weeks) *Units:* 1.5

CERTIFICATE IN CHEMICAL AND METALLURGICAL TECHNOLOGY

Metallurgical Technician Certificate

Paint Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates. Advanced Certificates, and National Diplomas in Chemical and Metallurgical Technology may be designed to meet the needs of the individual student.

CHEMICAL AND METALLURGICAL TECHNOLOGY

Metallurgical Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
Basic Metallurgy—Part I (41.502)	1.0	Basic Metallurgy—Part I (41.602)	1.0	Elective	1.0
YEAR II					
General Physics (33.508)	1.0	General Physics (33.608)	1.0	Elective	1.0
Elective	1.0	Elective	1.0		
YEAR III					
Basic Metallurgy Part II (41.503)	1.0	Basic Metallurgy—Part II (41.603)	1.0		
Elective	1.0	Elective	1.0		

List of Suggested Electives

		Units
30.501/601	General Chemistry	2.5
41.305/405	Assaying	4.0
49.900	Draughting	1.0
48.901	Process Instruments I	1.0
48.902	Process Instruments II	1.0
48.903	Process Instruments III	1.0
30.305	Chemical Instrumentation I	1.0
30.405	Chemical Instrumentation II	1.0
32.507/607	Mathematics (Introduction to Statistics)	2.0
49.510/610	Strength of Materials	2.5
30.510/610	Analytical Chemistry	4.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

CHEMICAL AND METALLURGICAL TECHNOLOGY

Paint Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Paint Technology (41.902)	1.0	Elective	1.0	Elective	1.0
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
YEAR II					
General Chemistry (30.501)	1.0	General Chemistry (30.601)	1.0	Elective	1.0
Paint Technology—Advanced Part I (40.903)	1.0	Elective	1.0	Elective	1.0
YEAR III					
Business and Technical Report Writing (31.503) *or* Technical Writing (31.505)	1.0	Business and Technical Report Writing (31.603) *or* Technical Writing (31.605)	1.0		

List of Suggested Electives

		Units
30.905	(Introductory) Organic Chemistry I	1.0
30.906	(Introductory) Organic Chemistry II	1.0
30.908	Lab. Safety, Organization, and Administration	1.0
32.507/607	Mathematics (Introduction to Statistics)	2.0
30.913	Gas Chromatography	1.0
41.904	Paint Technology, Advanced Part II	0.5
41.905	Paint Technology, Advanced Part III	0.5
30.510/610	Analytical Chemistry	4.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Chemical and Metallurgical Technology

41.502/602 Basic Metallurgy I

Purpose—To acquaint students with the concepts of basic physical metallurgy and with metallurgy testing methods.

Objectives—Those completing the course should have an understanding of metallurgical principles relating to the casting, forming, heat-treatment, and welding of metals. They should also be acquainted with methods of physical testing methods and metallography.

Outline—An introductory course in physical metallurgy covering casting and forming of metals, heat treatment, physical testing, nondestructive testing, and metallurgy of welding. Both ferrous and nonferrous metals will be dealt with.

Laboratory work involving metallography, heat treatment, corrosion, and service-failure investigations will constitute approximately half of the course.

Structure, properties, and applications of other engineering materials will also be discussed, particularly plastics and ceramics.

Field trips to local material processing plants will be arranged.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

41.502 Term I (12 weeks)
41.602 Term II (12 weeks) *Units:* 2.0

41.503/603 Basic Metallurgy II

Purpose—To develop the subject areas covered in Basic Metallurgy I to a more advanced level.

Outline—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 and ternary alloy systems, isothermal transformations in steels, heat-treating techniques, nonferrous metals and alloys, welding metallurgy, principles of nondestructive testing. Laboratory sessions supplement the lectures by field trips to industrial plants and emphasize physical testing of materials, metallography, and nondestructive testing.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

41.503 Term I (12 weeks)
41.603 Term II (12 weeks) *Units:* 2.0

41.505/605 Assaying

Purpose—To provide a course which deals specifically with chemical methods of ore analysis.

Objectives—To provide students with a working background in analytical chemistry or assaying with an opportunity to develop laboratory skills. Students are encouraged to attempt the Provincial examination for the British Columbia Government licence to practise assaying in British Columbia.

Outline—Review of general methods of ore analysis. Lecture and laboratory work includes principles and practice of fire assaying for gold and silver, gravimetric and volumetric analysis. Students should have taken basic chemistry and some analytical chemistry previously.

This course will not be offered in 1975/76.

41.506/606 Introduction to Chemical Engineering

Purpose—This evening course offered by BCIT in Unit Operations should be of special interest to mechanical, civil, and electrical engineers who are employed or associated with chemically based industries, but who do not have a formal background in Unit Operations of the Chemical Process Industries.

Objective—Unit Operations is the study of the fundamental operations or "building-blocks" which compromise all chemical engineering processes. These units of operation cross both industry and process lines, and include such areas as heat transfer, evaporation, materials transfer, and distillation. The traditional curricula of nonchemical engineers do not usually include Unit Operations, yet many engineers find themselves in industries such as pulp and paper, refining, and food processing, or with consulting firms, in which a sound knowledge of basic Unit Operations would contribute greatly in the performance of their work and in continuing professional development.

To supplement the theory of the course, BCIT possesses the newest and one of the best-equipped Unit Operations laboratory of its type in the West for demonstration and experimental purposes. This course would also be suitable for those persons who intend to study toward their professional engineering examinations.

Outline—First and second law of thermo-dynamics; enthalpy, entropy, thermodynamic diagrams, and tables; fluid flow and measurement in pipes and channels, piping, pipe-fittings, and valves; solid handling, grinding, crushing, screening, mixing, settling, sedimentation, filtration, flow of heat, conduction, convection, radiation, film, and over-all transfer of coefficients, heat exchangers; principles and application of equipment for evaporation distillation, absorption, extraction; humidification and dehumidification; drying; ion exchange.

Monday and Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 15

41.506 Term I (12 weeks)
41.606 Term II (12 weeks) *Units:* 4.0

41.908 NACE Basic Corrosion Course (Part I)

41.909 NACE Basic Corrosion Course (Part II)

Purpose—A course in basic corrosion technology developed by the National Association of Corrosion Engineers and given both by BCIT instructors and guest lecturers from local industry.

Objectives—Part I of the course should provide the student with a general knowledge of corrosion problems and corrosion control technology. Part II of the course is more detailed and is designed specifically for those students who intend to write the NACE examination leading to certification as a Junior Corrosion Technologist. The text used for both parts is the NACE Basic Corrosion Course.

Outline—Topics covered include chemical fundamentals, metallurgical fundamentals, atmospheric corrosion, principles of cathodic protection, corrosion by soils, corrosion by water and steam, localized corrosion, fundamentals of inhibitors, stress corrosion, high temperature corrosion, fundamentals of coatings.

PART I

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
Term I (12 weeks) *Unit:* 1.0

PART II

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13
Term II (12 weeks) *Unit:* 1.0

41.907 Metallurgy of Steel

Purpose—A course on the metallurgy of structural steels developed specifically for members of the Canadian Steel Service Centre Institute. Other students who desire to take a course in metallurgy are directed to Basic Metallurgy I, 41.502/602.

Outline—Topics covered include physical testing, nondestructive testing, steelmaking processes, ingot practice, rolling of steel, heat treatment, alloying, specifications, and tolerances.

This course is not offered in 1975/76.

Courses in Paint Technology

41.902 Paint Technology—Basic Course

Purpose—This 12-week presentation is designed to assist those personnel who are actively engaged in paint and coatings manufacture, in the technical field, as well as the production side. It is also of value to those catering to the coating industry, such as new material suppliers, along with architects, professional decorators, paint salesmen, etc.

Specifically, the course is designed to provide a basic background for these students intending to continue to further studies in Paint Technology, and serves as preparation for 41.903 Advanced Paint Technology.

Objectives—On completion of the course, students can expect to have an understanding of the raw materials used in the coatings industry, the methods by which coatings are manufactured, along with application methods and formulating techniques.

Outline—Lectures and discussions will cover the following topics:

1. Introduction: History of surface coatings, reading to recent developments.
2. Vehicles used in the coatings industry: Oils, resins, lattices, etc.
3. Pigments: White and inert pigments, organic and inorganic cold pigments, corrosion-inhibiting pigments.
4. Agents and additives: Driers, antiskin agents, flow-control agents.
5. Solvents: Petroleum solvents, esters, ketones, alcohols, etc.
6. Formula calculations: Bulking value, pigment volume, W.P.G., etc.
7. Trade sales finishes; Solvent and latex types.
8. Industrial finishes: Corrosion and corrosion-resistant coatings, baking enamels.
9. Manufacturing methods.
10. Paint testing.
11. Application methods.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15
Term I (12 weeks) *Unit:* 1.0

41.903 Paint Technology—Advanced, Part I—Latex Paints

Purpose—This 12-week presentation consists of lectures and laboratory presentations, and is designed to complement the basic course in Paint Technology.

Objectives—On completion of the course, students can expect to be knowledgeable on all aspects of polymer emulsion manufacture, and will be well versed in the formulation and manufacture of latex paints.

Outline—This course will cover:

1. Monomers used in latex manufacture.
2. Emulsifiers, additives, etc.
3. Formulation of lattices.
4. Manufacturing methods and techniques.
5. Raw materials used in latex paints, and their function.
6. Formulation of latex paints.
7. Testing of latex paints.
8. Practical laboratory demonstrations showing the manufacture of a typical latex, a latex finish, and testing of same.

This course will not be offered in 1975/76.

41.904 Paint Technology—Advanced Part II—Alkyd Resins

Purpose—This 16-week presentation consists of lectures combined with plant visits, and is designed to complement the basic course in Paint Technology.

Objectives—On completion of the course, students can expect to be knowledgeable regarding the raw materials, formulative and manufacturing techniques for alkyd resins.

Outline—Lectures and discussions will cover the following subjects:

1. Raw materials used in alkyd manufacturing.
2. Formulation of alkyd resins.
3. Manufacture of alkyd resins.
4. Use of alkyd resins.
5. Test methods.

This course will not be offered in 1975/76.

41.905 Paint Technology—Advanced, Part III—Modern Coating Resins

Purpose—This six-week presentation is designed to acquaint the student with modern surface-coating resins used in the production of present-day finishes. It is intended to complement the basic course in Paint Technology.

Objectives—On completion of the course, students can expect to have a good understanding of the resins used in modern finishes, and will be acquainted with their end use.

Outline—Lectures and discussion will cover the following subjects:

1. History and development.
2. Epoxy resins.
3. Urethane resins.
4. Vinyl resins.
5. Acrylic resins.
6. Silicone resins.
7. Powder coatings.
8. Electro deposition.

This course will not be offered in 1975/76.

CERTIFICATES IN CHEMICAL TECHNOLOGY

Chemical Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Chemical Technology may be designed to meet the needs of the individual student.

CHEMICAL TECHNOLOGY

Chemical Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Applied Chemical Principles I (30.902)	2.0	Applied Chemical Principles II (30.903)	2.0		
YEAR II					
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
General Physics (33.508)	1.0	General Physics (33.608)	1.0	Elective	1.0
YEAR III					
Technical Writing (31.505)	1.0	Technical Writing (31.605)	1.0		
Or		*Or*			
Business and Technical Report Writing (31.503)	1.0	Business and Technical Report Writing (31.603)	1.0		
Elective	1.0	Elective	1.0		

List of Suggested Electives

		Units
49.900	Draughting	1.0
41.103/202	Basic Metallurgy I	2.0
41.305/405	Assaying	4.0
49.903	Draughting Mechanical	1.0
48.901	Process Instruments I	1.0
48.902	Process Instruments II	1.0
48.903	Process Instruments III	1.0
30.918	Laboratory, Safety and Organization	1.0
30.305	Chemical Instrumentation I	1.0
30.405	Chemical Instrumentation II	1.0
30.913	Gas Chromatography	1.0
32.507/607	Mathematics (Introduction to Statistics)	2.0
30.510/610	Analytical Chemistry	4.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

30.510/610 Analytical Chemistry

Purpose—To introduce the student to basic concepts, methods, and techniques used in "wet" and common instrumental analysis. The course should be of interest to individuals working in a variety of chemical laboratories, and who wish a basic understanding of common methodology and techniques.

Objectives—On completion of the course the student should be able to interpret and evaluate common analytical procedures and effectively operate common analytical instruments.

Outline—Part I: Topics covered in lectures include sample decomposition, data treatment, precipitation and complexiometric titrations, solvent extraction, ion exchange, and fire assaying.

Laboratory exercises include the wet analysis of Fe, Cr. Sn, Cu, As, S, SiO_2 and fire assaying for Au and Ag.

Monday and Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 15

30.510 Term I (12 weeks) *Units:* 2.0

Part II: Topics covered in lectures include absorption theory (visible, ultraviolet, infrared, and atomic absorption) and related instrumental components and techniques, flame photometry, gas chromatography, potentiometric methods, polarography, and automated analysis.

Laboratory exercises include the use of the following instruments: pH meter, potentiometer, specific ion meter, polarograph, visible spectrophotometer, infrared spectrophotometer, flame photometer, A.A. spectrophotometer, gas chromatograph, and the Technician "Autoanalyzer II".

Monday and Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 12

30.610 Term II (12 weeks) *Units:* 2.0

30.902 Applied Chemical Principles I

30.903 Applied Chemical Principles II

Objectives—To allow persons with little or no chemical background to understand and perform the basic concepts and operations involved in chemical analysis. Emphasis is placed on the practical application of chemical theory to laboratory problems. On completion of the course a person should be competent in the calculations and manipulations routinely encountered in simple chemical analysis.

Outline—Topics studied are chemical symbols, molarity, normality, balancing of equations, acid-base reactions, redox reactions, theory of volumetric analysis, acid-base equilibria in solution (pH and pOH, buffers, hydrolysis), solubility equilibrium (precipitation reactions and solubility product calculations, colligative properties (vapour-pressure lowering and depression of freezing point), electrochemistry (electrolytic and voltaic cells, electromotive series, standard and nonstandard cell potentials, Nernst equation, corrosion). Organic chemistry recognizing the more common functional groups, nomenclature of both common and IUPAC names, some chemical and physical properties, reactions, preparations, and uses of some of the more common commercially available organic chemicals.

PART I

Monday and Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 15

30.902 Term I (12 weeks) *Units:* 2.0

PART II

Monday and Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 12

30.903 Term II (12 weeks) *Units:* 2.0

30.905 Introductory Organic Chemistry I

30.906 Introductory Organic Chemistry II

Purpose—To allow individuals who have had little or no background in chemistry an opportunity to obtain a basic knowledge of organic chemistry. Persons wishing to prepare for the pre-registration examination for the Association of Professional Engineers would find this course useful.

Objective—On successful completion of this course the student will acquire the background for further specialized training in the field of organic chemistry.

Outline—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 will be 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, thin-layer, and its application to organic qualitative analysis.

PART I

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

30.905 Term I (12 weeks) *Unit:* 1.0

PART II

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

30.906 Term II (12 weeks) *Unit:* 1.0

30.913 Gas Chromatography

Objective—To provide training in the theory and operation of the gas chromatograph. On completion of this course one should be able to efficiently operate and perform analyses using a gas chromatograph. This is an introductory course suitable for persons with little or no previous experience with gas chromatography.

Outline—Topics discussed include basic instrumentation, separation theory, columns, detectors, quantitative and qualitative analysis, trouble shooting. Emphasis will be placed upon laboratory work and techniques involved with the gas chromatographs.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (8 weeks) *Unit:* 1.0

30.918 Laboratory Safety and Organization

Objective—To enable people in the following categories to manage science laboratories efficiently and safely using a scientific approach to overcome inherent problems and dangers: (*a*) laboratory assistants, tech-

nicians, teaching assistants, and science support staff employed in educational establishments; (*b*) stores personnel employed in industry, research organizations, schools, hospitals, colleges, and universities; (*c*) laboratory assistants and technicians employed in industrial and research laboratories; (*d*) high school senior students, graduates, or anyone interested in categories (*a*) to (*c*), inclusive.

This course will consist of lectures, laboratory instruction, and open discussion as the material to be covered dictates.

Outline—General rules, dangers, and precautions from general operations, chemicals, poisons, and explosions. Fire precaution, classes, extinguishers, fire-fighting; dangers from electricity, precautions; dangers from gas cylinders, precautions; dangers from radioactivity, precautions; dangers, precautions, design in planning chemical stores, storage of chemicals, hazardous combinations; storage by scientific approach; function, control, records, documentation; the ordering process, stock movement and control; solving special organizational and management problems.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (12 weeks) *Unit:* 1.0

30.305 Chemical Instrumentation I

Objective—To allow persons engaged in chemical and related industries to understand and to perform the simpler aspects of servicing and maintenance of common chemical instruments.

Outline—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 of instruments.

This course has no special prerequisites and has been designed for persons involved in a diverse range of industries.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (12 weeks) *Unit:* 1.0

30.405 Chemical Instrumentation II

Objectives—To allow persons with some background in instrumental analysis to understand basic signal-processing techniques and to construct some useful auxiliary circuits.

Outline—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. Analogue to digital converters. Laboratory work consists of construction and evaluation of instruments described in lectures.

Wednesday: 6.45–9.45 p.m. *Begins:* Apr. 7

Term III (12 weeks) *Unit:* 1.0

Prerequisites—30.305 Chemical Instrumentation I.

30.920 Chemical Laboratory Techniques

Purpose—To develop further the lab technician with limited experience and knowledge in chemical separation methods frequently used in industrial laboratories.

Objective—On completion of the course the student will have the basic knowledge required to progress on performing analytical methods.

Outline—Topics covered include the basic techniques and concepts of weighing, sampling, moisture determinations, ashing, gravimetric and volumetric techniques, extractions. An introduction will be given to chromatographic techniques and instrumental methods of analysis.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (18 weeks) *Units:* 1.5

CERTIFICATES IN CIVIL AND STRUCTURAL TECHNOLOGY

Civil and Structural Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Civil and Structural Technology may be designed to meet the needs of the individual student.

CIVIL AND STRUCTURAL TECHNOLOGY

Civil and Structural Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
Statics (42.103)	1.0	Strength of Materials (42.205)	1.5		
YEAR II					
Business and Technical Report Writing (31.503) *Or* Technical Report Writing (31.505)	1.0	Business and Technical Report Wrtiing (31.603) *Or* Technical Report Writing (31.605)	1.0		
Elective	1.0	Elective	1.5		
YEAR III					
Elective	1.0	Elective	1.0		
Elective	1.0	Elective	1.0	Elective	1.0

List of Suggested Electives

51.102/202	Engineering Surveying	2.5
42.901	Structural Analysis	1.0
49.900	Draughting	1.0
42.102	Hydrology	1.0
42.511/611	Public Services Inspection	2.0
49.905	Draughting—Civil and Structural	1.0
22.941/942	Work Study I and II	2.5
33.508/608	General Physics	2.0
49.903	Draughting—Mechanical	1.0
42.905	Soils I	1.0
42.906	Soils II	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Civil and Structural Technology

42.103 Statics

Purpose—This course, along with its follow-up 42.205 Strength of Materials, provides the basic background for all civil engineering courses, especially those in the structural field.

Outline—Historical development and relation 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 Bowes notation; chains and cables; vertical shear force and bending moment diagrams; related problems and experiments, with emphasis on bridge and building structures, retaining-walls.

Thursday: 6.45–9.45 p.m.	*Begins:* Sept. 18
Term I (12 weeks)	*Unit:* 1.0

42.205 Strength of Materials (Civil and Structural)

Purpose—This course, along with 42.103 Statics, provides the basic knowledge for further study in civil engineering, especially in the structural field. Draughtsmen and people in design offices would find the course work useful. Some opportunity for experience in materials testing is provided.

Outline—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 loading, lateral loading. Compound stress and strain, ellipse of stress, Poison's ratio, principal stresses and strains, Mohr's circle. Testing techniques, machines, extensometers, strain gauges, brittle lacquers, photo-elasticity, evaluation of results.

Thursday: 6.45–9.45 p.m.	*Begins:* Jan. 15
Term II (18 weeks)	*Units:* 1.5

42.901 Structural Analysis

Purpose—This course is designed to provide the student with a basic understanding of the behaviour of simple structures and the methods used in their analysis.

Outline—The major aspects of the prerequisites for this course are reviewed and emphasized. Force diagrams for pinjointed frames; differences between statically determinate and statically indeterminate structures; methods of moment area and superposition as spplied 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 sidesway.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

Prerequisites—42.103 Statics and 42.205 Strength of Materials, or permission of the instructor.

42.902 Structural Design in Steel and Timber

Purpose—To provide a good basic knowledge of structural design in steel and timber. The course is aimed primarily at people working in the design field.

Objective—At the end of the course students should be capable of designing any simple structure in steel and timber.

Outline—Loading, types, and assumptions; tension members, compression members axially loaded; simple connections; trusses and frames; beams, bending, shear and deflection; eccentrically loaded columns; plate web girder; continuous beams; moment connections.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (18 weeks) *Units:* 1.5

Prerequisite—Structural Analysis.

42.903 Structural Design in Reinforced Concrete

Purpose—To provide a good basic knowledge of structural design in reinforced concrete. This course is primarily aimed at individuals working in the design field.

Objective—At the end of the course students should be capable of designing any simple structure in reinforced concrete.

Outline—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 ultimate load design and simple prestressed-concrete beams.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Units:* 1.5

Prerequisite—Structural Analysis.

42.102 Hydrology

Purpose—To introduce the basic concepts and techniques of small watershed analysis. The course should give an introduction to the type of work involved in the design, supervision, and construction of drainage facilities.

Objective—On successful completion of the course the student should be able to (*a*) have working knowledge of the terminology involved in hydrological and drainage studies; (*b*) be capable of determining flood criteria for design of storm-drain systems for small watersheds.

Outline—The course will consist of lectures and design projects. The topics covered will be the hydrological cycle—run-off phase, hydrological equation; precipitation—causes, characteristics, measurement, measuring devices; snow measurement, typical melting conditions, results of melt run-off; hydrographs, mass curves, frequency curves, intensity curves, other graphical representation of data, storms and statistical probability; subsurface water and simple groundwater surveys, infiltration, extraction of groundwater, storage co-efficients, maximum yield of wells; stream-flow measurement, peak discharge and flood run-off, flow in open channels.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

The class is limited to 20 students.

42.202 Hydraulics (Civil and Structural)

Hydrostatics, properties of fluids, pressure, centre of pressure; flow of fluids, equation of continuity, velocity head, venturi, jets; orifices; notch and weir. Bernoulli equation; flow in pipes; simple pressure piped systems; waterworks equipment; friction and pipe flow; Reynold's experiments, sudden stoppage, water hammer; viscous flow, laminar and turbulent; open-channel flow, regular channels, hydraulic jump, irregular channels, backwater curve, dimensional analysis, dynamic similarity, model testing; meters, valves, pumps, and turbines. Laboratory experiments form a basic part of this course.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Units:* 1.5

42.905 Soil Mechanics I

Purpose—To gain an introduction into some of the more basic principles of soil mechanics and soil-testing procedures. The course will provide a background for people in the engineering and construction field who have little or no theoretical or laboratory testing experience. It is also a preparation for, and prerequisite of, Soil Mechanics II.

Objectives—Successful completion of the course should enable the student (*a*) to conduct and calculate the results of the basic soil mechanics laboratory tests; (*b*) to have an appreciation and working knowledge of soil mechanics terminology and the more basic principles; (*c*) to be able to perform the duties of a junior employee in a commercial soil-testing laboratory.

Outline—The course will consist primarily of lectures and laboratory sessions. The specific topics will be the classification of soils; simple soil weight-volume relationships; soil shear strength; soil permeability; soil compressibility; permeability tests; shear strength tests; consolidation tests.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

This class is limited to 20 students.

42.906 Soil Mechanics II

Purpose—To apply the basic principles of soil mechanics to various design situations. The course should give an appreciation of how soil properties and principles influence design and construction. The intention is to relate the importance of laboratory and field procedures in determining the final design as well as the understanding of some of the more common design procedures. Soil Mechanics I or its equivalent is a prerequisite.

Objective—On successful completion of the course the student should have (*a*) a better understanding of how field and laboratory inspection and testing influence design and hence should be able to conduct these activities more effectively and (*b*) the ability to perform and check simple design calculations.

Outline—The course will consist primarily of lectures, discussions, and design projects. The topics will include material from the following: Seepage analysis, slope stability, earth pressures, earth-retaining structures, and foundation design.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12
Term II (18 weeks) *Units:* 1.5

This class is limited to 20 students.

42.511/611 Public Services Inspection

Purpose—This course is designed for people who wish to enter the field of supervising and inspecting the installation of public services and for those who are already in the field and wish to brush up on new materials and techniques.

Objective—On completion of the course students will have obtained a working knowledge of the subjects listed below, but other courses are required for depth of knowledge in any one subject.

Outline—The various areas are covered by members of BCIT staff and a number of guest lecturers. The first portion of the course covers (*a*) Soils and foundations—nature of soils; soil tests; compaction equipment and uses; types of foundations and excavations. (*b*) Concrete construction—cement, aggregates, plant tests, samples and records, transportation, placing, finishing, curing, joints. This is followed by (*c*) Legal aspects of inspectors' work—competitive bids, contracts, specifications, change orders, liquidated damages, legal considerations, acts of inspectors. (*d*) Utilities—water, sewers, gas-types of pipe, coatings and linings, joints, pipe inspection, installations, tests, checking, records, problems, public relations, other utilities. (*e*) Asphalt paving and asphalt plants—nature of materials, tests, plans and productions, paving procedures, techniques, and problems. (*f*) Inspectors' duties and records—responsibilities, characteristics, qualifications, relations with contractors, pitfalls of certain actions, safety tools, records, public relations. With three sessions on (*g*) Surveying—instruments, measurements of distances, angles and elevations, construction surveys, property surveys, staking.

NOTE—The practical portion of surveying will be held on Saturday mornings (2).

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
42.511 Term I (12 weeks) *Units:* 2.0
42.611 Term II (12 weeks)

42.104 Concrete Technology

Purpose—Foremen, inspectors or potential inspectors working in the concrete industry, truck-drivers (concrete), municipal personnel who do inspection on concrete work, and people involved in contracting are some of the people that this course would appeal to.

Objective—To make an individual a competent inspector of concrete products, placing, and finishing.

Outline—Cement—types, chemistry, manufacture, and testing; aggregates—sources, types, production, and testing; concrete properties—strength, durability, permeability, workability, and testing; concrete mix design; production—mixing, transporting, placing, finishing, and curing; formwork—design, construction, and stripping; special topics—cold weather concreting, finishing, additives. Laboratory experiments.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (12 weeks) *Unit:* 1.0

This course will repeat in Term II, beginning Wednesday, January 14, 1976.

CERTIFICATES IN ELECTRICAL AND ELECTRONICS TECHNOLOGY

Electrical and Electronics Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Electrical and Electronics Technology may be designed to meet the needs of the individual student.

Senior and Advanced Certificates are available in several options.

Telecommunications

Industrial Electronics

Design of Electrical Systems for Buildings

Electronic Circuit Design

Digital Electronics and Systems

ELECTRICAL AND ELECTRONICS TECHNOLOGY

Electrical and Electronics Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students may amend this programme to meet their personal career requirements subject to BCIT approval.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Electrical Circuits I (43.501)		Electrical Circuits I (43.601)	2.5		
Mathematics (for Electrical and Electronic Technologies) (32.522)		Mathematics (for Electrical and Electronic Technologies) (32.622)	2.0		
YEAR II					
Electrical Circuits II (43.502)		Electrical Circuits II (43.602)	2.5	Elective	1.0
Mathematics (for Electrical and Electronic Technologies) (32.524)		Mathematics (for Electrical and Electronic Technologies) (32.624)	2.0		
YEAR III					
Electronic Circuit and Principles I (43.504)		Electronic Circuit and Principles I (43.604	2.0		
Elective	1.0	Elective	1.0	Elective	1.0

List of Suggested Electives

33.508/608	General Physics	2.0
49.900	Draughting	1.0
49.904	Draughting—Electrical and Electronics	1.0
31.503/603	Business and Technical Report Writing	2.0
31.505/605	Technical Writing	2.0

and courses listed under the Electrical and Electronics Technology Programme as approved.

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Electrical and Electronics Technology

43.501/601 Electrical Circuits I

Purpose—To introduce the student to the basic concepts of electrical theory through a series of classroom lectures. The lectures are augmented by laboratory sessions where the student gains an appreciation of the practical applications of electrical theory as applied to simple d.c. (direct current) circuits.

Objective—On completion of this course the student will have the basic knowledge required to progress on to other more advanced electrical and electronic subjects. As well, he will have gained the skill and knowledge required to construct simple electrical circuits; perform electrical measurements utilizing such instruments as the multimeter, electronic voltmeter, and the R-C-L bridge; utilize specialized lab equipment such as bench meters and power supplies.

Outline—Topics covered include the basic concepts of d.c. circuits such as current, voltage, resistance, and power; series, parallel, series-parallel circuits; circuit laws and network theorems; capacitance and inductance in d.c. circuits, together with time constants and waveforms; theory of electrical measurement, which includes the voltmeter, ammeter, and ohmmeter.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

43.501 Term I (12 weeks) *Units:* 2.5

43.601 Term II (18 weeks)

43.502/602 Electrical Circuits II

Purpose—To introduce to the students who have successfully completed 43.501/601 Electrical Circuits I or equivalent, the theoretical and practical study of the behaviour of electrical circuits and networks when driven by a single-phase alternating current (a.c.) source.

Objective—On completion of this course the student will have gained the skills and knowledge required to analyse and design basic single-phase a.c. circuits; perform electrical a.c. measurements to determine current and voltage phase relationship, power-factor correction, apparent, reactive, and true power, resonant frequency; operate lab equipment such as multimeters, watt meters, a.c. power supplies, sine wave generators, amplifiers, and dual-trace oscilloscopes.

The student will also have the basic knowledge necessary to take more advanced electrical or electronic courses. For example, 43.505/605 Three-phase Power Circuits.

Outline—The circuit theory presented in lectures will be verified with many projects conducted in well-equipped, supervised laboratories.

Topics include the sine wave, average and effective values, power and power factor; resistance, capacitance, and inductance as elements in single-phase a.c. circuits; series, parallel, and series-parallel a.c. circuits; phasor diagrams, impedance, admittance, voltage, current and power diagrams, analysis of a.c. circuits with complex algebra; resonance and resonant

circuits, high and low pass filters; the application of circuit laws and theorems to single-phase a.c. circuits; the analysis of two-port networks; coupled circuits.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16
43.502 Term I (12 weeks) *Units:* 2.5
43.602 Term II (18 weeks)

Prerequisite—43.501/601 or equivalent.

43.903 Circuit Devices and Techniques

Purpose—This is an introductory course which will provide a general knowledge of the characteristics and application of the small components and procedures most frequently used in the electrical and electronics industry. It is designed to be followed by in-depth courses in the electrical and electronics field offered in this calendar.

Objectives—To familiarize the student with the small components used to create an operative circuit; to enable the student to handle and test each component commonly used; to understand the how and why of a basic circuit; to be able to perform the basic assembly skills required in the electrical and electronics industry; to become familiar with the basic test equipment and its operation, e.g., V.T.V.M., V.O.M., a.c. and d.c. power supplies and oscilliscope.

Outline—This course is largely a practical course. It will consist of introductory lectures followed by practical labs. Topics such as standards, coding systems, tolerances, and basic test procedures will be covered. The construction and operation of small components such as the resistor, capacitor, inductor, and transistor will form part of the content. Fabrication and assembly techniques will be performed by the student, including soldering, printed-circuit layout, processing, and fabrication, inspection and quality control.

The course will culminate with the student producing an operative circuit in which all techniques, procedures, and components discussed will be used.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15
Term I (12 weeks) *Unit:* 1.0

43.504/604 Electronic Circuits and Principles I

Purpose—This course is the basic electronics course in this programme and should be considered as a prerequisite to higher level electronics courses.

Objectives—To give the student a basic knowledge of how transistors work and how they are used in electronic circuits to perform particular functions.

Outline—The course includes the following topics: 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; a.c. 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 our well-equipped laboratories verifying theory and testing circuit designs.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
43.504 Term I (12 weeks) *Units:* 2.0
43.604 Term II (12 weeks)

This course will be repeated in Term II, held Tuesday and Thursday evenings, beginning January 13.

43.505/605 Three-phase Power Circuits

Purpose—To further develop the electrical knowledge of persons involved with the electrical power industry, either with Hydro, consulting engineering offices, or with the maintenance of power electrics in industry.

Objective—To develop the ability to analyse three-phase electrical power circuits and determine their behaviour under normal operating conditions. This course is a highly desirable prerequisite for all further electrical equipment, industrial electronics, and electrical power courses.

Outline—The course consists of lectures and laboratory sessions, in well-equipped laboratories, to study the behaviour of electrical quantities. Problem-solving sessions are part of the regular programme and problems are assigned from time to time for home study and class-room discussion. A testing programme and final exam assure continued stimulation.

The topics include review of single-phase a.c. 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.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

43.505 Term I (12 weeks) *Units:* 2.0
43.605 Term II (12 weeks)

Prerequisite—43.502/602 Electrical Circuits II or equivalent, if full advantage of the course is to be obtained.

43.506/606 Electronic Circuits and Principles II

Purpose—This course, which is a continuation of Electronic Circuits and Principles I, gives the student an understanding of transistor circuits not included in the previous course, and then covers solid-state devices other than the junction transistor, with some of their circuit applications.

Outline—The course includes the following topics: tuned amplifiers; push-pull power amplifiers; transformerless power amplifiers; the UJT, PUT, and the thyristor family; single-phase power control using the SCR and triac; field-effect transistors; integrated circuits with emphasis on linear circuits; the operational amplifier; heatsink calculations; the tunnel diode; small-signal analysis.

About one-third of the course time is spent in our well-equipped laboratories verifying theory and testing circuit designs.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

43.506 Term I (12 weeks) *Units:* 2.0
43.606 Term II (12 weeks)

43.507/607 Digital Techniques

Purpose—To allow persons who have a thorough knowledge of solid state electronics to become proficient in the rapidly developing and expanding field of digital electronics.

Objectives—On completion of this course the student should (*a*) have the knowledge and basic skills necessary for working with digital circuitry

and (*b*) possess the prerequisite knowledge for entry into other courses employing digital techniques.

Outline—The course is presented in lecture form with laboratory sessions introduced at appropriate intervals. Topics include number systems; Boolean algebra and symbolic logic; AND, OR, NOR, and NAND circuits and their applications; switching circuit analysis and synthesis; Flip Flops and Flip Flop applications; serial and parallel counting systems; decoding and encoding systems; ring counters and shift registers; adder circuits and arithmetic systems; analog to digital methods. Practical applications of digital techniques.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

43.507 Term I (12 weeks) *Units:* 2.0
43.605 Term II (12 weeks)

43.508/608 Telecom Circuits

Purpose—Introduces those principles which form the basis of all telecommunication systems. Covers specialized circuits as used in radio and telephone communications, including receivers and transmitters. Persons employed at the basic installation and service level will have their understanding of telecommunications circuits increased. Students should already understand electrical and electronic fundamentals and be familiar with use of simple lab equipments, especially use of oscilloscopes.

Objectives—Upon course completion, student can expect to (*a*) understand basic types of modulation and demodulation (AM, SSB, PM, FM), including simple frequency and time division multiplexing; (*b*) be capable of performing standard tests of transmitters and receivers, such as tuning, alignment, testing of selectivity and sensitivity.

Outline—Lectures and practical lab sessions. NOTE—This course serves as preparation for courses 43.513/613 Microwave Principles and Devices, and 43.517/617 Telecommunications Systems.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

43.508 Term I (12 weeks) *Units:* 2.0
43.608 Term II (12 weeks)

43.509/609 Electronic Measurement Techniques

Purpose—To instruct the student with a knowledge of basic electronic principles in the selection, operation, and typical methods of using the basic electronic test instruments. This course will aid one in "getting the most out of a test instrument" in day-to-day situations by understanding its operating principles.

Objective—For those of certificate programs this course will provide the ability to cope with the requirements of other courses in the programme. For those now in the field it will allow them to improve their measurement techniques.

Outline—A mixture of lectures, demonstrations, and practice sessions in the laboratory will be provided. Topics covered include theory of operation and measurement techniques using various types of bridges, distortion analysers, electronic voltmeters, frequency counters, oscilloscopes, RF power meters, signal generators, spectrum analysers, and Q-meters. Certain special-

ized techniques dealing with measurement of phase angle, power, and distortion will also be presented.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

43.509 Term I (12 weeks) *Units:* 2.0
43.609 Term II (12 weeks)

Prerequisite—Completion of Electrical Circuits I and II or their equivalent.

43.510/610 Industrial Electronics I

Purpose—To provide a continuation of 43.504/604 Electronic Circuits and Principles I, with emphasis on industrial applications of electronics.

Objectives—On completion, a student should (*a*) be knowledgeable in the use of d.c. amplifiers, operational amplifiers, and phase control of thrysistors (single-and three-phase circuits) and (*b*) have the ability, with additional practice and experience, to "read" (interpret) industrial electronic schematics.

Outline—A mixture of lecture, problem, and laboratory sessions will deal with topics, including d.c. amplifiers, operational amplifiers, unijunction transistors, thyristors, phase control, and applications of thyristors. In the latter half of the course, emphasis will be directed to the interpretation ("reading") of electronic schematics.

This course will not be offered during the 1975/76 year, but will be offered the following year.

Prerequisite—43.504/604 Electronic Circuits and Principles I. 43.505/-605 Three-phase Power Circuits is a desirable prerequisite to obtain maximum benefit from the course.

43.511/611 Electrical Equipment I

Purpose—To allow people with an electrical circuits fundamentals background to study the theory, characteristics, and operations of d.c. generators, motors, and transformers. Electricians, technicians, and draughtsmen will find this course useful in understanding the basic electrical equipment with which they work so frequently. This course is a mandatory prerequisite to 43.519/619 Electrical Equipment II and is to 43.520/620 Industrial Control Systems and 43.523/623 Industrial Distribution Systems.

Objectives—To give the student an appreciation of the theory of operation, the application and the limitations of each basic type of equipment; to enable him to determine the parameters such as speed and voltage regulation, starting torques, inrush current, efficiency, etc.; and to provide him with experience in the connecting, operating, and testing of the equipment.

Outline—The 24 sessions will consist of approximately 50 per cent lectures and 50 per cent practical laboratory exercises. The topics included in the course are d.c. machines, voltage generation and regulation, torque and speed relationships, typical wiring connections; transformers, voltage regulation and efficiency.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

43.511 Term I (12 weeks) *Units:* 2.0
43.611 Term II (12 weeks)

Prerequisite—It is desirable to have 43.505/605 Three-phase Power Circuits or the equivalent.

43.512/612 Protective Devices and Systems

Purpose—To allow students with an electrical circuits fundamentals background to study protective devices such as fuses, circuit-breakers, protective relays, current and potential transformers, and lightning arresters and to prepare the student for 43.922 Generation and Transmission Systems or 43.523/623 Industrial Distribution Systems.

Electricians, technicians, and draughtsmen will find this course useful in understanding the basic protective devices with which they work so frequently.

Objectives—To give the student an appreciation of the functions and limitations of protective devices; to enable the student to compare the characteristics of a protective device with others and be able to plan the co-ordination between these devices. Examples of this are (*a*) co-ordination between feeder protection and motor-overload relays and (*b*) co-ordination between transformer primary fuse and secondary circuit-breaker.

Outline—The 24 sessions will consist of approximately 50 per cent lectures and 50 per cent laboratory and problem sessions. Topics to be discussed are the need for protection, fuses, circuit-breakers, co-ordination of fuses and circuit-breakers, protective relays, current and potential transformers, and lightning arresters.

This course will not be offered in 1975/76.

Prerequisite—It is desirable that a student have 43.505/605 Three-phase Power Circuits or equivalent.

43.513/613 Microwave Principles and Devices

Purpose—For persons associated with the electronics industry, and with little or no experience in high-frequency techniques, this course provides an introduction to microwave principles and devices most frequently encountered in communications, radar, and industrial systems. Specifically, this course will provide theoretical and practical training on the techniques of transmission, generation, and measurement of microwave energy.

Objectives—On successful completion of this course a student can expect to be knowledgeable of the operation of most microwave appliances or devices used in industry. Also, the principles and techniques acquired will be a valuable background for further specialized training in the field of microwave communications.

Outline—A mixture of lectures, discussions, demonstrations, and laboratory projects will provide for an interesting course. Topics include transmission-line characteristics and the ideal lossless line; Smith Chart and graphical representation of the transmission-line; wave guides, coupling tees, attenuators and terminations, directional couplers, detectors, cavities, wave-meters; typical single-channel microwave systems such as would be used in commercial systems.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

43.513 Term I (12 weeks) *Units:* 2.0
43.613 Term II (12 weeks)

43.515/615 Electronic Circuits and Principles III

Purpose—To introduce the student to the techniques and procedures employed in the analysis and design of solid state switching circuits. Spe-

cifically, the course emphasizes both a mathematical and empirical approach to the design and analysis of these circuits, and enables the student to construct, test, and modify his designs and note the advantages and disadvantages of various configurations.

Objective—To enable the student to identify, to thoroughly understand, and to analyse the basic switching circuits. The student will also be capable of performing basic designs in this area and have an appreciation of interfacing problems.

Outline—The course opens with a review of desirable characteristics of high-speed solid state switches and then uses these devices in the design and analysis of pulse generators, pulse shapers, pulse delay circuits, linear ramp generators, Flip Flops, Schmitt Triggers, d.c.-a.c. converters, etc. Designs produced will be tested and verified in a well-equipped pulse laboratory.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

43.515 Term I (12 weeks) *Units:* 2.0
43.615 Term II (12 weeks)

Prerequisite—43.502/602 Electrical Circuits II and 43.504/604 Electronic Circuits and Principles I, or permission of the instructor.

43.516/616 Digital Computer Systems

Purpose—To allow persons with a knowledge of solid state electronics and digital techniques to become familiar with minicomputers and their industrial applications.

Objectives—On completion of this course the student should (*a*) understand the organization and operation of typical minicomputers; (*b*) be able to interface a minicomputer to individual systems; (*c*) be able to write simple programmes in assembler language to test and operate interfaced devices.

Outline—Topic include basic machine organization and operation of a typical minicomputer; detailed analysis of digital computer circuitry; assembler language programming; interfacing the minicomputer to digital and to analogue systems; computer-based supervisory and control systems; an introduction to MOS microcomputers; computer terminals and display systems. The course is presented in a series of lectures and seminars, together with many practical sessions carried out on minicomputers and microcomputers.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

43.516 Term I (12 weeks) *Units:* 2.5
43.616 Term II (18 weeks)

43.517/617 Telecommunications Systems

Purpose—A seminar course to give an overview of the various telecommunications systems. This is a course for those who have a sound background in telecommunications principles and microwave techniques. It provides the "tie-together" for those on certificate programmes, with preference toward telecommunications.

Objective—On completion of this course the student will have a good understanding of telephone networks, general radio and microwave networks, radar and navigation systems.

Outline—The seminar sessions will cover telephone-switching systems principles, multiplex equipment and system layouts, radio propagation and path considerations, system transmission considerations and tests, system noise considerations, radio and radar navigation systems. Laboratory reinforcement will be limited to equipment available and its serviceability.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

43.517 Term I (12 weeks) *Units:* 2.5
43.617 Term II (18 weeks)

43.518/618 Advanced Circuit Design and Fabrication

Purpose—This course, which is a continuation of Electronic Circuits and Principles II, introduces the student to further applications of transistors and linear integrated circuits.

Outline—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. The course then shows how these characteristics may be used to advantage in the design of hybrid high-voltage amplifiers, balanced modulators, phase detectors, broad-band amplifiers, and active filters.

Approximately one-half of the course time will be spent in the laboratory constructing and testing your prototype circuit design.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

43.518 Term I (12 weeks) *Units:* 2.0
43.618 Term II (12 weeks)

Prerequisite—A desirable prerequisite is Electronic Circuits and Principles II or equivalent.

43.519/619 Electrical Equipment II

Purpose—This course is a continuation of 43.511/611 Electrical Equipment I which must be taken first. (Please read description for that course.) This course is a desirable prerequisite to 43.520/620 Industrial Control Systems and 43.523/623 Industrial Distribution Systems.

Outline—Topic include single- and three-phase squirrel-cage induction motors, wound rotor motors, synchronous generators and motors, duty cycles, load applications, and temperature classifications.

This course will not be offered in the 1975/76 year, but will be offered the following year.

43.520/620 Industrial Control Systems

Purpose—This course is a continuation of Electrical Equipment I and II, 43.511/611 and 43.519/619, and students should have taken these courses or their equivalent.

Objectives—To give the student a basic understanding of the electromagnetic control devices used in control system (i.e., motor starters, relays, timing devices, etc.) and to design, connect, and test out control systems, using these devices.

Outline—Topics included in the course are basic control devices, their symbols for preparation of drawings, relays, starters, contactors, and the

preparation of schematic and connection diagrams. Part of this course will involve the actual draughting of electrical diagrams associated with electromagnetic control schemes. Students should have taken a basic course in draughting prior to taking this course, if they wish to become proficient in Electrical Draughting.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

43.520 Term I (12 weeks) *Units:* 2.0
43.620 Term II (12 weeks)

43.521/621 Electrical Power System Analysis

Purpose—To further develop persons who have already a good knowledge of three-phase electrical theory, as outlined in courses 43.505/605 or equivalent.

Objective—To provide an introduction to the use of calculation methods for solving three-phase power system problems for application in the electrical power industry, electrical consulting engineering offices, or to lead to a better understanding of operation and maintenance problems encountered with electric power equipment.

Outline—Graphical analysis methods of voltage regulation; unbalanced three-phase electrical systems with an introduction to symmetrical components; short-circuit studies and per unit methods for solving utility and industrial power system problems; short-circuit forces; circuit-breaker interrupting ability; maximum momentary duty of power equipment; power circle diagrams and transmission diagrams to analyse transmission-line power-handling capabilities; study of power angle diagrams as introduction to power system stability analysis.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

43.521 Term I (12 weeks) *Units:* 2.0
43.621 Term II (12 weeks)

43.522/622 Generation and Transmission Systems

Purpose—This course is designed to be the final course in the area of utility systems.

Objective—To bring together the application of all types of electrical equipment with regard to their use in utility systems and to study utility system organization.

Outline—Topics include synchronous generators; generating stations; transmission-lines; substation layouts; protection of equipment and systems; power rate structures.

This course will not be offered in 1975/76.

Prerequisite—43.505/605 Three-phase Power Circuits, 43.511/611 Electrical Equipment I, 43.519/619 Electrical Equipment II, and 43.512/612 Protective Devices and Systems, or permission of the instructor.

43.523/623 Industrial Distribution Systems

Purpose—This course is designed to be the final course in the area of industrial distribution systems (as opposed to utility distribution systems).

Objective—To bring together the application of all types of electrical equipment with regard to the design of a complete electrical system for an

industrial plant or a commercial building. 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 ratings of equipment. All relevant regulations of the Canadian Electrical Code are discussed and applied.

Outline—Topics included in the course are branch circuit wiring; 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; system protection.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

43.523 Term I (12 weeks) *Units:* 2.0
43.623 Term II (12 weeks)

Prerequisite—Desirable prerequisites are 43.505/605 Three-phase Power Circuits, 43.511/611 and 43.519/619 Electrical Equipment I and II, 43.512/612 Protective Devices and Systems, 43.520/620 Industrial Control Systems, and 43.524/624 Lighting Equipment and Layouts, or equivalent.

43.524/624 Lighting Equipment and Layouts

Purpose—To introduce the fundamentals of lighting sources and lighting layouts. This course is also a desirable prerequisite to 43.523/623 Industrial Distribution Systems.

Objective—To allow the student to perform the necessary calculation in order to lay out a lighting system and to organize drawings showing these lighting layouts complete with branch circuit wiring.

Outline—Topics included in the course are lighting fundamentals, light sources, lighting system calculations, lighting layouts, and branch circuit wiring. Part of this course will involve the actual draughting of electrical building layouts related to lighting systems. Students should have taken a basic course in draughting prior to taking this course if they wish to become proficient in electrical draughting.

This course will not be offered in 1975/76, but will be offered the following year.

43.927 Printed Circuits

Purpose—To allow persons without any previous experience to manufacture a simple printed circuit after a few hours. This course introduces effective methods of printed circuit layout and fabrication.

Objective—On completion of the course a student can expect to have sufficient knowledge to undertake any circuit except those of very intricate and close tolerances.

Outline—75 per cent of course is laboratory procedures with lectures and 16-mm films. Topics include printed circuit board layout, physical and electrical clearances; direct etch method; photographic etch method; and silk screen method.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17
Term I (6 weeks) *Unit:* ½

The course will be repeated, beginning November 5 and in Term II, beginning Wednesday, January 14.

This class is limited to 20 students.

Prerequisite—Students applying for this course must be able to read a schematic.

CERTIFICATES IN FOREST RESOURCES TECHNOLOGY

Forestry Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Forest Resources Technology may be designed to meet the needs of the individual student.

FOREST RESOURCES TECHNOLOGY

Forest Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Elementary Wood Technology (45.902)	1.0	Forest Land Management (45.903)	1.5		
Applied Algebra II (32.901)	1.0	Application and Theory of Lotharithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
YEAR II					
Business and Technical Report Writing (31.503) *Or* Technical Writing (31.505)	1.0	Business and Technical Report Writing (31.603) *Or* Technical Writing (31.605)	1.0	Elective	1.0
Elective	1.0	Ecology (45.226)	1.5		
YEAR III					
Forest and Range Botany (45.120)	1.0	Elective	1.0		
Elective	1.0	Elective	1.5		

List of Suggested Electives

30.501/601	General Chemistry	2.0
33.508/608	General Physics I	2.0
49.900	Draughting	1.0
45.106/206	Photo Interpretation and Mapping	2.5
45.904	Principles and Practices in Wildlife Management	1.0
45.326	Habitat Evaluation	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Forestry Technology

45.902 Elementary Wood Technology

Purpose—This course is designed to enable the student to develop a basic understanding of the structure, properties, products, and uses of the commercial woods in British Columbia. This subject-matter will be found very useful whether the student is engaged in construction, working in the field as a forest technician, embarking on a career in forest products, or interested in doing "do-it-yourself" projects about the home or farm.

Objective—The objective is to enable students (1) to appreciate the nature and value of the woods of the commercial tree species in British Columbia through a study of the structure, composition, properties, products, and uses of wood and (2) to become aware of growth factors and destructive agencies that affect wood and its use.

Outline—The subject-matter includes wood as a construction material, tree growth and natural characteristics, structure and identification of woods, properties of wood, wood deterioration, and wood utilization.

Thursday: 6.45–9.45 p.m. — *Begins:* Sept. 18

Term I (12 weeks) — *Unit:* 1.0

45.903 Introduction to Forest Land Management

Purpose—To acquaint students with management techniques that are employed to solve problems inherent in the use of forest lands.

Objective—To integrate the four major aspects of forest land management into a comprehensive unit which will enable the student to understand management procedures. This is accomplished by (1) relating historical events with present management policies, (2) outlining the Government agencies responsible for forest land management, (3) determining the main uses of forest lands and examining the conflicts which arise, (4) examining land tenure disposition.

Outline—The sessions will be divided into lectures, discussions, and problem-solving, with the greatest emphasis on lectures.

Thursday: 6.45–9.45 p.m. — *Begins:* Jan. 15

Term II (18 weeks) — *Units:* 1.5

45.106/206 Photo Interpretation and Mapping

Purpose—This course is designed primarily for forest technologists; however, it can be applied to any resource field such as geology, land use-analysis, agriculture, etc.

Objective—To provide students in forestry and other disciplines the practical use and application of aerial photographs through the study of forest types and land forms.

Outline—Fifty per cent of this course will deal with photo interpretation techniques and the identification of forest types and land forms; the other 50 per cent will show the student how to compile maps from aerial photos and the techniques of map measurements.

Tuesday: 6.45–9.45 p.m. — *Begins:* Sept. 16

45.106 Term I (12 weeks) — *Units:* 2.5

45.206 Term II (18 weeks)

45.266 Ecology

Purpose—To introduce students to the basic language and concepts of ecology. These principles are applied to consideration of various problems such as the nature and effects of the five fundamental ecological variables (matter, energy, space, time, diversity), self-regulation in ecological systems, etc. Various types of ecological systems are examined in detail with respect to the operation and application of these principles.

Objective—To impart an appreciation of basic language and principles of ecology so that the student may later proceed to more advanced study in various fields. Nonspecialists, and concerned citizens who do not intend to undertake further formal study, should also be better equipped to understand current environmental concerns.

Outline—A sequence of lecture-discussion sessions following rather closely the outline of the textbook *Principles of Environmental Sciences,* by K. E. F. Watt (McGraw-Hill, 1973). Films and other audio/visual aids are utilized when appropriate and useful. Testing will take the form of six short, equal-value, objective examination at roughly equal intervals during the course.

Tuesday or Wednesday: 6.45–9.45 p.m.	*Begins:* Jan. 13 or 14
Term II (18 weeks)	*Units:* 1.5

45.904 Principles and Practices in Wildlife Management

Purpose—To serve as a basic explanation and survey of the field for interested naturalists, sportsmen, and others, as well as for technical and professional graduates in foresty, agriculture, and other resource-based fields.

Objective—To impart an appreciation of the fundamental principles related to management and exploitation of natural animal populations. Central ecological concepts, principles of population biology, and habitat relationships are featured, with study of the methods and techniques of this application in effective wildlife management.

Outline—A sequence of lecture-discussion sessions with practical laboratory exercises where applicable. No specific textbook is followed, but *Wildlife Biology,* by R. Dasmann (Wiley, 1964) is highly recommended. discussions progress from treatment of central concepts through techniques of census, evaluation, etc., to various special problems such as pesticides, wildlife damage, etc.

Tuesday or Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 16 or 17
Term I (12 weeks)	*Unit:* 1.0

45.120 Forest and Range Botany

Purpose—To introduce the whole flora of forest and range plants of British Columbia.

Objective—To identify important plants of our native flora; to appreciate plant classification, associating tendencies of plants and plant geography.

Outline—Basic structure and physiology of plants, plant taxonomy, plant geography, forest regions, biotic zones, and biogeoclimatic zones.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

45.326 Habitat Evaluation

Purpose—To provide knowledge for junior personnel in the renewable resource fields to recognize, describe, and appreciate productive capacities of homogenous land types in British Columbia.

Objective—To enable the students to recognize and evaluate for various uses a wide spectrum of wildland habitats; to appreciate the ecological factors and their functions in the formation of habitats.

Outline—A summary study of ecological factors, geology, climate, biotic conditions, geographical history in the formation of habitats; formation and geography of soils; plant associations, biogeoclimatic classification of British Columbia.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Units:* 1.5

45.905 Conservation, Outdoor, Recreation, Education

Purpose—The preliminary course will acquaint the outdoorsman with some of the recreational options associated with wildlife and provide instruction on safety and enjoyment of the outdoors.

Objective—Upon completion of the course the student will be able to improve hunting standards and promote safe and knowledgeable outdoor recreation and an appreciation of the value of wildlife and natural environments in our modern way of life. The student will be expected to write the CORE examination as a prerequisite to obtaining a hunting licence, which is mandatory under the *Wildlife Act.*

Outline—The following will be covered by lectures, slides, and displays: 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 British Columbia, fish of British Columbia, survival and first aid, archery and canoeing, backpacking and mountaineering.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

The course may be repeated in Term II, dependent on demand.

46.502/602 Pulp and Paper Manufacture

Purpose—To provide a detailed background relating to the pulp and paper industry of British Columbia for those presently engaged in manufacturing and service functions as well as allied industries.

Objectives—To impart an understanding of the processes employed in the manufacture of pulp and paper and to provide information on the mechanical equipment utilized.

Outline—Topics to be covered include wood structure and chemistry, water treatment, mechanical and chemical pulp manufacture, pulp bleaching, kraft recovery systems, chemical preparation and handling, pollution abatement, pulp-mill instrumentation, auxiliary mill equipment, materials of construction; paper and paperboard manufacture, mill hazards and safety, possible future developments.

Guest lecturers will be added for discussion in highly specific areas. Evening field trips to relating plants will be scheduled and students should be prepared to undertake occasional Saturday plant visits. Laboratory demonstrations of related equipment will be provided.

This course will not be offered in 1975/76.

46.503/603 Pulp and Paper Practicum

Purpose—To supplement the technical knowledge and practical skills of those who are directly or indirectly involved in the pulp and paper industry.

Objectives—To develop manipulative skills in laboratory procedures related to pulp and paper manufacture; to provide an understanding of many of the unit processes employed in the pulp and paper industry.

Outline—Enrollees will utilize the facilities of the pilot plant in the processing of whole logs through the unit processes of debarking, chipping, pulping, grinding, bleaching, and papermaking. Certain aspects of the technology will be covered in classroom sessions as required for an understanding of these processes. Concurrently, various of the control and quality tests relevant to these processes will be performed in the laboratory by the class to a suitable level of skill development.

Included in the laboratory phase will be such procedures as wood and chip testing, fibre identification, water and process liquor analysis, in-process and product quality testing. Pollution abatement testing methods may also be included.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

46.503 Term I (12 weeks)
46.603 Term II (12 weeks)

Desirable prerequisite—Lab. experience and (or) completion of 46.502/602.

46.504/604 Lumber and Plywood Manufacture

Purpose—To supplement the technical knowledge of those who are directly or indirectly involved in the wood products industry.

Objective—To cover many aspects of the manufacturing processes and services related to the production of lumber and plywood.

Outline—Topics to be covered include sawmill and planermill operation, saw technology, lumber seasoning, plywood manufacture, recovery, quality control, maintenance organization, accident and fire prevention, mobile equipment, and environmental control. Coastal operations will be compared with those located in the British Columbia Interior.

Classroom discussion will be encouraged and laboratory demonstrations of related equipment will be given.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

46.504 Term I (12 weeks) *Units:* 2.0
46.604 Term II (12 weeks)

CERTIFICATE IN INSTRUMENTATION AND SYSTEMS TECHNOLOGY

Instrumentation Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Instrumentation and Systems Technology may be designed to meet the needs of the individual student.

INSTRUMENTATION AND SYSTEMS TECHNOLOGY

Instrumentation Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	*April*	Units
YEAR I					
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
Process Instruments I (48.901)	1.0	Process Instruments II (48.902)	1.0		
YEAR II					
General Physics (33.508)	1.0	General Physics (33.608)	1.0		
Process Instruments III (48.903)	1.0	Elective	1.5	Elective	1.0
YEAR III					
Electronic Circuits and Principles I (43.504)	1.0	Electronic Circuits and Principles I (43.604)	1.0		
Elective	1.0	Elective	1.5		

List of Suggested Electives

		Units
30.501/601	General Chemistry	2.0
41.502/602	Basic Metallurgy I	2.0
31.503/603	Business and Technical Report Writing	2.0
31.505/605	Technical Writing	2.0
43.507/607	Digital Techniques	2.0
43.516/616	Digital Computer Control Systems	2.5
48.907	Process Control I	1.0
48.908	Process Control II	1.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Instrumentation and Systems Technology

48.901 Process Instruments I

Purpose—To allow persons with little or no experience to learn the fundamentals of industrial instrumentation and to prepare for more advanced course. In addition to the basic terminology and symbols the participants will study the principles and characteristics of commercial instruments used to measure variables such as density of fluids, pressure in vessels, level in tanks, and flow in pipes and ducts.

Objective—On completion of this course the student will be able to perform routine instrument calibrations, understand the principles of their operation, and be familiar with standard calculations related to the variables studied.

Outline—The course will consist of a series of lectures explaining how instruments work, the solution of typical instrumentation problems, as well as laboratory sessions working with commercial instruments.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

48.902 Process Instruments II

Purpose—Although persons with no prior instrumentation knowledge may be admitted to this course, it is basically a continuation of 48.901 Process Instruments I and covers the principles and methods of measurement of the following variables: Common ways of measuring temperature is covered thoroughly, viscosity and its importance in lubrication and flow measurements is dealt with. Other important variables studied include humidity, dew point, and gas analysis measurements.

Objective—On completion of this course the student will have gained familiarity with the methods of measurement and operation of the devices studied. He would be able to perform bridge and potentiometric measurements, understand dew point and humidity measuring devices as well as be able to understand and use chemical and electrical gas analysis instruments.

Outline—The course consists of lectures, problem-solving assignments, and laboratory sessions working with actual commercial instruments.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (12 weeks) *Unit:* 1.0

48.903 Process Instruments III

Purpose—This course is a continuation of Process Instrument I and II, but they are not prerequisites. Topics covered include measurement of electrolytic conductivity and pH, basic spectrometry and typical spectrometer alignments, basic chromatography and chromatograph operating principles.

Objective—Successful completion of this course will indicate an understanding of the several methods of measurement covered and a familiarity with typical equipment used in those measurements. Though not a prime aim of this course, fault finding and correction will also be covered.

Outline—The course will consist of lectures, demonstrations, and problem-solving assignments and discussions, together with laboratory experi-

ments reinforcing and expanding the class presentations. Most work is with commercial/industrial equipment.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

48.907 Process Control I

Purpose—To prepare such as engineers from other disciplines, salesmen, plant operators, and technicians for the further study of process control techniques in Process Control II. This course gives theoretical and practical understanding of the operating characteristics of control circuit components such as valves, dampers, positioners, controllers, measuring elements, and signal lines. In addition, responses of simple processes and controllers will be studied. Most solutions will be obtained graphically.

Objective—On completion of this course successful students will be able to identify the elements of a process control loop and the characteristics of those elements. They will be able to make adjustment of simple controllers (and related equipment) and to assess the value of the new settings.

Outline—This course will be presented as lectures, demonstrations, and problem-solving discussions. In addition, laboratory work with typical industrial equipment and home assignments will be included.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

48.908 Process Control II

Purpose—To provide instruction and laboratory practice for persons with some experience in measurement and control in commerce and (or) industry. Process Control I provides the necessary background.

Objective—On completion of this course successful students will understand process control loop calibration and tuning (adjustment), including three mode, feedback and feedforward, ratio and cascade control.

Outline—This course will consist of lectures, demonstrations, and problem-solving discussions, with practice on laboratory systems. An introduction to analog computation will be included.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (12 weeks) *Unit:* 1.0

CERTIFICATES IN LANDSCAPE TECHNOLOGY

Certificate in Landscape Technology

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Landscape Technology may be designed to meet the needs of the individual student.

CERTIFICATE PROGRAMME IN LANDSCAPE TECHNOLOGY

This programme is being offered in co-operation with the British Columbia Society of Landscape Architects. It has the full support of the British Columbia Nursery Trades Association.

Students seeking further information and guidance should contact the course co-ordinator, E. Ibsen Brodersen, telephone 437-3915.

Changes in required and elective course to meet the students' objectives will be considered.

September		*January*		*April*	
YEAR I	Units		Units		Units
Surveying Draughting (51.507)	1.0	Surveying Draughting (51.607)	1.0		
Structural Material (53.901)	1.0	Soil Improvement (53.902)	1.5		
YEAR II					
Landscape Structurals (53.904)	1.0	Basic Horticulture (53.906)	1.5	Plant Introduction (53.911)	1.0
Grading and Drainage Plan Production (53.903)	1.0	Park and Recreation Facility Studies (53.905)	1.5		
YEAR III					
Management (53.908)	1.0	Cost Estimation (53.909)	1.5		
Plant Material Study (53.907)	1.0	Planting Plan (53.910)	1.5		

List of Suggested Electives

(Students, when considering electives, should note that the electives are listed in descending order of priority.)

		Units
32.901	Applied Algebra II	1.0
30.501/601	General Chemistry	2.0
51.502/602	Field Survey I	2.5
33.508/608	General Physics	2.0
42.102	Hydrology	1.0
45.226	Ecology	1.5
44.908	Pestology and Plant Protection	1.0
42.103	Statics	1.0
45.326	Habitat Evaluation	1.5
42.205	Strength of Materials	1.5
44.909	Landscape Irrigation	1.0

Certificate in Landscape Technology will be awarded on completion of 15 units of work. Advanced Certificates may then be earned after completion of further course work.

British Columbia Society of Landscape Architects may issue a Landscape Technician's Certificate to applicants who have obtained a minimum of 10 units upon successful completion of the courses 53.901 to 53.911, plus a minimum 10 units in technical education and practical training within the field of landscape technology. For further information on how to obtain credits, *see* the course co-ordinator, E. Ibsen Brodersen (preceding page).

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Landscape Technology

53.901 Structural Material

Structural material study for landscape developments (rock, concrete, brick, wood, asphalt, glass, and plastic).

Purpose—Material introduction with specifications for students with little or no experience in landscape technology.

Objective—On completion of the course the student can expect to have the foundation knowledge of the origin, qualities, and use of the material in landscape design and management and to specify this material for specific jobs.

Outline—The lectures will provide a cross-section of above materials and leads to specification exercises. Topics include selection and location of materials in the landscape fabrics, especially rock, cement, concrete, masonry (clay and concrete), wood, asphalt.

This is the first part of the Structural section in the Landscape Technology Program.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

Term I (12 weeks) *Unit:* 1.0

53.902 Soil Improvement

(Soil technology for landscape developments.)

Purpose—To allow persons with little or no experience in soil and soil improvement to gain an understanding of soils and improvement of soil for plant growth, also to gain basic knowledge of water and forest influence on soils in horticulture as well as in soil mechanics.

Objectives—On completion of the course a student can expect to—(*a*) have a basic knowledge of soils and soil biology and of soil mechanics; (*b*) be knowledgeable of soil improvements for plant growth and of drainage and irrigation; (*c*) have basic knowledge of soil compaction, permeability, and soil pressure.

Outline—A mixture of lectures and discussion. Topics include subsoils, topsoils; organic and inorganic soil improvement media; erosion control; surface and subsurface drainage; irrigation; earth pressure of concern for such as retaining-walls and foundations for structures in landscape projects.

This course also forms the first part of the Horticulture section within the Landscape Technology Programme (53.902, 53.906, 53.911, 53.907, and 53.910).

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Units:* 1.5

53.903 Grading and Drainage

(Grading and drainage plan production)

Purpose—This is a draughting course, introducing persons with some training in technical draughting and some knowledge of soil technology for landscape use to requirements and techniques concerning grading and drainage of land.

Objective—On successful completion of the course a student can expect to know sources of information concerning Governmental regulations covering grading and drainage of land, and be capable of producing detail plans showing grading and drainage of areas for landscape projects.

Outline—A mixture of lectures and discussion leading to practical draughting exercises in detail plan production. Before the last four nights of the course, the students are given special home assignment to present on the last night of the course.

This is also an integrated part of the three-year programme in Landscape Technology.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

Term I (12 weeks) *Unit:* 1.0

53.904 Landscape Structurals

(Landscape structural detail drawing.)

Purpose—To introduce persons with basic knowledge of landscape materials and some training in technical draughting to the production of structural detail plans for use in the landscape industry. It is essential to know that design, selection, and use of structural materials in landscape projects usually differ from the use of such material in the building industry.

Objective—On successful completion of the course a student can expect to have a basic knowledge of what technical details a landscape working drawing consists of, and be able to produce detail plans for structural items commonly used in landscape projects.

Outline—A mixture of lecture periods, short field trips, and draughting practice, i.e., draughting projects assigned weekly to be completed in class and as homework. The following areas will be covered: 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 drawing—sketching, preparation, method of presentation, etc. Site work—recording existing data.

This course is also the second part of the Structural section in the Landscape Technology Programme (53.901/904).

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

53.905 Parks and Recreation

(A study of parks and recreation facilities.)

Purpose—To make it possible for persons with little or no experience in the maintenance and (or) basic design of parks and recreation facilities to gain working knowledge in this field.

Objectives—On completion of the course the student can expect to (*a*) have basic knowledge of what facilities are required for parks and recreation areas for public use; (*b*) be knowledgeable about layouts of areas for indoor or outdoor sports and other recreation facilities; (*c*) to know how and where to obtain information on regulations governing the layout of such areas; (*d*) have basic knowledge of maintenance requirements for recreation facilities.

Outline—A mixture of lectures and discussions on the provision of recreational facilities, planning principles, and space requirements for sports, art, education, etc. Facilities to be discussed are swimming-pools, ice arenas, lawn bowling, curling, golf, marinas, resorts, beaches, children's playground. General features—fences, walls, lights, parking, etc. General maintenance. Also the actual design and draughting of one major community park.

This course is also an integrated part of the three-year programme in Landscape Technology.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (18 weeks) *Unit:* 1.5

53.906 Basic Horticulture

(Basic horticulture and plant protection for landscape use.)

Purpose—To introduce persons with no or little knowledge of horiculture to the study of plants and their value in landscape developments.

Objective—On completion of the course the student can expect to have a basic knowledge of botany; plant classification, identification, propagation, food requirements, hardiness; and handling and protection of plants from nursery to future site.

Outline—A mixture of lectures and discussions. The students will be introduced to ways of preparing plants for herbarium and will be required to start such herbarium for use in courses 53.911/907.

This course also forms the second part of the Horticulture section within the Landscape Technology Programme.

Tuesday: 6.45–9.45 p.m. *Begins:* Jan. 13

Term II (18 weeks) *Unit:* 1.5

53.907 Plant Material Study

(Plant material studies for landscape use.)

Purpose—To allow persons with a limited knowledge of plant material to further study these materials with specific reference to their suitability for use in man-made landscapes and particular types of landscape projects.

Objective—On successful completion of the course the student can expect to have knowledge of the types and varieties of indigenous and exotic trees, shrubs, and ground covers, with the characteristics and values which aid in the selection of these materials for use in landscape.

Outline—A series of lectures, discussions, and field trips on trees, shrubs, herbaceous and evergreen ground covers, and vines, including descriptions and characteristics, varieties, their landscape use and value, cultural conditions, size and spread in seven to ten years, hardiness zone, availability, and available sizes. Each student is expected to research specific varieties and species and include these along with the course material, presenting these in the form of a handbook, usable for future reference.

This couse also forms the fourth part of the Horticulture section of the Landscape Technology Programme (53.902, 53.906, 53.907, 53.910, and 53.911).

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

53.908 Management

(Management for landscape technicians.)

Purpose—To provide a background of management skills required in the area of landscape developments, including the legal requirements affecting land use contract documentation, ethics, and professional liability.

Objective—Upon completion of the course the student can expect to have basic knowledge of professional responsibilities in respect to (*a*) the consultant's relationship to client and contractor; (*b*) the contractor/client relationship; (*c*) the production of contract documents, legal liability, and contract supervision.

Outline—The course consists of lectures and discussion aimed to give an insight into the practical relationship between client, contractor, and consultant which must exist to produce acceptable development. Students will require some basic standard documents to be used during the course.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (12 weeks) *Unit:* 1.0

53.909 Cost Estimation

(Area take-off and cost estimation for landscape technicians.)

Purpose—To introduce to persons with limited or no experience in cost estimation of landscape projects to (*a*) methods of area and volume survey; (*b*) study of work capacity; (*c*) administration and maintenance costs; (*d*) methods of journal and accounting.

Objective—On completion of the course the student can expect to do such area and volume survey from landscape plans as to establish quantity and capacity as bases for cost estimation.

Outline—Mathematics, area, volume, surface; weights and measures; cuts and fills; work capacity—man-hours, equipment; overhead expenses, journal, bookkeeping, and introduction to the metric system.

This course also forms an integrated part of the three-year programme in Landscape Technology.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (18 weeks) *Unit:* 1.5

53.910 Planting Plan

(A draughting course in planting plan production.)

Purpose—To allow persons with some knowledge of horticulture, soil, and plants, and with some experience in technical draughting, to further study of plant material for use in landscape projects, and to lay out detail planting areas.

Objectives—On successful completion of the course a student can expect to (*a*) be knowledgeable of climate and soil tolerance and plant behaviour in major populated areas in British Columbia and (*b*) be able to produce detail planting plans for a given master plan for land development in this Province.

Outline—A mixture of lectures, discussion, and practice sessions. Topics include climate and soil condition; solitary, group, and mass planting; plant size, quality, and distance at planting; specification of material and planting procedure.

This course also forms the fifth part of the Horticulture section within the Landscape Technology Programme (53.902, 53.906, 53.907, 53.910, and 53.911).

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (18 weeks) *Unit:* 1.5

53.911 Plant Introduction

(Introduction of plant material for landscape use.)

This course consists mainly of field trips.

Purpose—To introduce students with limited knowledge of trees, shrubs, and herbaceous plants to such plant material as is used within the field of landscape developments.

Objective—On completion of the course the student can expect to have gained knowledge of such as size, form, colour, and growing habit of trees, shrubs, vines, and climbers, perennials, annuals, and other herbaceous plants. The student will also be given information as to the suitability of plants in this local climate zone.

Outline—Two classroom evenings. Two field trips to nursery. Eight field trips to introduce native trees, park trees, street trees, older park shrubs, herbaceous plants, turf.

This is also the third part of the Horticulture section of the Landscape Technology Programme (53.902, 53.906, 53.907, 53.910. 53.911). The students will be expected to collect leaves, twigs, etc., for the preparation of herbarium for use in course 53.907.

Tuesday: 6.45–9.45 p.m. *Begins:* June 1

Term III (12 weeks) *Unit:* 1.0

CERTIFICATES IN MECHANICAL TECHNOLOGY

Engineering Technician Certificate in Mechanical Technology

Engineering Technician Certificate in Draughting

Senior Engineering Technician Certificate in Mechanical Technology

National Diploma in Mechanical Technology

MECHANICAL TECHNOLOGY

The Mechanical Programme is presented in two sections:

Certificate and Diploma Programmes in Mechanical Technology.

Certificate Programme in Draughting.

While the courses are presented in this way they are open to anyone who can profit from them either for interest sake or for credit.

A student taking courses for credit shall complete one certificate before taking subjects listed for the next certificate. To proceed to the Diploma section a student must make application to the Extension Division for permission to proceed and to submit his proposals for completing it. A Board will rule on the Diploma proposals and the student's acceptability for the Diploma section of the programme.

CERTIFICATE AND DIPLOMA PROGRAMME IN MECHANICAL TECHNOLOGY

Engineering Technician Certificate

Course No.	Course	Units	Weeks
32.505/605	Mathematics (Calculus I)	2.0	24
31.503/603	Business and Technical Report Writing	2.0	24
	Or		
31.505/605	Technical Writing		
41.506/606	Basic Metallurgy I	2.0	24
43.511/611	Electrical Equipment	2.0	24
49.507/607	Applied Mechanics	2.5	30
49.900	Draughting	1.0	12
49.903	Mechanical Draughting	1.0	12
49.540/640	Introduction to Fluid Process	2.0	12
	Approved Elective	0.5	12
		15.0	

Course Descriptions for Above Courses

32.505/605	Mathematics (Calculus I)—*see* Mathematics Course descriptions.
31.503/603	Business and Technical Report Writing—*see* English Course descriptions.
31.505/605	Technical Writing—*see* English Course descriptions.
41.506/606	Basic Metallurgy I—*see* Chemical and Metallurgical Technology Course descriptions.
43.511/611	Electrical Equipment—*see* Electrical and Electronics Course descriptions.
49.900	Draughting—*see* course description following Draughting Certificate Programme.
49.903	Mechanical Draughting—*see* course description following Draughting Certificate Programme.

Courses in Mechanical Technology

49.507/607 Applied Mechanics

Purpose—This course is intended to help persons working in Engineering drawing offices or anyone needing engineering knowledge to do basic design work.

Outline—Statics—addition of vectors and forces on a body, moments, couples, and free-body diagrams, force analysis of structure. Beams, types of loads, shear and moment diagrams, calculations of position of centroids and second moments of area. Dynamics—problems involving friction, review of the laws of motion; definitions and calculations involving work, energy and power; review of centrifugal force; balancing of rotating masses. Kinematics of rigid bodies. Hydrostatics—centre of pressure; transmission of fluid pressure. Hydraulics—definition of pressure head, velocity head, potential head, bernoulli theorem, bouyancy.

The course will be covered by lectures and practical problems in the laboratory.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

49.507 Term I (12 weeks) *Units:* 2.5
49.607 Term II (18 weeks)

49.540/640 Introduction to Fluid Processes

Purpose—This course is designed for students requiring a basic understanding of both fluid mechanics and thermodynamics. It will also be useful to technical people who wish to take more advanced practical engineering courses in these subjects.

Objective—Students completing this course will understand and be able to apply the fundamentals of fluid mechanics and dynamics.

Outline—Through lectures, assigned problems, and practical tests, the course content is presented in two units. Unit I—covers the basic principles of fluid properties, energy and power transfer in fluid flow, flow measurement and pipe flow characterics, as well as centrifugal pump theory and practical performance demonstrations. Unit II—covers the basic principles of heat energy exchange, simple thermodynamic cycles, thermodynamic laws, fuel characteristics in energy release and interval combustion engine theory and lab investigations.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

49.540 Term I (12 weeks) *Units:* 2.0
49.640 Term II (12 weeks)

Senior Engineering Certificate

Course No.	Course	Units	Weeks
32.506/606	Mathematics, Calculus II	2.0	24
22.941/942	Work Study I and II	2.5	30
49.506/606	Advanced Engineering Draughting	2.0	24
49.510/610	Strength of Materials	2.5	30
49.518/618	Economics of Machine Tool Operation	2.0	24
49.519/619	Metrology and Quality Control	2.0	24
49.542/642	Fluid Processes	2.5	30
		15.5	

Course Descriptions for Above Courses

32.506/606 Mathematics (Calculus II)—*see* Mathematics Course description.

22.941/942 Work Study I and II—*see* Technical Management Course descriptions.

49.506/606 Advanced Engineering Draughting—*see* course descriptions following Draughting Certificate Programme.

49.510/610 Strength of Materials

Purpose—To provide understanding and basic skills in problem-solving in an important area for mechanical engineering design. This course is intended for technologists, technicians, designers, draughtsmen, technical sales personnel, etc., and is relevant to companies concerned with design and (or) manufacture of products subject to loads or internal pressures.

Objectives—To provide students with basic skills that help them to decide on the size of a part subject to static loading with safety; to prepare them for the design course 49.531/631.

Outline—Properties and testing of materials tension, compression, shear, torsion, bending, and deflection. Statically indeterminate axial, torional, and bending systems, combined loading and use of Mohr's Circle to determine principal stresses; columns, rivetted and welded connections.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

49.510 Term I (12 weeks) *Units:* 2.5
49.610 Term II (18 weeks)

49.518/618 Economics of Machine Tool Operation

Metal-cutting materials, mechanics of metal cutting, tool geometry, single point and multipoint cutting tools, tool life, and cutting speeds. Metal removal rates, and power consumption.

Experimental work in the above areas to demonstrate the principles. Also an introduction to effective processing and estimation of machinery operations and costs. Economics of various methods of production. Effect of learning on operator and operations.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

49.518 Term I (12 weeks) *Units:* 2.0
49.618 Term II (12 weeks)

49.519/619 Metrology and Quality Control

Purpose—Intended for persons engaged in inspection of components, or installing inspection systems.

Outline—Interferometers, optical comparators, measurement of surface texture and surface flatness. Air and electronic gauging procedures. Metrology of angles and screw threads. Use of precision measuring instruments.

Fundamentals of inspection, lot-by-lot inspection and sampling continuous products, installing such systems. Applying quality control in the plant. Mass production gauging. Statistical quality control and methods.

The course will be covered by lectures and laboratory work.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

49.519 Term I (12 weeks) *Units:* 2.0
49.619 Term II (12 weeks)

49.542/642 Fluid Power

Purpose—To provide an understanding of pneumatics, fluidics, and hydraulic control systems.

This course should be of value to people in industries in which control and powering of mechanical equipment and processes is needed.

Objectives—Understanding of pneumatic circuits, air valve operation and how to represent circuits with correct A.S.I. symbols; to introduce students to fluidic devices; to determine component specifications, including capacity and power capabilities.

Outline—Fluid power circuits will be set up during classes to familiarize the student with components and systems operations. The course will include theory of pressure loss in pipe systems to enable flow loss calculations.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

49.542 Term I (12 weeks) *Units:* 2.5
49.642 Term II (18 weeks)

National Diploma in Mechanical Technology

Entry to this programme requires completion of the previous two technician certificates. Applicants will be required to submit the selection of electives required in this programme, and admission will be governed by an admissions committee.

Course No.	Subject	Units	Weeks
49.531/631	Mechanical Design	2.5	30
49.585/685	Production Engineering	2.5	30
49.560/660	Thermodynamics	2.5	30
49.520/620	Heating, Ventilation, and Air Conditioning	2.5	30
	Elective	5.0	
		15.0	

Course Descriptions for Above Courses

49.531/631 Mechanical Design

Fundamental principles, load factor or factor of safety; yield or proof stresses; ultimate stress; statically determinate and statically indeterminate conditions; design of beams; conventional, trussed beams, tension field beam; theories of failure, static loads; phenomena of fatigue, stress concentration factors. S-n curve; modified Goodman diagram; other methods for designing under fatigue conditions; welded and rivetted connections.

Design of shafting; torsion; theory of failure, combined bending and torsion; critical speed for rotating shaft; torsion on thin-walled shells; torsion and bending on thin-walled shells; torsion on noncircular sections, belts, clutches, and brakes; springs.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

49.531 Term I (12 weeks) *Units:* 2.5
49.631 Term II (18 weeks)

49.585/685 Production Engineering

Purpose—To provide a general insight into the various aspects of production engineering related to manufacturing.

Objective—To enable students to become reasonably proficient in understanding the problems of manufacturing, and for technicians and technologists basically involved in manufacturing, its methods will be of value in upgrading to management levels.

Outline—Term I—covers plant organization and management plant locations and layout, labour relations personnel studies, case histories and studies. Term II—tool engineering, planning and processes, economics and related manufacturing methods and requirements, occasional workshop labs and field trips.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

49.585 Term I (12 weeks) *Units:* 2.5
49.685 Term II (18 weeks)

49.560/660 Thermodynamics

Purpose—This course is useful to the student, who will benefit from a deeper understanding of the theory and practical application of thermodynamic machines in the process industries, power generation, automotive, and aircraft fields.

Objective—The successful student will be able to understand the functions and characteristics of thermal machinery.

Outline—Through lectures, assigned problems, and laboratory investigations, the course will cover the basics of air compressors, internal combustion engines, gas turbine cycles, properties of mixed gases, combustion theory, vapour processes and cycles, refrigeration, air conditioning, and heat transfer.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

49.560 Term I (12 weeks) *Units:* 2.5
49.660 Term II (18 weeks)

49.520 Heating, Ventilation, and Air Conditioning—Layout

Purpose—To provide a course for technical people involved with heating, ventilating, and air-conditioning systems so that they may best lay out an engineered system to meet customer requirements.

Objectives—To lay out a duct system to deliver the required air flow for different heating units; to understand a hydronic piping system and how to control it.

Outline—Description and operation of equipment and layout of required ducts, dampers, registers, and grills. Experimentation of controls in an air-conditioning system for good balancing will be carried out by students during the sessions.

Monday: 6.45–9.45 p.m.	*Begins:* Sept. 15
49.520 Term I (12 weeks)	*Unit:* 1.0

49.620 Heating, Ventilation, and Air Conditioning—Design

Purpose—This course is of value to people in industries involved with heating, ventilating, and air conditioning.

Objectives—To understand air psychrometrics and refrigerant properties; to determine heating and cooling loads for an air-conditioned space; to familiarize the students with equipment associated with air distribution, heating, and cooling.

Outline—Refrigeration and air-conditioning principles and practices; air-handling processes; evaluation of building cooling and heating loads.

Monday: 6.45–9.45 p.m.	*Begins:* Jan. 12
49.620 Term II (18 weeks)	*Units:* 1.5

Prerequisite—49.520 Heating, Ventilation, and Air Conditioning—Layout.

49.971 Analysis of Machining Techniques

Purpose—This course is designed for students in the mechanical field or those entering it.

Objective—To provide an in-depth study of the more sophisticated machining operations used in industry.

Outline—Through a series of projects which emphasize practical work in small groups, the student is involved in such laboratory exercises as programming for a numerical control machine, a jig boring operation, a milling machine operation, 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.

Wednesday: 6.45–9.45 p.m.	*Begins:* Sept. 17
Term I (12 weeks)	*Unit:* 1.0

The following list gives some guidance on the range of the electives that will be considered for the Diploma of Technology from this programme. These may be either mechanical subjects and (or) mechanically associated subjects. Entry to the Diploma Certificate is not automatic and the interviewing committee will require to know what electives the candidate proposes. The committee has the right to make certain electives mandatory.

1. Advanced Machining Techniques.
2. Electrical Equipment Applications.
3. Pulp and Paper Manufacture.
4. Industrial Instrumentation.
5. Hydraulics.
6. Systems Analysis.

7. Management Psychology I.
8. Management in Industry.
9. Labour Relations I and II.
10. Business Law I and II.
11. Numerical Methods for Engineering.

CERTIFICATE PROGRAMME IN DRAUGHTING

Course No.	Subject	Units	Weeks
49.900	Draughting—Fundamentals	1.0	12
49.903	Draughting Mechanical	1.0	12
49.904	Draughting—E. and E.	1.0	12
49.905	Draughting—Civil and Structural	1.0	12
49.901	Draughting—Heating and Air Conditioning	1.0	12
49.906	Advanced Engineering Draughting	1.0	12
	Approved electives	9.0	
		15.0	

List of Suggested Electives

Applied Algebra II.
Technical Writing.

Or

Business and Technical Report Writing.
Survey Draughting (Term II only).
Introduction to Data Processing.
Computer Programming I.
Public Services Inspection.
Supervisory Skills.
Circuit Devices and Techniques.

49.900 Draughting

Purpose—To provide a reasonable understanding of the basic graphical language of communication used between management, engineering, production, and industry in general.

This would be of value to management personnel and others involved in "reading" drawings.

No previous draughting experience or prerequisite is required. since this course starts from the ground up.

Objective—This course covers the techniques of producing and reading drawings, using standard format, and will develop the basic skill in applying these techniques.

Outline—Topics of interest are use of instruments, linework, lettering, geometric construction, isometrics with emphasis placed on orthographics, auxiliary views, sections, and dimensioning.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

Term I (12 weeks) *Unit:* 1.0

49.901 Draughting—Heating and Air Conditioning

Purpose—To provide a draughting and design course for technical people involved with heating, ventilating, and air conditioning systems.
It should be beneficial for tradesmen, planners, estimators, consultants, and others with a general interest.

Objective—To accomplish a reasonably good understanding of heating, ventilating, and air conditioning by studying design problems a student will reach an acceptable standard of proficiency in graphically representing them for industrial and architectural situations.

Outline—Heating and ventilating sizing of systems, ducting and air conditioning and fire regulations, instrumentation and control, piping and electrical requirements.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (12 weeks) *Unit:* 1.0

Prerequisite—49.900 Draughting or equivalent.

49.903 Draughting—Mechanical

Purpose—To provide a higher degree of skill, proficiency, and understanding of the many facets and languages of mechanical engineering drawing.

Objective—To enable students to handle effectively graphical design situations and problem-solving, using basic skills and information in more technical applications as would be expected of a mechanical technician.

Outline—Covers intersections, developments, descriptive geometry, basic gearing dimensioning, weld symbols, limits and fits, dimensioning threads and fasteners, and working drawing for design, production, and quality control.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (12 weeks) *Unit:* 1.0

Prerequisite—49.900 Draughting or equivalent.

49.904 Draughting—Electrical Electronics

Purpose—To provide a general insight into the various aspects of electrical electronic draughting; to give designers/circuits and (or) PCB's manufacturing a better understanding of the mechanical problems of installation. All personnel involved in electrical and electronic device manufacturing.

Objective—The student should become reasonably proficient in understanding and applying various skills and techniques and be able to complete electrical and electronic drawings to a technologist level of competence.

Outline—Covers descriptive geometry, mechanical hardware, electronic device symbols, production drawings, block schematic and wiring diagrams, PCB's, wiring and industrial controls.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (12 weeks) *Unit:* 1.0

49.905 Draughting—Civil and Structural

Purpose—To provide a general insight into the graphical aspects of civil and structural problems.

It should be of benefit to management, construction workers, foremen, planners, and estimators.

Objective—To accomplish a good understanding and reasonable proficiency in applying skills and techniques toward solving civil and structural engineering problems at a technologist level.

Outline—Covers topographical draughting, intersections and developments, descriptive geometry, contours, section, profiles, cut and fill with civil and structural problems and projects.

Monday: 6.45–9.45 p.m. *Begins:* Jan. 12

Term II (12 weeks) *Unit:* 1.0

Prerequisite—49.900 Draughting or equivalent.

49.906 Advanced Engineering Draughting

Purpose—To provide an opportunity to study more advanced graphical methods of solving mathematical engineering problems.

This course should be of considerable interest to even the most proficient technologist or engineer involved with design, production, and quality control.

Objective—On completion of this course a student should be able to solve graphically a wide variety of practical engineering problems with a high degree of accuracy and proficiency.

Outline—Consists of descriptive geometry, geometric tolerancing, simple tooling and drill fixtures, cams, linkages and motion, graphical deflections of beams and shafts.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (12 weeks) *Unit:* 1.0

CERTIFICATES IN MINING TECHNOLOGY

Mining Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Mining Technology may be designed to meet the needs of the individual student.

MINING TECHNOLOGY

Mining Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
Geology (50.502)	1.0	Geology (50.602)	1.0		
YEAR II					
General Physics (33.508)	1.0	General Physics (33.608)	1.0	Elective	1.0
Mining (50.503)	1.0	Mining (50.603)	1.0		
YEAR III					
Business and Technical Report Writing (31.503) *Or* Technical Writing (31.505)	1.0	Business and Technical Report Writing (31.603) *Or* Technical Writing (31.605)	1.0	Elective	1.0
Elective	1.0	Elective	1.0		

List of Suggested Electives

		Units
41.305/405	Assaying	4.0
42.103	Statics	1.0
51.103/203	Engineering Surveying	2.5
42.205	Strength of Materials	1.5
49.900	Draughting	1.0
33.404	Mining Geophysics	1.5

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Mining Technology

50.502/602 Geology

Purpose—To allow people in the mining industry who have had no formal training in geology an opportunity to obtain a framework on which previous and future geological experience can be organized. Suitable for anyone with an interest in general geology.

Objectives—In addition to gaining an outline of geology as related primarily to mining, the student will be competent in identifying the common economic and rock-forming minerals, and in classifying the more common rock types. Additionally, he will have some appreciation of the economic value of minerals, and an insight into the structural problems associated with orebodies.

Outline—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.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

50.502 Term I (12 weeks) *Units:* 2.0
50.602 Term II (12 weeks)

50.503/603 Mining

Purpose—For people in the mining industry who have had no formal mining training an opportunity to obtain an outline on which previous and future mining experience can be organized. Suitable for anyone with an interest in a broad picture of mining.

Objectives—To familiarize the student with all phases of the mining industry and introduce him to some elementary calculations for determining ore reserves.

Outline—Nature of the mineral industry, search for economic mineral deposits; exploration of a mineral deposit, sampling methods, weighting and averaging assay values, calculation of ore reserves; acquisition of title to mining property, the claim system; exploitation of deposits, choice between surface and underground methods, development patterns for underground mining, planned systematic extraction, classification of surface and underground mining methods, description of common methods using actual examples; reclamation methods.

Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 17

50.503 Term I (12 weeks) *Units:* 2.0
50.603 Term II (12 weeks)

50.901 General Interest Geology and Prospecting

Purpose—To give 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 will be discussed. Designed for the part-time prospector and full-time prospectors.

Objectives—The student will be capable of identifying the common rock-forming minerals, rocks, and ore minerals; will have an appreciation of geological structures and what constitutes an ore deposit; will be able to read topographic and geological maps and understand the procedure for staking claims; will have some proficiency in the use of the magnetic compass, dip needle, scintillometer, mineral lamp, gold pan, and geochemical soil-sampling kit; will understand the application of diamond drilling.

Outline—The topics indicated in the above objectives will be studied in a very practical "hands-on" approach. Lectures and films will be used to assist in giving the student practical prospecting techniques.

Wednesday: 6.45–9.45 p.m. *Begins:* Jan. 14

Term II (14 weeks)

CERTIFICATES IN NATURAL GAS AND PETROLEUM TECHNOLOGY

Natural Gas and Petroleum Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Natural Gas and Petroleum Technology may be designed to meet the needs of the individual student.

NATURAL GAS AND PETROLEUM TECHNOLOGY

Natural Gas and Petroleum Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September		*January*		*April*	
YEAR I	Units		Units		Units
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903)	1.0
Distribution and Utilization—Gas (47.521)	1.0	Distribution and Utilization—Gas (47.621)	1.0		
YEAR II					
General Chemistry (30.501)	1.0	General Chemistry (30.601)	1.0	Elective	1.0
Gas and Oil Production and Transmission (47.501)	1.0	Gas and Oil Production and Transmission (47.601)	1.0		
YEAR III					
Elective	1.0	Elective	1.0	Elective	1.0
Elective	1.0	Elective	1.0		

List of Suggested Electives

33.508/608	General Physics	2.0
41.103/203	Basic Metallurgy	2.0
51.102/202	Engineering Surveying	2.5
48.901	Process Instruments I	1.0
48.902	Process Instruments II	1.0
31.503/603	Business and Technical Report Writing	2.0
31.505/605	Technical Writing	2.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Natural Gas and Petroleum Product Technology

The courses Distribution and Utilization Gas, Gas and Oil Production and Transmission, and Refining and Utilization Oil are offered to present and potential employees in the natural gas and petroleum industries. The student can expect to learn the general technology applicable to his field and to related areas of industry. He will work with instruments and equipment in the laboratory similar to that which might be experienced in employment.

The knowledge gained will be directly applicable for a fuller understanding of any present position and may allow transfer or promotion to other areas of specialty.

Each course consists of alternate weeks of lecture and laboratory with field trips arranged as feasible.

47.521/621 Distribution and Utilization—Gas

City gas stations; regulation 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.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

47.521 Term I (12 weeks) *Units:* 2.0
47.621 Term II (12 weeks)

47.531/631 Refining and Utilization—Oil

Crude oil, distillation, cracking, thermal and catylitic, reforming, hydrogenation; oil products, product testing, storage, loading, combustion stoichiometry; oil and gas engines, oil burners.

Monday and Wednesday: 6.45–9.45 p.m. *Begins:* Sept. 15

47.531 Term I (12 weeks) *Units:* 5.0
47.631 Term II (18 weeks)

47.501/601 Gas and Oil Production and Transmission

Petroleum geology, reservoirs, exploration, well-drilling, field production and treatment, conservation, gathering and transmission systems, pipe-line construction and maintenance, corrosion protection, compressor and pumping stations, flow computations, economics of design, measurements, laws, and regulations.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

47.501 Term I (12 weeks) *Units:* 2.0
47.601 Term II (12 weeks)

47.502/602 Introduction to Petroleum Product Utilization

This course is intended for persons involved in the sales and use of petroleum products. While all petroleum products will be covered, particular attention will be given to lubricants and power transmission by hydraulic fluids.

Course content—Petroleum hydrocarbons, crude oils, reservoirs and wells, refinery operations, production of lubricants, special properties and additives, internal-combustion engines, fuel and lubrication, design of gear power-transmissions and gear lubrication, design of hydraulic fluids, product tests and specifications, metallurgical aspects of wear and failure, preventive maintenance by lubricant analysis.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

47.502 Term I (12 weeks) *Units:* 2.0
47.602 Term II (12 weeks)

CERTIFICATES IN SURVEYING TECHNOLOGY

Surveying Technician Certificate

For students who have completed a first-level Certificate as above, further programmes of study leading to Senior Certificates, Advanced Certificates, and National Diplomas in Surveying Technology may be designed to meet the needs of the individual student.

SURVEYING TECHNOLOGY

Surveying Technician Certificate

The following is a suggested certificate programme attainable over three years.

Students, in consultation with a counsellor, may amend this programme to meet their personal career requirements.

The three-year period is also flexible. Fifteen units are required for this certificate.

September	Units	*January*	Units	Units
YEAR I				
Field Survey I (51.502)	1.0	Field Survey I (51.602)	1.5	
Survey Computations I (51.501)	1.0	Survey Computations I (51.601)	1.5	
YEAR II				
Applied Algebra II (32.901)	1.0	Application and Theory of Logarithms (32.902)	1.0	Application and Theory of Trigonometry (32.903) 1.0
Field Survey II (51.512)	1.0	Field Survey II (51.612)	1.5	
YEAR III				
Survey Computations II (51.511)	1.0	Survey Computations II (51.611)	1.5	
Elective	1.0	Elective	1.0	

List of Suggested Electives

33.508/608	General Physics	2.0
31.503/603	Business and Technical Report Writing	2.0
49.903	Draughting—Mechanical	1.0
14.901	Introduction to Data Processing	1.0
50.502/602	Geology	2.0
45.102	Forest and Range Botany	1.0
42.102	Hydrology	1.0
51.507/607	Survey Draughting	2.0
49.900	Draughting	1.0

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Surveying Technology

Purposes and Objectives for Survey Computations I, II, and III

Purpose—To train persons with little or no knowledge or experience in surveying computations. Survey computations would be of value to field personnel: instrument men, chainmen, rodmen, etc., at present employed within the surveying industry or taken together with Field Survey courses for those who wish to enter this field.

Objective—On completion of the three courses the student should have reached the standard required to write the computations examinations of the Corporation of B.C. Land Surveyors.

A student with satisfactory marks in these courses would be granted exemption from the computation courses of the day-school programme.

51.501/601 Survey Computations I

Use of logarithms and hand calculators; trigonometric functions; solution of right and oblique triangles; chainage corrections; traverse calculations; missing parts, adjustments of traverses; subdivision of areas; areas by D.M.D.s and co-ordinates; simple circular curves.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

51.501 Term I (12 weeks) *Units:* 2.5
51.601 Term II (18 weeks)

51.511/611 Survey Computations II

Use of electronic calculators and programmed computers; compound and reverse curves; vertical curves; spiral curves; terminal curves; volumes and quantities; subdivision of areas; adjustment of traverse and levelling nets; intersection; resection (three-point problem); eccentric observations (reduction to centre), height of towers, reduction to sea-level, curvature and refraction.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

51.511 Term I (12 weeks) *Units:* 2.5
51,611 Term II (18 weeks)

51.521/621 Survey Computations III

Shape of earth, spherical excess, Legrendre's theorem, method of additaments, convergence of meridians, geodetic co-ordinates, map projections, theory of errors and their adjustment (lease square adjustment), reliability of observations.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

51.521 Term I (12 weeks) *Units:* 2.5
51.621 Term II (18 weeks)

51.502/602 Field Survey I

Purpose—This course is offered to train persons in the field operations of survey work. It is basic surveying designed for persons who intend to make a living at surveying, or for those wishing to upgrade their ability at sur-

veying. This course should be taken in conjunction with Survey Computations I and leads into Field Survey II, III, and IV.

Outline—Fundamental definitions and concepts, fundamentals of field work, fundamentals of field notes, errors, linear measurements, errors in linear measurements, basic problem in chaining, use of compass in surveying, use of level and level rod (theory, field work), errors in levelling, reading transit angles, use of the transit, error in transit work; transit surveying—method of running traverses; stadia surveying—methods of locating detail, plane table, simple curves.

Saturday: 9–12 noon — *Begins:* Sept. 20

51.502 Term I (12 weeks) — *Units:* 2.5
51.602 Term II (18 weeks)

51.512/612 Field Survey II

Purpose—The course is designed for students who progress from Field Survey I or for students who have had similar filed experience in industry. The student should have knowledge of theodolite and level operations and chaining, i.e., the basic techniques which are taught in Field Survey I. It is also assumed that the student will have knowledge of survey computations similar to that acquired in Survey Computations I.

Outline—Horizontal and vertical control by triangulation and trigonometric levelling, computing and laying out circular curves and spirals, topography by self-reducing tachometers, highway surveying involving laying out centre line and vertical curves, cross-sections and slope stakes, precise levelling, electronic distance measurement, and instrument adjustments.

Saturday: 9–12 noon — *Begins:* Sept. 20

51.512 Term I (12 weeks) — *Units:* 2.5
51.612 Term II (18 weeks)

51.522/622 Field Survey III

Location of a transportation-line; preliminary considerations; reconnaissance; preliminary survey; projecting the location; the location survey; location of curves—simple, compound, reverse spiral; cross-sections; slope staking; construction; levelling under unusual conditions; field work for monthly estimates; field work for final payments; use of EDM equipment.

Saturday: 9–12 noon — *Begins:* Sept. 20

51.522 Term I (12 weeks) — *Units:* 2.5
51.622 Term II (18 weeks)

51.532/632 Field Survey IV

Standard surveys, geodetic control surveys, setting landmarks and monuments, surveys for evidence, procedure for resurvey of boundary-lines, resurveys of subdivided lands, restoration of lost corners, right-of-way surveys, limits of errors, subdivision surveys, surveys for photogrammetric control, use of aerial photographs in survey, errors.

Saturday: 9–12 noon — *Begins:* Sept. 20

51.532 Term I (12 weeks) — *Units:* 2.5
51.632 Term II (18 weeks)

51.102/202 Engineering Surveying

Purpose—This 30-week survey course has been designed to cover a wide range of field techniques and office procedures. The types of learning situations during the course are such that for both field and office work greater emphasis is placed on engineering and construction practices. These practices in general mean that, by adroit uses of methods and instruments, we can make maps, charts, profiles, measure land boundaries, and determine precise sizes, shapes, and locations. A further purpose is to lay out or mark the desired position and elevation of objects to be built or placed as directed by a completed plan.

Objective—On completion of the course the student can expect to be reasonably confident in the manipulation of a variety of survey instruments and the application of survey methods and skills as used in industry today.

Outline—We expect to have students with varying backgrounds of education and industrial experience and must, therefore, provide a good deal of course flexibility for the student to choose what he feels will be of greater interest and benefit to him personally. Prospective students do not need to feel that the following list of subjects and topics is going to be too difficult to cope with because they are short on formal schooling. Feed-back from former students indicate that in the main they have achieved the level of learning they needed or wanted. The course of studies is so arranged that most of the 30 weeks is spent out of doors learning field methods and the use of instruments by a series of field projects. A shorter length of time is spent in the classroom (usually during inclement weather) calculating and plotting a variety of exercises and information from the student's own field data.

The more important areas of learning will be as follows: Measurements of distances and determination of direction; use of transits, levels, chains, stadia (including tachometers); route survey and earth work, site surveys, construction surveys (layout and control), topographic surveys, introduction to photogrammetry; computations relating to traverses, triangulation and adjustments, areas and volumes, horizontal curves, grades and slopestaking; preparation of topographic plans, plan-profile plates and cross-section plotting. Interpretation of legal plans and survey note-keeping.

Saturday: 9–12 noon — *Begins:* Sept. 20

51.102 Term I (12 weeks) — *Units:* 2.5
51.202 Term II (18 weeks)

51.903 Field Course in Electronic Measuring

Objective—To enable persons involved in surveying to understand and operate E.D.M. machines.

Outline—Basic principles of electronic measuring-devices, field operation of tellurometer, field operation of geodimeter, field operation of gyrotheodolite, more recent electronic instruments, trouble-shooting.

Saturday: 9–12 noon — *Begins:* Sept. 20

Term I (12 weeks) — *Unit:* 1.0

51.504/604 Astronomy I

Purpose—This course is offered as an introductory course into astronomy as used by surveyors. This course should be of particular interest to persons sitting the professional land surveyor examinations.

Objective—Through the use of the BCIT planetarium facilities, students should gain a good grounding in star identification.

Outline—The course includes an introduction to practical astronomy, the celestial sphere, the astronomical triangle; universal time, mean solar time, sidereal time; the emphemeris 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.

Thursday: 6.45–9.45 p.m. — *Begins:* Sept. 18

51.504 Term I (12 weeks)
51.604 Term II (12 weeks) — *Units:* 2.0

51.505/605 Photogrammetry I

Objective—To introduce interested students to the mechanics of photogrammetry through a combination of theory and practical work. This course should be particularly of interest to persons sitting the professional land surveyor examinations.

Outline—Introduction to photogrammetry; photo interpretation, aerial photographs; cameras; flight-planning for vertical photography; determination of scale; mapping from aerial photographs; mosiacs, principle of stereovision; determination of heights from aerial photos; route reconnaissance; radial line-plotting; oblique photos, plotting instruments, stereoscopes, sketchmasters, Wild A8, B9. Photographic laboratory procedures.

Wednesday: 6.45–9.45 p.m. — *Begins:* Sept. 17

51.505 Term I (12 weeks)
51.605 Term II (18 weeks) — *Units:* 2.5

51.906 Plane and Spherical Trigonometry for Surveyors

Purpose—This course is offered as an introductory and a refresher course for anyone who has to do any surveying or astronomy calculations. The course should be of special interest to persons intending to write the preliminary examinations for B.C.L.S. articles or for persons wishing to continue into astronomy.

Outline—Trigonometric functions of acute angles; solution of triangles, use of calculating machines; logarithms, trigonometric functions of any angle; trigonometric formulas and identities; radian measure; inverse trigonometric equations; introduction to spherical trigonometry; solution of right spherical triangles; solution of oblique spherical triangles; applications of spherical trigonometry to the terrestrial sphere, celestial sphere, astronomical triangle.

Monday: 6.45–9.45 p.m. — *Begins:* Sept. 15

Term I (12 weeks) — *Unit:* 1.0

51.507/607 Surveying Draughting

Lettering, technical sketching; use of ink and various draughting materials. Preparation of preliminary plans, construction plans; subdivision plans; highway and other right-of-way plans in accordance to General Survey Instructions to British Columbia Land Surveyors.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

51.507 Term I (12 weeks) *Units:* 2.0
51.607 Term II (12 weeks)

51.908 Description of Deeds

Basic course in writing legal land descriptions for British Columbia. Aimed at helping those preparing for B.C.L.S. final examinations.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (12 weeks) *Unit:* 1.0

MATHEMATICS DEPARTMENT

Students who require counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Course in Mathematics Department

32.900 Applied Algebra I

A review of appropriate mathematical topics designed especially as a preparation for Applied Algebra II. The course is tailored to meet the individual needs of the students in the class.

Monday: 6.45–9.45 p.m. *or*
Tuesday: 6.45–9.45 p.m.
Term I (12 weeks)

Begins: Sept. 15 *or* Sept. 16

This course will be repeated in Term II, beginning January 12 and in Term III, beginning April 5.

32.901 Applied Algebra II

A course in the application and theory of algebraic equations and functions as used in engineering technologies. Such equations and functions will be considered from an analytical as well as a graphical point of view. The programme will include an introduction to right triangle trigonometry and analytic geometry.

Monday: 6.45–9.45 p.m. *or*
Tuesday: 6.45–9.45 p.m. *or*
Saturday: 9–12 noon
Term I (12 weeks)

Begins: Sept. 15 *or* Sept. 16 *or* Sept. 20
Unit: 1.0

This course will be repeated in Term II, beginning January 12 and in Term III, beginning April 5.

Prerequisite—32.900, recent Mathematics 12, or the permission of the instructor.

32.902 Application and Theory of Logarithms

A study of the theory and applications of common and natural logarithms. Emphasis is placed on the plotting of logarithmic and semi-logarithmic graphs and their interpretation and use. This course will include a consideration of the role of logarithms in the operation of "scientific" calculators as well as instruction in the techniques of using these machines.

Monday: 6.45–9.45 p.m. *or*
Tuesday: 6.45–9.45 p.m.
Term II (12 weeks)

Begins: Jan. 12 *or* Jan. 13
Unit: 1.0

This course will be repeated in Term III, beginning April 5.

Prerequisite—32.901.

32.903 Application and Theory of Trigonometry

A course for students in Engineering Technologies (except Surveying) in the application and theory of functions. The role of trigonometry in the solution of vector and triangle problems is emphasized. In addition, special consideration is given to the use of trigonometric identities in the solving of trigonometric equations.

Wednesday: 6.45–9.45 p.m. *or* *Thursday:* 6.45–9.45 p.m.
Begins: Jan. 14 *or* Jan. 15
Term II (12 weeks)
Unit: 1.0

This course will be repeated in Term III, beginning April 7.

Prerequisites—32.901.

32.505/605 Mathematics (Calculus I)

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, volumes, centroids, and moments of inertia.

Monday: 6.45–9.45 p.m. *or* *Saturday:* 9–12 noon
Begins: Sept. 15 Sept. 20
32.505 Term I (12 weeks)
32.605 Term II (12 weeks)
Units: 2.0

Please indicate a preference of time you wish.

The course will be repeated in Term II, held every Tuesday and Thursday evenings, beginning January 13, 1976.

The course will be repeated in Term III, held every Monday and Wednesday evenings, beginning April 5.

Prerequisite—32.502/602 Mathematics (Basic Technical) or equivalent.

32.506/606 Mathematics (Calculus II)

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.

Wednesday: 6.45–9.45 p.m.
Begins: Sept. 17
32.506 Term I (12 weeks)
32.606 Term II (12 weeks)
Units: 2.0

Prerequisite—32.505/605 or equivalent.

32.516/616 Mathematics (Calculus III)

A course in differential equations, with emphasis on technical applications throughout. First order differential equations; variables separable homogeneous, linear, and Bernouilli's. Second order differential equations with constant co-efficients; complementary functions and particular integrals. The D operator. Miscellaneous methods of solving differential equations.

Thursday: 6.45–9.45 p.m.
Begins: Sept. 18
32.516 Term I (12 weeks)
32.616 Term II (12 weeks)
Units: 2.0

Prerequisite—32.506/606 or equivalent.

32.507/607 Mathematics (Introduction to Statistics)

This course consists of two units of study presenting an introduction to statistical methods and their application to technological problems. Topics studied are organization and graphical representation of data; frequency distributions, measures of central tendency; the arithmetic mean, coding, the median, the mode, quartiles, deciles, percentiles; measures of variation, the mean deviation, the standard deviation, quartile deviation; standard scores; introduction to probability; the rules of addition and multiplication; mathematical expectation; theoretical distributions; the binomial distribution; the normal 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 t-distribution; confidence intervals, tests of hypotheses, types of hypotheses, types of error, significance; the chi-square distribution, goodness of fit; quality control, control chart, linear regression, method of least spares; correlations, the coefficient of correlation and its determination.

Wednesday: 6.45–9.45 p.m. — *Begins:* Sept. 17
32.507 Term I (12 weeks) — *Units:* 2.0
32.607 Term II (12 weeks)

This course requires a working knowledge of mathematics at the Grade XII level.

32.509/609 Mathematics (Introductory Numerical Methods and Computer Programming)

These units cover a course on introductory numerical methods, together with computer programming techniques. The topics included are 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; numerican integration trapezoidal and Simpson's rules; Taylor's series and the numerical solution of elementary differential equations. The emphasis is on the technical problem and computer programming methods are presented which allow the numerical solutions to be processed on the IBM 370 system.

Wednesday: 6.45–9.45 p.m. — *Begins:* Sept. 17
32.509 Term I (12 weeks) — *Units:* 2.0
32.609 Term II (12 weeks)

Prerequisite—32.506/606 or equivalent.

32.522/622 Mathematics (for Electrical and Electronic Technologies)

A course on the theory and application in the electrical and electronic fields of the following topics: Solution of systems of linear equations by the elimination method and by determinants; logarithmic and exponential functions and their use in transient and power problems; trigonometric functions, radian measure, sinusoidal waveforms, solution of right and oblique triangles, and vectors in a.c. circuits.

Thursday: 6.45–9.45 p.m. — *Begins:* Sept. 18
32.522 Term I (12 weeks) — *Units:* 2.0
32.622 Term II (12 weeks)

This course requires a working knowledge of mathematics at the Grade XII level.

32.524/624 Mathematics (for Electrical and Electronic Technologies)

A course on the theory and application in the electrical and electronic fields of the following topics: Brief review of the trigonometry offered in courses 32.522/622; further trigonometry involving trigonometric identities and equations; complex algebra, the rectangular and polar forms of the complex number, and their use in a.c. network calculations; introductory calculus dealing with differentiation and integration of basic algebraic functions.

Thursday: 6.45–9.45 p.m. *Begins:* Sept. 18

32.524 Term I (12 weeks) *Units:* 2.0
32.624 Term II (12 weeks)

Prerequisite—32.522/622 or equivalent.

32.526/626 Mathematics (for Electrical and Electronic Technologies)

A course in calculus and its application in the electrical and electronic fields, covering the following topics: 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; integrations, the indefinite and definite integrals involving algebraic functions; the differentiation and integration of trigonometric, exponential, and logarithmic functions.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

32.526 Term I (12 weeks) *Units:* 2.0
32.626 Term II (12 weeks)

Prerequisite: 32.524/624 or equivalent.

32.528/628 Mathematics (for Electrical and Electronic Technologies)

A course in further calculus and its application in the electrical and electronic fields, covering the following topics: Brief review of essential calculus items offered in courses 32.526/626; calculus of hyperbolic functions; special integration techniques; partial derivatives; first and second order differential equations.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

32.528 Term I (12 weeks) *Units:* 2.0
32.628 Term II (12 weeks)

Prerequisite—32.526/626 or equivalent.

32.530/630 Laplace Transform Methods for Electrical, Electronic, and Control Engineering

Development of 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 loop with d.c. inputs; R-L, R-C, and R-L-C; initial condition voltage generators; s-domain circuit diagram; analysis of circuits in the s-domain (a.c. and d.c.); review of determinants and Cramer's Rule; 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.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

32.530 Term I (12 weeks) *Units:* 2.0
32.630 Term II (12 weeks)

32.557/657 Statistical Quality Control With Industrial Applications

Applications of statistical methods to quality control of industrial product, especially through quality control charts. Selections from topics in experimental design, nonparametric statistics, and regression.

Tuesday: 6.45–9.45 p.m. *Begins:* Sept. 16

32.557 Term I (12 weeks) *Units:* 2.0
32.657 Term II (12 weeks)

32.958 Celestial Navigation

Approximation of measurements on geographic co-ordinate system; adjustment and use of sextant; celestial triangle with definitions of time and reference; noon positioning for latitude and longitude; Polaris and sun at any time; and position line-fixing by sun, moon, planets, and stars.

Approximately one-third of classes will be spent in field taking stellar observations.

Designed for yachtsmen and pilots of small aircraft.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

Term I (16 weeks) *Unit:* 1.0

This course will be repeated in Term II, beginning Monday, January 12.

PHYSICS DEPARTMENT

Students who desire counselling in this programme should read section 3 on "Counselling" on page 14 of this Calendar.

Courses in Physics Department

33.508/608 General Physics I

Objective—This course, along with 33.509/609, is designed to satisfy the background knowledge required in the various engineering and related technologies.

Outline—Course content includes kinematics, linear and rotational dynamics, status, properties of matter, heat, thermodynamics, and waves. Mathematical treatment requires only algebra and trigonometry.

Course presentation is arranged to fit into the Career Programmes Division Technology Certificate Programme schedules.

Text—A. Beisier, *Modern Technical Physics,* Second Edition, Addison-Wesley, 1973.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

33.508 Term I (12 weeks) *Units:* 2.0
33,608 Term II (12 weeks)

33.509/609 General Physics II

Objective—This course completes the sequence designed to satisfy the background knowledge required in the various engineering and related technologies.

Outline—Course content includes optics, basic electricity and magnetism, and atomic and nuclear phenomena.

Mathematical treatment requires algebra and trigonometry and possible some calculus.

Course presentation is arranged to fit into the Career Programmes Division Technology Certificate Programme schedules.

Text—A. Beisier, *Modern Physics,* Second Edition, Addison-Wesley, 1973.

Monday: 6.45–9.45 p.m. *Begins:* Sept. 15

33.509 Term I (12 weeks) *Units:* 2.0
33.609 Term II (12 weeks)

NOTE—Courses 33.508/608, 33,509/609 General Physics may be taken for credit in any of the following BCIT physics courses:

33.102/202 Physics for Biological Science Technology.
33.104/204 Physics for Building Technology.
33.107/207 Physics for Civil and Structural Technology.
22.A10/B10/C10 Physics for Medical Laboratory Technology.
33.111/211 Physics for Instrumentation Technology.
33.A12/B12/C12 Physics for Environmental Technology.
33.114/214 Physics for Chemical and Metallurgical Technology.
33.216 Physics for Mechanical Technology.
33.117/217 Physics for Operations Management Technology.
33.118/218 Physics for Forest Products Technology.

33.404 Mining Geophysics

This course is designed to cover the use of geophysics in mineral exploration from the following viewpoints: (*a*) The theory behind and the uses of each method. (*b*) Instrumentation and field procedures. (*c*) Interpretation.

The various topics covered are general survey planning; S.P., resistivity, and I.P. methods; magnetic and gravity methods; electromagnetic methods; radiometric methods; seismic methods; and down-hole methods.

Thursday: 6.45–9.45 p.m. *Begins:* Jan. 15

Term II (15 weeks, plus four three-hour Saturday field sessions) *Units:* 1.5

Prerequisite—First-year university physics and geology desirable but not essential.

CERTIFICATES IN HEALTH TECHNOLOGIES

BCHA Certificate in Health Care Management

Certificate in Health Care Management

HEALTH CARE CERTIFICATE PROGRAMME

This Programme is designed to build upon the BCHA Certificate Programme in Health Care Management, and the continuing education courses of the health care technologist's particular health-science specialty, or courses in administration. The certificate will be identified by adding to the title the technology suffix, e.g., Health Care Certificate in Nuclear Medicine, Health Care Certificate in Nursing Sciences, or, if the specialty is administration, Health Care Certificate in Administration.

A programme for a Health Care Certificate in Medical Radiography could be planned as follows:

	Units
A. BCHA Certificate in Health Care Management	8.0
B. (Some or all of the following)—	
Radiographic Technique for A.C.	1.5
Anatomy and Physiology for A.C.	1.5
Physics of Medical Radiography for A.C.	1.5
Image Recording for A.C.	1.0
Radiobiology and Protection for A.C.	1.0
*C. Electives from other BCIT programmes	(balance)
Total	15.0

* Recognition of advanced training through the professional societies can also be considered.

HEALTH CARE MANAGEMENT

BCHA Certificate Programme

This programme is offered in co-operation with the British Columbia Health Association (formerly B.C. Hospitals' Association).

Purpose—To develop and to improve the management skills of department heads, supervisors, head nurses, and assistant head nurses in hospitals and other health care facilities.

Objectives—

(*a*) to understand the concept of total health care;
(*b*) to apply basic managerial principles to the health care situations;
(*c*) to employ the decision-making process to the solution of supervisory problems.

Outline—The programme essentially consists of three parts, which may be taken in any sequence. The parts are:

	Units
Supervisory Methods	2.0
Fundamentals of Health Care Management	2.0
Courses from the following list of electives and (or) Optional Methods Study Project	4.0
Total	8.0

List of Suggested Electives*

Management Psychology I	1.0
Management Psychology II	1.0
Accounting I	1.0
Accounting II	1.5
Accounting for the Manager	1.0
Public Relations	1.0
Organizational Behaviour	1.0
Personnel Management	1.0
Labour Relations I and II	2.0
Counselling I and II	2.0
Work Study I and II	2.5
Aptitude Testing	1.0
Project Planning and Scheduling	1.0
Introduction to Data Processing	1.0

* Recognition of training from other institutions or professional associations may be considered.

	Units
Mathematics (Introduction to Statistics)	2.0
Systems Analysis	2.5
Business and Technical Report Writing	2.0

NOTE—Some professional associations recognize the BCHA Certificate Programme in Health Care Management for advancement to higher qualification, for example, the Canadian Society of Radiological Technicians has accredited this programme for part of the requirements for Registered Technician (R.T.) to achieve Advanced Certificate (A.C.) status.

76.501/601 Fundamentals of Health Care Management

Purpose—To introduce the student to the fundamental principles of supervision and management.

Objectives—The educational objectives of this course are (*a*) to develop a knowledge and understanding of hospital organization; (*b*) to understand the basic principles of cost control and budgeting; (*c*) to develop a knowledge of the process of employee selection; (*d*) to perform an employee evaluation; (*e*) to know the development of labour relations in the health care environment; (*f*) to understand the basic principles of union practices and the collective bargaining process.

Outline—This course will use a variety of instructional techniques such as lectures, buzz groups, group discussion, case studies, and projects under supervision. The subjects examined will be total health care environment, labour relations, financial management, basic management principles, and total hospital organization.

76:501 Term I (12 weeks)	*Begins:* Sept. 16
76.601 Term II (12 weeks)	*Units:* 2.0

76.502/602 Supervisory Methods

Purpose—To introduce the student to the fundamental principles of staffing and problem-solving.

Objectives—The educational objectives of this course are (*a*) to develop an understanding of some of the basic principles of human behaviour; (*b*) to understand and apply the principles of leadership and motivation; (*c*) to apply the principles of methods study in the discovery of better ways of performing assigned tasks.

Outline—This course will use a variety of instructional techniques such as lectures, buzz groups, group discussion, case studies, and projects under supervision. The subjects examined are communications, leadership, groups, motivation, authority, and methods study.

76.502 Term I (12 weeks)	*Begins:* Sept. 17
76.602 Term II (12 weeks)	*Units:* 2.0

76.903 Optional Methods Study Project

Purpose—To allow the student to solve a problem in his or her own department under the guidance of a preceptor.

Objective—The student will apply the principles of methods study to reach, if possible, the solution of a relevant problem.

Outline—Ideally, this project will be carried out upon completion of the Supervisory Methods Course to enable the student to apply newly learned skills to the solution of the problem.

Courses in Medical Laboratory Sciences

70.X01 Advanced Hæmatology

Purpose—Prepares Registered Technologists to write the Advanced Registered Technologist examinations. Credits will be granted for this course by the CSLT.

Objective—To acquaint the student with some of the new and advanced theories in hæmatology.

Outline—This is a correspondence course. The subjects examined will be hæm synthesis, globin synthesis, thalassemia, normal red cell production and destruction, B_{12} and folic acid synthesis, megaloblastic anæmias, glucose metabolism of the red cell, hæmolytic anæmias, red cell overproduction and underproduction.

The course is designed in conjunction with BCSMT.

Courses in Radiological Sciences

72.901 Tutorial for CSRT Registration Examination

Purpose—This is a refresher course to help students prepare for CSRT Registration examinations.

Outline—A concise review of radiological physics, radiographic techniques, anatomy and physiology, and radiobiology and protection.

72.902 Medical Radiography Continuing Education Lecture Series

The lecture series will be conducted by the British Columbia Division of the Canadian Society of Radiological Technicians, with assistance from the Department of Health and the British Columbia Institute of Technology.

This one-week course is designed for graduate radiographers. It will cover advances in many aspects of radiographic technique.

72.903 Radiography and Physics for Radiologists

This two-week course will be presented to physicians studying radiology.

It will introduce the fundamentals involved in the production of radiographs, the physics of radiology, X-ray apparatus, image recording, and radiological safety.

72.904 Anatomy and Physiology—Preparatory Course for Advanced Certification of Radiological Technicians

This course is designed in conjunction with the B.C. Division of the Canadian Society of Radiological Technicians. It prepares the Registered Technician to write the Advanced Certification examinations.

72.905 Image Recording—Preparatory Course for Advanced Certification of Radiological Technicians

Designed in conjunction with the B.C. Division of the CSRT, this advanced-level course covers all aspects of the recording of radiographic images. It includes photographic, TV, and VT recording, and the equipment and processes associated with each.

This course will not be offered as a lecture series in 1975/76, but it may be offered as a directed reading course. Interested applicants should contact the Course Co-ordinator at 434-5722 (local 649 or 659).

72.906 Radiographic Technique—Preparatory Course for Advanced Certification of Radiological Technicians

This course is designed in conjunction with the B.C. Division of the CSRT to prepare Registered Technicians to write the Advanced Certification examination.

72.907 Radiobiology and Protection—Preparatory Course for Advanced Certification of Radiological Technicians

Designed in conjunction with the B.C. Division of the CSRT, this course is offered in the form of directed reading, to prepare Registered Technicians to write the Advanced Certification examination.

Applicants should apply to Sonia L. Williams, Health Programmes Industry Services, BCIT, for application forms.

72.909 Physics of Medical Radiography—Preparatory Course for Advanced Certification of Radiological Technicians

The purpose of this course, designed in conjunction with the B.C. Division of the CSRT, is to prepare Registered Technicians to write the Advanced Certification examination.

Courses in Nuclear Medicine Sciences

74.901 Radiopharmaceuticals in Nuclear Medicine—Preparatory Course for Advanced Certification of Nuclear Medicine Technologists

This course is designed to provide the graduate Nuclear Medicine Technologist with continuing education in radiopharmaceuticals and postgraduate instruction in preparation for Advanced Certificate.

Other courses in Nuclear Medicine, in preparation for A.C., are being planned for 1975/76. Direct all inquiries to the Course Co-ordinators (locals 649 and 659).

Courses in Patient Care Services

Continuing education courses and programmes for nurses are offered periodically; information may be obtained, or special applications submitted, by writing to

The Co-ordinator, Industry Services (Health Programmes),
B.C. Institute of Technology,
3700 Willingdon Avenue,
Burnaby, B.C. V5G 3H2.

or by telephoning 434-5722 (local 659).

Courses currently being conducted are:

76.801 Refresher Course for Graduate Nurses—to assist inactive nurses to return to the work force.

76.802 Basic Psychiatric Nursing for graduate nurses trained in other countries—to prepare for registration with the R.N.A.B.C.

76.803 Basic Obstetrical Nursing for graduate nurses trained in other countries—to prepare for registration with the R.N.A.B.C.

76.805 Operating Room Nursing at the beginning level—to train registered nurses for staff duties in hospital operating-room.

76.808 Maternity Nursing at the post-basic (beginning level) —to train registered nurses for labour and delivery care of maternal and newborn patients.

Other continuing education programmes in Health Technology will be designed and offered as the need arises. Individuals and professional associations who are interested in discussing and presenting new courses should contact the course co-ordinators at 434-5722 (locals 649 and 659).

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A BCIT day school student representative.

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A. W. MORROW, Programme Consultant, Career Programmes, BCIT.

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L. S. MCGILL, Associate Co-ordinator, Business, Career Programmes Division, B.C. Institute of Technology, 3700 Willingdon Avenue, Burnaby.

A. W. MORROW, Programme Consultant, Career Programmes Division, B.C. Institute of Technology, 3700 Willingdon Avenue, Burnaby.

PROGRAMMES OF INTEREST TO CAREER PROGRAMMES STUDENTS

SOCIETY OF ENGINEERING TECHNOLOGISTS

The British Columbia Institute of Technology is offering courses to prepare students to meet the qualifying examinations of the Society of Engineer Technologists of British Columbia.

Courses have not been offered to prepare students for every examination, but, if there is sufficient demand, the Institute will make every effort to offer any course so listed. The Society generally will accept credit granted in a corresponding credit course at the Institute in lieu of an examination set by the Society.

Any person interested in the Society of Engineering Technologists should immediately contact The Registrar, Society of Engineering Technologists, 2991 West 41st Avenue, Vancouver, B.C. V6N 3C8.

Generally, graduation on any of the British Columbia Secondary School programmes will be prerequisite to subjects listed for an engineering technician; but it should be noted that Mathematics 12 and Physics 12, on the new programme, are considered as preferred prerequisites.

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.

The Association does not offer courses to prepare candidates for these examinations. Students are required to prepare for examinations before having made application and before having attained a specific ruling from the Council of the Association regarding their own cases.

Some courses offered at the British Columbia Institute of Technology provide one method of assisting students preparing for these examinations. However, the student should note that the courses offered by the British Columbia Institute of Technology were not designed specifically for this purpose. The student should seek advice from counsellors at BCIT and from the Association of Professional Engineers to ensure that the course content will generally coincide with the syllabus of examinations for the Association of Professional Engineers. Course outlines are included so that cross reference with BCIT courses is possible.

INQUIRIES:

The Association of Professional Engineers of British Columbia,
2210 West 12th Avenue, Vancouver, B.C. V6K 2N6.
Telephone: 736-9808.

ASSOCIATION OF BRITISH COLUMBIA PROFESSIONAL FORESTERS

Arrangements exist whereby students may prepare themselves as Professional Foresters in part through courses at BCIT. Interested students are advised to contact the

Association of British Columbia Professional Foresters,
Suite 407, 837 West Hastings Street,
Vancouver, B.C. V6C 1B6.

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 have just been amended and approved by the Lieutenant-Governor in Council.

Procedures by which candidates may become Registered Professional Foresters are described in the Association's booklet entitled *The Profession of Forestry in British Columbia,* revised January 1975.

Some of the requirements for registration include appropriate academic qualifications, a minimum of two years or four years of acceptable forestry experience in the opinion of the Board of Examiners and, depending on educational standards attained, Canadian citizenship, and references from at least three Registered Professional Foresters.

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 the implications of policies affecting uses of forest land.

To date, the Association's policy has 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.

THE CANADIAN INSTITUTE OF QUANTITY SURVEYORS

The CIQS has an academic programme comprising 16 separate subjects. Graduates from the full-time day school Building Technology Course at BCIT receive credit for 10 of the 16 subjects. The remaining six can be offered from time to time at night on a tutorial basis through the Career Programmes Division of BCIT.

Candidates for the CIQS professional examinations can make arrangements to attend BCIT day school to take any of the 10 subjects for which credit may be granted by the CIQS. Before signing up for any subjects at BCIT, candidates should obtain approval of prospective credit from

The Chairman, Education Committee,
Canadian Institute of Quantity Surveyors,
Suite 401, 8 Colborne Street,
Toronto, Ont. M5E 1E1.

THE ARCHITECTURAL INSTITUTE OF BRITISH COLUMBIA

The Architectural Institute of British Columbia has an apprenticeship system generally referred to as the Minimum Syllabus Programme. This programme lists some 22 examinations or submissions for completion, and day school graduates receive credit for 12 of these when entering the programme.

As a result, other Minimum Syllabus students may claim credit for any of the same 12 subjects, and take them through Career Programmes in either day school or night school classes.

Before signing up for any subjects, students should obtain approval of prospective credit from

Chairman, Examining Board,
Architectural Institute of British Columbia,
970 Richards Street,
Vancouver, B.C. V6B 3C1.

THE CERTIFIED GENERAL ACCOUNTANTS' ASSOCIATION OF BRITISH COLUMBIA

The Certified General Accountants' Association of British Columbia offers a programme of studies leading to the professional designation, "Certified General Accountant" (C.G.A.).

The Association will recognize for credit toward completion of the C.G.A. programme day courses at BCIT which have a content substantially similar to courses in the C.G.A. programme. Students must obtain a grade of 65 per cent or better before exemption will be granted.

The following courses have been accepted for transfer credit:

C.G.A. Course	BCIT Course
101	Accounting 16.140 and 16.240.
221	Accounting 16.347 and 16.447.
202	Business Mathematics 22.116.
203	Business Statistics 22.216.
311	Cost Accounting 16.341 and 16.441.
304	Economics 10.135 and 10.235.
315	Data Processing 14.050, 14.052, and 14.053.
516	Finance 16.361 and 16.461.

Students who wish to present courses other than those listed above should consult the Association. Applicants for registration must meet all requirements of the Association in order to be accepted into the C.G.A. programme.

For further information, please contact

The Certified General Accountants' Association of British Columbia,
Suite 306, 1200 West Pender Street,
Vancouver, B.C. V6E 2T5.
Telephone: 687-7631.

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 given by the British Columbia Institute of Technology, as noted below, as meeting the course requirements as indicated, provided a student meets the other prerequisites and requirements and is acceptable to the Institute of Chartered Accountants.

Students who are interested in the Institute of Chartered Accountants of British Columbia should contact the Registrar, 530 Burrard Street, Vancouver, B.C.

C.A. Course	BCIT Day	BCIT Career Programmes
Financial Accounting (to Int. Level)	16.140/240	16.900/901+
	16.347/447+	16.504/604
Economics	10.135+	10.135+
	10.235	10.235
Computers in Business	14.050+	14.901+
	14.052	14.922
Statistics	22.216	22.535+
		22.635
Business Application of Mathematics	14.409 or	
	22.300 or	22.963
	22.314	
Management and Cost Accounting	16.341+	16.902+
	16.441	16.903
Financial Management	16.361+	16.507+
	16.461	16.607
Commercial Law	16.360+	10.360+
	14.460	10.460
Organizational Behaviour	10.380	10.906
Policy and Administration	10.434	

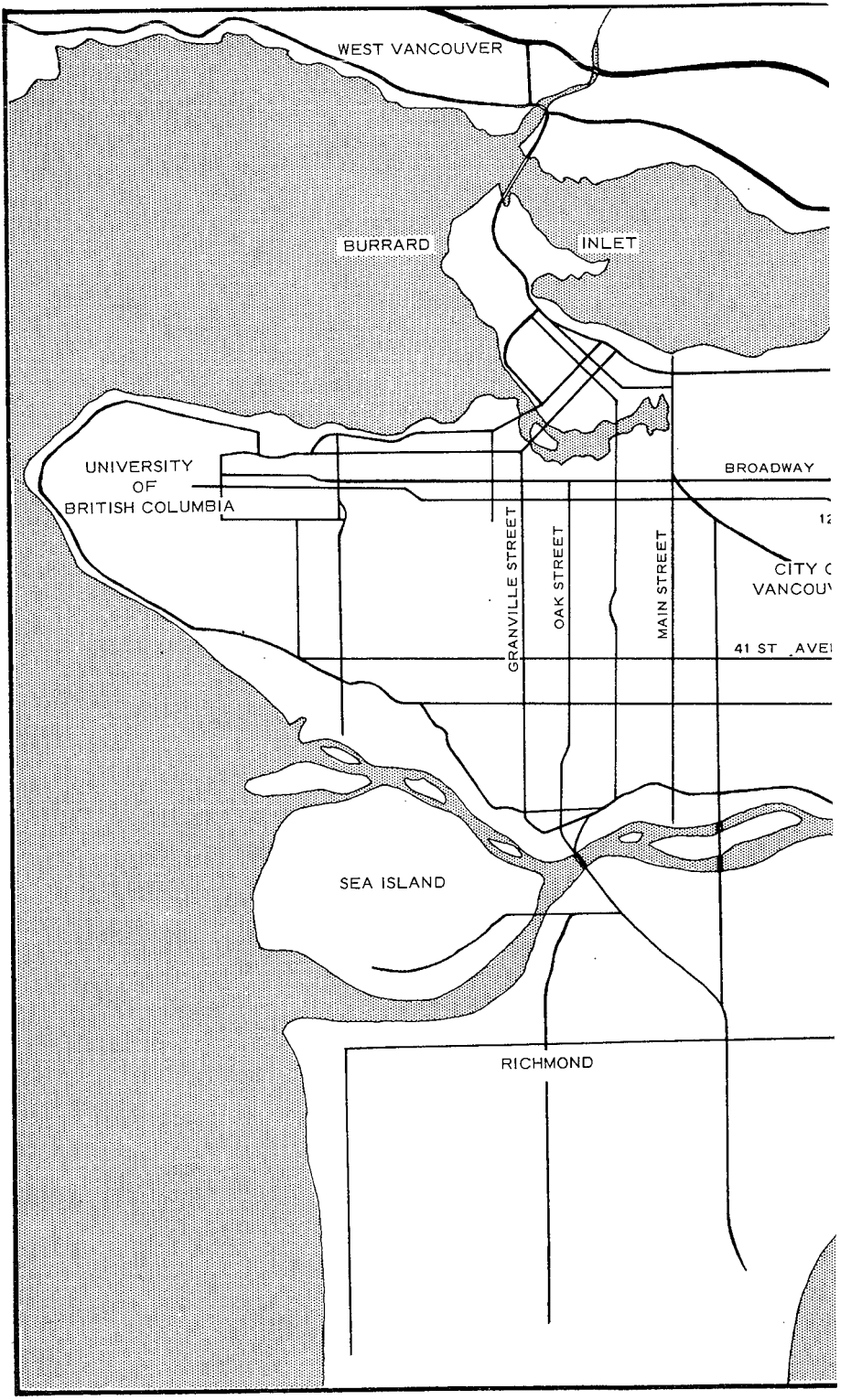
THE SOCIETY OF INDUSTRIAL ACCOUNTANTS OF BRITISH COLUMBIA

The Society of Industrial Accountants of British Columbia has advised the British Columbia Institute of Technology that it will accept certain courses given by the British Columbia Institute of Technology, noted below, as meeting the course requirements as indicated, provided a student meets the other prerequisites and requirements and is acceptable to the Society of Industrial Accountants.

Students who are interested in the R.I.A. program should contact that Association for full particulars at 687-5891.

BCIT/R.I.A. Course Exemptions

R.I.A. Course	BCIT Day	BCIT Career Programmes
Data Processing	14.050/052/053 *or* 14.160/170/260/270	14.901/922/923 14.902/901/903/905
Principles of Accounting	16.140/240	16.900/901 *or* 16.905L, 16.906S
Economics	10.135/235 *or* 10.137/237 *or* 10.138/238 *or* 10.139/239	10.135/235
Report Writing	31.102/202	31.504/604 *or* 31.503/603 *or* 31.505/605
Accounting Theory	16.347/447	16.504/604
Commercial Law	10.360/460	10.360/460
Organizational Behaviour	10.221/321 *or* 20.381, 10.321 *or* 20.483, 10.321	10.221/321
Taxation	no exemption	no exemption
Cost Accounting	16.341/441	16.902/903
Management Accounting	no exemption	no exemption
Finance	16.361/461	16.507/607
Selected Topics	no exemption	no exemption
Operational Auditing	no exemption	no exemption
Information Systems	Graduation in Systems Option	no exemption
Management	no exemption	no exemption
Business Mathematics	22.110 *or* 22.114 *or* 22.116 *or* 22.118 *or* 22.120 *or* 22.100	22.936
Quantitative Methods I	22.200 *or* 22.210 *or* 22.214 *or* 22.216 *or* 22.218 *or* 22.220	22.535/635
Quantitative Methods II	22.300, 22.400 *or* 14.306/409	22.535/536, 22.963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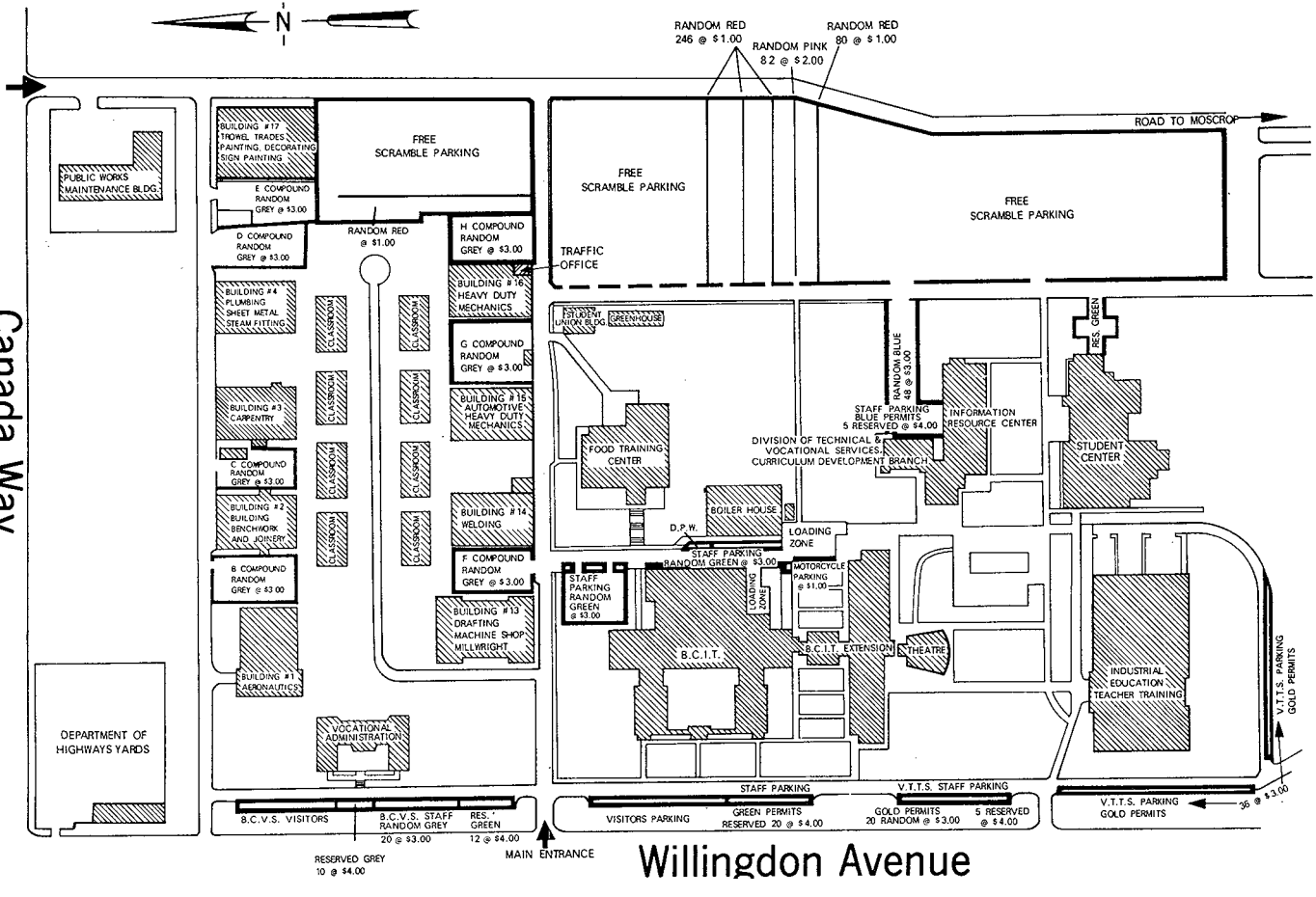
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G COMPOUND
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C COMPOUND
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GREY @ $3.00
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GREEN
@ $3.00
LOADING
ZONE
MOTORCYCLE
PARKING
@ $1.00
B.C.I.T.
B.C.I.T. EXTENSION
THEATRE
INDUSTRIAL
EDUCATION
TEACHER TRAINING
V.T.T.S. PARKING
GOLD PERMITS
STAFF PARKING
VISITORS PARKING
GREEN PERMITS
RESERVED 20 @ $4.00
V.T.T.S. STAFF PARKING
GOLD PERMITS
20 RANDOM @ $3.00
5 RESERVED
@ $4.00
V.T.T.S. PARKING
GOLD PERMITS
36 @ $3.00
Willingdon Avenue

CERTIFICATE OF TECHNOLOGY

APPLICATION FORM

Mr.
Miss
Mrs.
Ms. _____
(Initial(s)) (Surname)

Social Insurance No. _____ Age _____
Home
address _____ Phone _____

City _____ Zone _____

I wish to apply for a Certificate of Technology in _____

- ☐ *Certificate.*
- ☐ *Senior Certificate.*
- ☐ *Diploma of Technology.*

Name of firm _____

Address _____ Phone _____

City _____ Zone _____

Your department _____

Your position _____

Highest high school grade completed _____

Please check which of the following you have attended:

☐ *Vocational School* ☐ *Other (specify)* _____

☐ *College* _____

☐ *Institute of Technology* _____

☐ *University* _____

For _____ years.

Name of programme _____

I graduated ☐ Yes ☐ No.

IMPORTANT
This form is continued overleaf.

Courses completed toward this certificate:

List Courses	Units	Year Completed	Grade	Institutions*

* If not BCIT, this application must be accompanied by some evidence of credit—documents, diplomas, etc.

At least half of the work toward each certificate must be completed at BCIT.

A student applying for Senior Certificate or Diploma of Technology must have completed a certificate through the Career Programmes Division or provide evidence of an equivalent level of related work done through another institution.

Date_____ APPROVED_____

Department Head

*(Signed)*_____

Co-ordinator, Career Programmes

Printed by K. M. MacDonald, Printer to the Queen's Most Excellent Majesty
in right of the Province of British Columbia.
1975

APPLICANTS SHOULD NOTE THE FOLLOWING:

1) Register early. Watch for registration deadlines.
2) Course fees must accompany this application form. Applications not accompanied by fee payment will not be processed.
3) Mailing this application and payment of fees does not insure a seat in the class.
4) If you are not able to be registered in the class of your choice, your money will be refunded.
5) Programme planning assistance is available throughout the year.

REGISTRATION FORM FOR CAREER PROGRAMMES COURSES

PLEASE SUBMIT TO:

Career Programmes
British Columbia Institute of Technology
3700 Willingdon Avenue,
Burnaby, British Columbia
V5H 3H2

BCIT

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY
3700 WILLINGDON AVENUE, BURNABY, BRITISH COLUMBIA, CANADA
V5G 3H2 Area Code 604-434-5722

REGISTRATION FOR CAREER PROGRAMMES COURSES

Social Insurance

Application Date Day Month Year

Title: **Mr.**, **Miss**, **Mrs.**, **Ms.**,
(CIRCLE)

Date of Birth Day Month Year

Surname

First Name Initials Home Phone Number

Home Address

Postal Code

Yes No

Full-time B.C.I.T. Day School Student?

B.C.I.T. Staff Member?

If working towards a B.C.I.T. Certificate, state name of Certificate Programme

Name of Employer

Business Address

Postal Code

Department

Business Phone Number Local

Position

No. of years experience in this field of work

If previously B.C.I.T. Student, check whether Day School Evening &/or Extension (Career Programmes)

Country where attended Secondary School

Date of final year at Secondary School

Last Grade completed

Type of Post-Secondary Institution	Name of Institution	No. of years attended	Graduated Yes No
Vocational			
College			
Institute of Technology			
University			
Other			

Reason for taking courses listed below:

- Related to current work
- Preparation for advancement with current 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 Proposed Course	Course No.	Day of Week	Cost	FOR OFFICE USE ONLY

APPLICANTS SHOULD NOTE THE FOLLOWING:

1) Register early. Watch for registration deadlines.

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3) Mailing this application and payment of fees does not insure a seat in the class.

4) If you are not able to be registered in the class of your choice, your money will be refunded.

5) Programme planning assistance is available throughout the year.

REGISTRATION FORM
FOR
CAREER PROGRAMMES
COURSES

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Career Programmes
British Columbia Institute of Technology
3700 Willingdon Avenue,
Burnaby, British Columbia
V5H 3H2

BCIT

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REGISTRATION FOR CAREER PROGRAMMES COURSES

Social Insurance

Application Date Day Month Year

Title: **Mr.**, **Miss**, **Mrs.**, **Ms.**,
(CIRCLE)

Surname

Date of Birth Day Month Year

First Name

Initials

Home Phone Number

Home Address

Postal Code

Full-time B.C.I.T. Day School Student? Yes No

B.C.I.T. Staff Member?

If working towards a B.C.I.T. Certificate, state name of Certificate Programme

Name of Employer

Business Address

Postal Code

Department

Business Phone Number

Local

Position

No. of years experience in this field of work

If previously B.C.I.T. Student, check whether Day School ☐ Evening &/or Extension (Career Programmes) ☐

Country where attended Secondary School

Date of final year at Secondary School

Last Grade completed

Type of Post-Secondary Institution	Name of Institution	No. of years attended	Graduated Yes	Graduated No
Vocational			☐	☐
College			☐	☐
Institute of Technology			☐	☐
University			☐	☐
Other			☐	☐

Reason for taking courses listed below:

- Related to current work ☐
- Preparation for advancement with current 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 Proposed Course	Course No.	Day of Week	Cost	FOR OFFICE USE ONLY