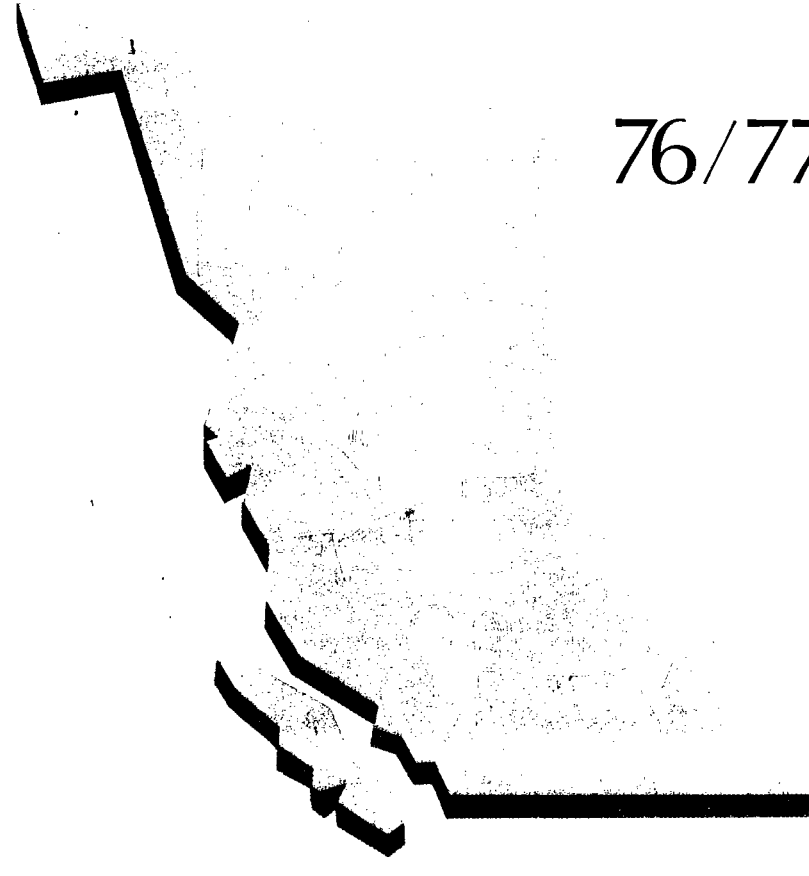
BCIT

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY



76/77

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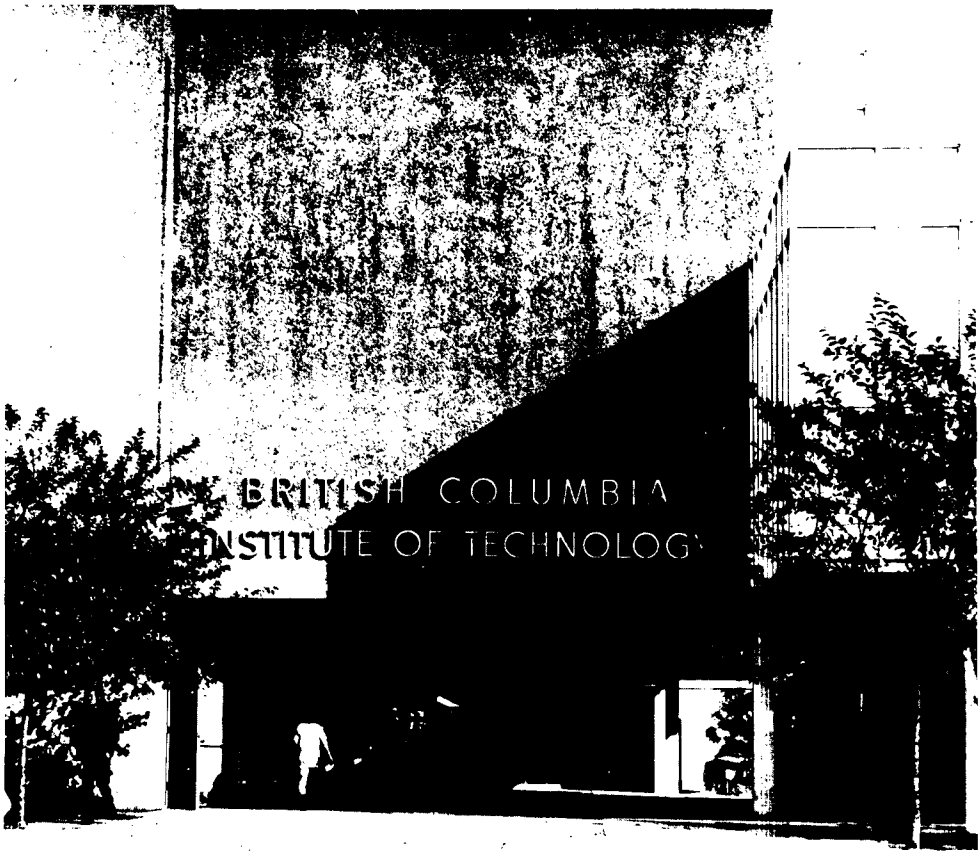
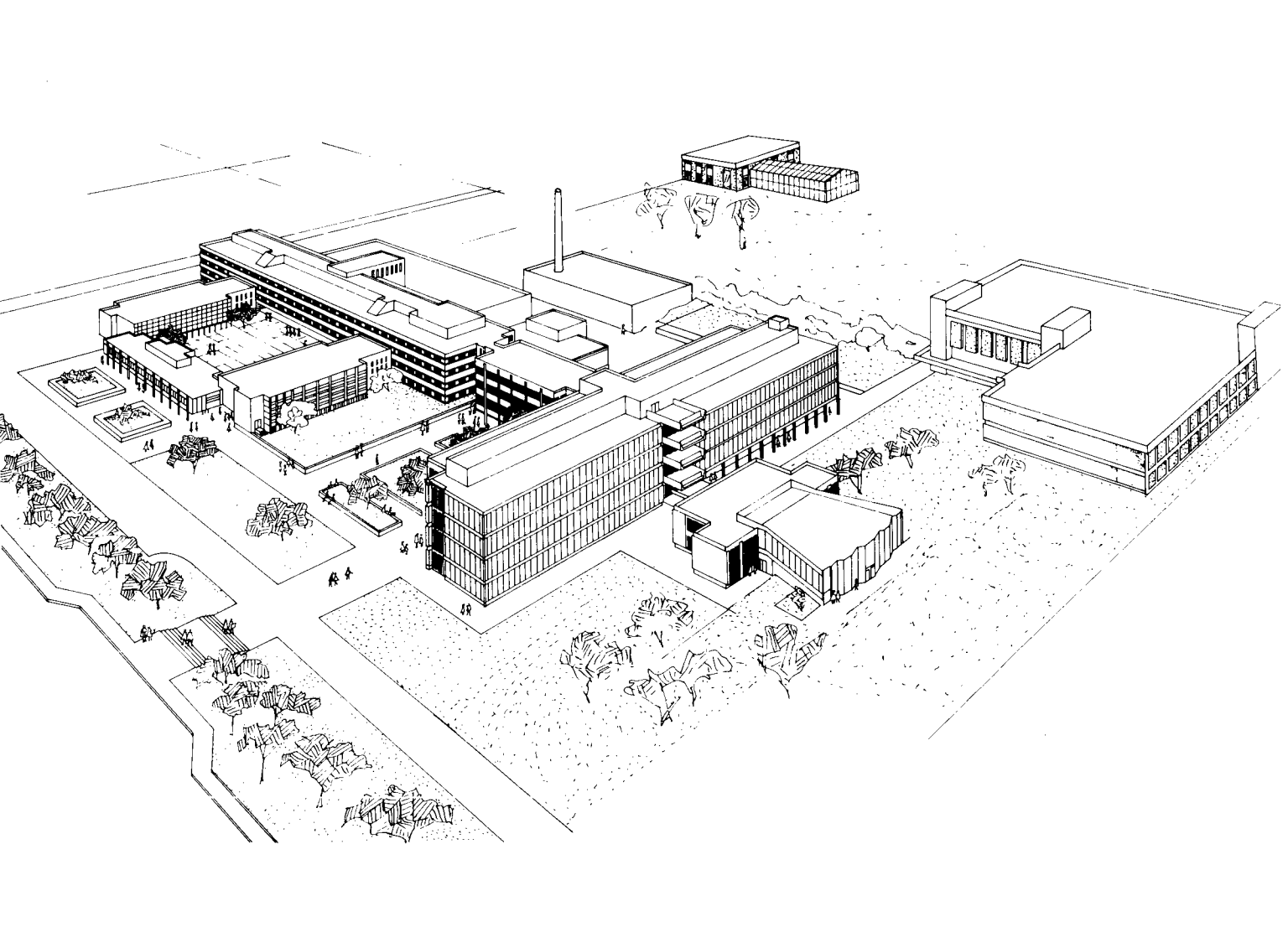
Burnaby, B.C. V5G 3H2
Telephone: (604) 434-5722

(Effective May 1, 1976: (604) 434-5734)

Sponsored jointly by the Government of the Province of British Columbia and the Government of Canada.


BRITISH COLUMBIA
INSTITUTE OF TECHNOLOGY



NORTH VANCOUVER
HASTINGS ST.
PORT MOODY
SIMON FRASER UNIVERSITY
BRENTWOOD
THROUGHWAY
AVENUE
GRANDVIEW HWY.
LOUGHEED HWY.
COQUITLAM
BOUNDARY ROAD
WILLINGDON AVE.
TRANS CANADA HWY.
BURNABY
KINGSWAY
NEW WESTMINSTER
MARINE DRIVE
WILLINGDON AVENUE
BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY
STUDENT PARKING
LIBRARY
PLAYING FIELD

HON. PATRICK L. MCGEER, *Minister of Education*

DR. WALTER HARDWICK, *Deputy Minister of Education*

J. R. FLEMING, *Associate Deputy Minister, Finance and Administration*

J. PHILLIPSON, *Associate Deputy Minister, Schools*

A. E. SOLES, *Associate Deputy Minister, Post-Secondary*

Board of Governors

BCIT BOARD OF GOVERNORS

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Managing Director, Association of
Professional Engineers of B.C.

J. LANGAN
Vancouver Typographical Union.

R. MCMEEKIN, B.SC. (CHEM. ENG.)
Administrative Assistant to Vice-President,
Cominco Ltd.

W. A. NEILL
Manager, Manpower Resources,
Canadian Pacific Air.

B. J. RAE, M.B.A.
President, Office Assistance.

R. SAWKA
Student Association Representative.

P. H. STIRLING, B.SC., PH.D., F.C.I.C.,
P.ENG., S.M.I.E.E.E., S.M.I.S.A., A.I.M.,
M.C.A.P.
Templeton Secondary School.

G. SUART, B.SC., HON. B.SC., M.B.A.
Vice-President Administration
Simon Fraser University.

H. B. WEYDERT
Business Representative, International Association
of Machinists and Aero Space Workers.

Introduction

The British Columbia Institute of Technology, an institution for advanced technical education, is the first of its kind in British Columbia. Opened in 1964 under its first principal, E. C. Roper, it has already trained a large number of students who have established a fine reputation for the school by their work in industry as technicians or technologists.

The Institute offers a broad range of two-year technical programs, each leading to a group of employment opportunities in the major industries of the Province. These programs are a judicious blend of English, mathematics, the sciences, and very practical work related to the field of employment chosen by the student.

Many young graduates come directly from high school and are assisted to find their first jobs in industry. Others who have been out of school in industry for some time take advantage of these programs to find new and more satisfying careers. It is becoming increasingly difficult for the individual to prepare himself/herself for a career in our modern industrial society, and the Institute provides opportunities for training which open doors to suitable careers as technicians and technologists in the labour force.

The programs of the Institute are designed to serve the industries of the region as well as the individual student. These programs are established with the particular needs of the industries of the Province in mind. It is the aim of the Institute to produce graduates who, with additional experience, will fill many of the supervisory positions in business and industry.

BCIT, therefore, helps the individual to prepare himself/herself for a more producitve and rewarding future and at the same time helps the industry of the region by supplying well-trained employees. By helping both individual and industry to improve their productivity, the whole community is helped and the standard of living of all its members is improved.

G. A. THOM
Principal, British Columbia Institute of Technology

Table of Contents

ADMINISTRATION

G. A. THOM, B.COM., M.B.A., M.ED. - *Principal.*
K. M. MILNE - - - - - - *Administrative Assistant.*

PERSONNEL, INFORMATION SERVICES AND STUDENT SERVICES

J. DALE MICHAELS, B.A. (HONS.), B.SC., M.B.A. - - - - - *Executive Director.*
D. DICKSON MELVILLE - - - - *Director of Information Services.*
R. VENHUIZEN, B.COM. - - - *Personnel Manager.*
J. HOLDEN - - - - - *Assistant to the Executive Director.*

Student Services Department

G. N. LLOYD, B.SC. - - - - *Co-ordinator/Student Services.*
G. FANE - - - - - - *Student Liaison Officer.*
W. ROWAN - - - - - - *Athletic Manager.*
J. MITCHELL - - - - - *Assistant/Athletic Department.*
V. KARPINSKY, B.A. (HONS.) - - *Housing Adviser.*

Counselling Department

A. S. MCLEAN, B.A., B.S.W., M.S.W. - *Co-ordinator of Counselling.*
S. R. GIBBS, B.A., P.T.T. - - - *Counsellor.*
MISS M. A. GRAY, B.A. - - - *Counsellor.*
JENNIFER CLEMMONS, B.ED. - - - *Counsellor/Financial Awards.*
NORMA HAWKES, B.A., M.ED., D.ED. - *Community Liaison Counsellor.*
YVONNE KIRK - - - - - - *Assistant/Financial Awards and School Visitations.*
JACK SAY-YEE, B.A., B.S.W., M.S.W. - *Counsellor.*

Health Services

B. E. COPPING, B.SC., M.SC., M.D. - *Physician, Health Services.*
E. C. FENNER, P.H.N. - - - - *Nurse, Health Services.*

TECHNOLOGICAL EDUCATION

E. W. H. BROWN, B.A. - - - - *Acting Executive Director.*
R. A. CRADOCK, B.COM., M.B.A., R.I.A. *Acting Director, Business Division.*
D. K. BANNERMAN, B.A.SC., S.M., P.ENG. *Director, Engineering Division.*
S. T. RICHARDS - - - - - - *Director, Health Division.*
D. A. HUME, B.ED. - - - - - *Director, Industry Services.*
D. J. SVETIC, B.A.SC., P.ENG. - - *Director, Career Programmes.*

ADMINISTRATION

J. CLIFF MCADAM, B.A.SC., M.B.A., P.ENG. - - - - - - - *Executive Director.*

Registrar

J. T. FIELD, B.COM. - - - - *Registrar.*
P. GRAW - - - - - - - *Associate Registrar.*

Purchasing Department

W. M. HEPPLE - - - - - *Purchasing Manager.*
G. HUNT - - - - - - *Buyer.*
B. FRIER - - - - - - *Supervisor/Central Stores.*

Computer Centre

C. N. MACKEOWN, B.A.SC., P.ENG. - *Manager/Computer Centre.*
N. MCLAGAN - - - - - *Supervisor/Administrative Systems and Programming.*
R. SPROULE - - - - - - *Supervisor/Computer Operations.*

Stenographic Services

E. MCLEOD - - - - - - *Supervisor.*

Bookstore

J. ROBINSON - - - - - *Bookstore Manager.*

Campus Food Services Department

E. A. SCHMUTZ - - - - - *Manager/Campus Food Services.*
A. SIM, DIPL. TECH. - - - - *Assistant Manager.*

Physical Resources Division

R. C. W. SMYTH, C.ENG., M.I.MECH.E., DIPL. AD.ED., P.ENG. - - - *Director.*
J. MACKEAN, C.ENG., M.I.MAR.E. - - *Manager, Physical Plant.*
N. S. CHADWICK - - - - - *Safety and Security Administrator.*
R. HIGO, DIPL.TECH. - - - - *Planning Technologist.*
E. J. BECK, DIPL.TECH. - - - *Timetabling.*
T. G. BROWN - - - - - *Timetabling.*

BURSAR

D. M. MACPHERSON, C.A. - - - *Bursar.*
A. MARSH, C.G.A. - - - - *Assistant to the Bursar.*
D. I. JONES - - - - - - *Office Manager.*

CANADA MANPOWER CENTRE

R. D. FORBES-ROBERTS - - - *Branch Manager, Canada Manpower Centre on Campus.*
D. KING - - - - - - - *Counsellor, Canada Manpower Centre.*
W. JOE - - - - - - - *Assistant.*

INFORMATION RESOURCE CENTRE AND MEDIA SUPPORT SERVICES

Library

Jos. E. Carver, C.D., B.A., B.L.S.	*Director.*
G. Weeks, B.A., M.L.S.	*Assistant Librarian.*
Mrs. M. L. Allingham, B.A., B.L.S.	*Reference Librarian.*

Audio Visual Services

F. J. Knor, Tech.Dip., B.Ed., B.L.S.	*Audio-Visual Co-ordinator.*
C. Saunders, Tech.Dips.	*Supervisor, Classroom Services.*
J. Borseth	*Supervisor, Technical Services.*
R. Young	*Graphic Services.*

CAREER PROGRAMMES DIVISION

D. J. Svetic, B.A.Sc., P.Eng.	*Director, Career Programmes Division.*
L. S. McGill	*Associate Director, Business Programs.*
J. A. Willcox, B.A.Sc., P.Eng.	*Associate Director, Engineering Programs.*
A. W. Morrow, B.A., B.Ed., M.Ed.	*Program Consultant.*
D. A. Glen, B.A.	*Associate Program Consultant.*

INDUSTRY SERVICES DIVISION

D. A. Hume, B.Ed.	*Director, Industry Services.*
B. D. Yeoell, C.Eng., M.I.C.E.	*Associate Director, Industry Services.*
G. Jansen, Dipl.T.	*Supervisor, Stenographic Services*
W. D. Robertson, B.Ed.	*Co-ordinator, Directed Study.*
R. C. Morris, B.A., D.H.A.	*Co-ordinator, Health Program.*
M. K. Dwyer	*Co-ordinator (Consulting).*
D. H. MacLaurin, B.Sc.F., R.P.F.	*Co-ordinator (Development).*
E. A. Morse, B.E., P.Eng.	*Co-ordinator (Delivery).*
R. Ballam, J. P.	*Co-ordinator (Courts).*
S. Williams, B.A.(Hons.). M.Ed., F.S.R.	*Instructor Co-ordinator.*
J. Deering	*Instructor Co-ordinator.*
W. R. Stuart, B.A.	*Instructor Co-ordinator.*
W. Clark	*Instructor Co-ordinator.*
A. Nichols, B.A.Sc.	*Instructor.*
B. Lindsay	*Instructor.*
S. Berry, B.Sc.	*Instructor.*
J. McCollom	*Instructor.*
H. F. Clark	*Instructor.*
A. Hives	*Instructor.*
J. R. Tupman, R.N.	*Instructor.*
B. Scheffer, B.S.N.	*Instructor.*
F. E. MacLaren	*Instructor.*
S. Kerry, R.N., B.S.N.	*Instructor.*

M. BARNETSON, R.G.N. - - - - *Instructor.*
M. WINTER - - - - - - *Instructor.*
G. WALTON, A.A.S. - - - - *Instructor.*
V. MCKENZIE, R.N., S.C.M. - - - *Instructor.*
W. M. SHARPE, B.A.(HONS.) - - - *Writer.*
K. WRIGHT - - - - - - *Writer.*
B. L. YEOLL - - - - - - *Writer.*
R. MACGREGOR - - - - - *Writer.*
D. KNOX, B.SC. - - - - - *Writer.*

Core Departments

Departments

CHEMISTRY

C. BARNETSON, B.SC., *Department Head.*

N. ABDURAHMAN, B.SC., M.SC., PH.D.
G. C. ANDERSON, A.I.S.T.(U.K.).
D. W. CONDER, B.SC., M.SC.
M. LESLIE KAN, B.SC., M.SC., P.DT.
T. J. MEPHAM, A.R.I.C., M.SC.
C. J. C. NICHOL, B.A., M.SC., PH.D.
E. E. TANG, B.SC.
L. V. TOLANI, B.SC.
P. W. VAN AMEYDE, H.L.S.(NETH.), IR.N.I.R.I.A.

ENGLISH

D. HELGESEN, B.A., M.B.A., *Department Head*

H. ARTHUR, B.A. (HONS.), M.A.
D. BEATTIE, B.ED., M.A.
K. BRAMBELBY, B.A.(HONS.), *Senior Instructor.*
P. J. BURNS, B.A., M.A.
R. CLARKE, B.PHM., M.A.
WM. RIDER COOEY, B.A.(HONS.).
J. COOPERMAN, B.A.
P. CORLEY-SMITH, B.A.(HONS.), M.F.A.
G. DOUGLAS, B.ED.
T. EASTON, B.A., M.A.
O. D. ERICKSON, B.A.(HONS.)
D. J. HORAN, B.JOURN., B.A.(HONS.).
V. JOHNSTON, B.A., B.ED.
W. KEAN, B.A., M.A.
R. KNOTT, B.A.(HONS.), M.ED.
D. S. MCNEAL, B.A., M.A., PH.D., *Senior Instructor.*
M. OTTE, B.A.(HONS.), M.A.
G. M. RAMSAY, B.A., *Senior Instructor.*
J. SEGAL, B.A.(HONS.), M.A.
R. SPENCE, B.COMM., B.A.
E. STRONACH, B.A., B.ED., M.A.
K. TAKAGAKI, B.A. (HONS.).
P. H. THOMAS, B.A., B.ED., M.A.
D. VALE, B.A., B.ED., M.ED., *Chief Instructor.*
L. A. WALKER, B.SC., PH.D.
A. WILLSON, B.A., M.A.

MATHEMATICS

W. S. SIMS, B.SC., *Department Head.*

J. W. BROWN, B.SC.(HONS.), M.A., *Senior Instructor.*
A. K. CHU, B.A.SC., P.ENG.
C. A. COPPING, B.SC.
M. DEKKER, B.SC.(HONS.), H.T.S.
P. M. HOBBINS, B.SC..
C. C. LAWRENCE, B.SC.(HONS.)
R. D. LYNN, B.SC.(HONS.), A.F.I.M.A.
E. R. MARTIN, B.SC., M.ED., *Senior Instructor.*
A. P. PARIS, B.A.SC., M.A.SC., P.ENG.
R. A. STERNE, B.A.SC., P.ENG., *Senior Instructor.*
E. L. TOTH, B.SC.
B. L. TURNER, B.SC.
H. E. WALKER, B.A.
J. H. WARDROPER, B.SC.(ENG.), M.SC., M.I.C.E., P.ENG.

PHYSICS

F. READER, B.A.SC., P.ENG., *Department Head.*

M. BERRETTA, B.SC., M.SC.
C. BITSAKIS, B.SC.
R. J. ENGLUND, B.SC.
MRS. G. M. GRIFFITHS, B.A.SC., M.A.
D. E. A. KENYON, B.SC., *Senior Instructor.*
A. KSHATRIYA, B.SC., M.SC.
W. MALAKOFF, B.SC., B.ED., M.SC., *Senior Instructor.*
W. V. OLSON, B.SC., *Senior Instructor.*
J. R. SAUNDERS, B.SC.(HONS.), M.SC.
D. E. THOM, B.SC.
C. VAN DEURSEN, B.SC., M.SC., PH.D.
K. A. YAKEL, B.SC.(HONS.), M.SC.

Part-time Instructional Staff, 1976/77

MRS. J. B. WARREN, B.A., M.A. - - - - - - - *Physics*

Purposes and Objectives of Advisory Committees

SUBJECT: 1.03 ADVISORY COMMITTEES

An Advisory Committee is comprised of appropriate representation from industry, business, and the professions. It will contain as well at least one representative of Faculty, an Alumni, and a student representative. The Director of the Division, the Executive Director of Technological Education, the Department Head, and if appropriate, the Chief Instructor(s), and a representative from each of Career Programs and Industry Services are ex officio members. Since a primary purpose of the Advisory Committee is to interpret the employment needs of the market, it is vital that the Advisory Committee members represent the constituency served. Wherever possible, individuals from industry, Government departments, associations, unions, co-ops, consumer and professional associations will be invited to sit as members of Advisory Committees in areas where their resource input would be of value to the Institute. The Advisory Committee is active within departments, programs, and (or) options and advises on specific needs in the individual training programs.

1.03.01 PURPOSES AND OBJECTIVES OF ADVISORY COMMITTEES

The purposes and objectives of an Advisory Committee are:

(1) To provide advisory assistance to Department Heads and Directors in the establishment of programs, options, subject content, and learning experiences:

(2) To provide advisory assistance concerning space, resources, services, and facilities required for programs:

(3) To assist in the establishment of five-year estimates of career opportunities available for graduates:

(4) To assist in increasing career opportunities for graduates of BCIT. To assist in obtaining feedback on the performance of graduates:

(5) To assist in the development of a reasonable level of bursary and scholarship support:

(6) To interpret the Institute's role and accomplishments to friends and associates in the community.

Calendar of Events

1976

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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Calendar of Events, Academic Year 1976/77

For students on four-term (two-year) cycle (all Business and Engineering Technology students except Electrical and Electronics).

TERMS I AND III

July 26/76	Deadline for payment of first-term fees for first-year Forestry and Fish, Wildlife, and Recreation students.
August 9	Deadline for payment of first-term fees for all students except second-year Hotel, Motel, and Food Service Management students.
August 27	Deadline for payment of first-term fees for second-year Hotel, Motel, and Food Service Management students.
August 30	Registration and commencement of classes for first-year Forestry and Fish, Wildlife, and Recreation students.
September 6	Labour Day.
September 7	Orientation Day.
September 8	Commencement of classes.
September 22	Shinerama.
September 27	Orientation Day for second-year Hotel, Motel, and Food Service Management students.
October 11	Thanksgiving Day.
November 11	Remembrance Day.
December 6 to 10	Terms I and III examinations.

TERMS II AND IV

January 3/77	Commencement of classes.
January 7	Deadline for payment of second-term fees.
March 7 to 11	Student spring break.
April 8	Good Friday.
April 11	Easter Monday.
April 29	Term ends for first-year Forestry and Fish, Wildlife, and Recreation students and second-year Fish, Wildlife, and Recreation students.
May 16 to 20	Terms II and IV examinations.
May 23	Victoria Day.
June 10	Convocation Exercises.

For students on six-quarter (two-year) programs (Health Division and Electrical and Electronics Technology).

Quarters A and E

August 9/76	Deadline for payment of quarter fees.
September 6	Labour Day.
September 7*	Orientation Day.
September 8	Commencement of classes.
September 13	Orientation (first-year Medical Radiography students).
September 22	Shinerama.

October 11 - - Thanksgiving Day.
November 11 - - Remembrance Day.
November 26 - - Quarters A and E terminate.

Quarters B and F

December 6 - - Commencement of classes.
December 10 - - Deadline for payment of quarter fees.
December 18 - - Christmas vacation commences.
January 3/77 - - Classes recommence.
March 4 - - - Quarters B and F terminate.
February 14/77* - Deadline for payment of quarter fees.
March 14/77* - - Orientation (Quarters A and E). Second intake of Registered Nursing and Registered Psychiatric Nursing students.

Quarters C and G

March 14/77 - - Commencement of classes.
March 18 - - Deadline for payment of quarter fees.
April 8 - - - Good Friday.
April 11 - - - Easter Monday.
May 23 - - - Victoria Day.
May 27 - - - Quarters C and G terminate.
June 10 - - - Convocation Exercises.

Quarters D and H (Registered Nursing and Registered Psychiatric Nursing Students Only)

June 6/77 - - Commencement of classes.
June 10 - - - Deadline for payment of quarter fees.
July 1 - - - Dominion Day.
August 1 - - B.C. Day.
August 31 - - Quarter terminates (completion of programs).

Quarter H (Nuclear Medicine Students Only)

June 6/77 - - Commencement of Clinical Training.
August 31 - - Clinical Training terminates.

NOTE—Nuclear Medicine students are on a seven-quarter (two-year) program.

* NOTE—Registered Nursing and Registered Psychiatric Nursing have two intakes of students. These students are on eight-quarter (two-year) programs and the respective intakes commence classes September 1976 and March 1977.

THE INSTITUTE PROGRAM

The objective of the Institute program is to provide graduate technologists equipped to meet the needs of industry. Changes in the courses are made only after careful consideration and on the advice of members of the Advisory Committee, employers of graduates, and representatives of various professional organizations.

In the first year, subjects have been selected to give students the fundamental principles common to all branches of the technology in which they enrol.

In both years basic principles and their applications are stressed in the lecture room, and these principles are tested and verified in the laboratories. The laboratory work is organized into groups of experiments. These experiments have been developed to permit students to test ideas formulated in the lecture room, to acquire familiarity with testing and designing techniques, and to develop dexterity in handling experimental equipment. The effectiveness of this approach is reflected in the increased number of students seeking admission to the various programs and in the demand on the part of industry for services of the graduates of institutes of technology.

I. ENROLMENT

A. Admissions Policy

BCIT was built to serve the residents of British Columbia. In the selection of applicants, Canadian citizens who are British Columbia residents and landed immigrants who have resided in B.C. at least one year, have a first priority, out-of-Province Canadian citizens and landed immigrants have a second priority, and out-of-country candidates are selected only when there is a lack of applications for the first two priorities. Because of limited enrolment in the Health Technologies and the larger number of applications received each year from Canadian citizens in British Columbia, out-of-country applicants (on a student visa) are not considered for acceptance into these programs.

B. Conditions of Admission

1. *Academic requirement*—Graduation from a senior secondary school on the Selected or Combined Studies Program, as prescribed by the British Columbia Department of Education, or equivalent, with satisfactory grades. Please refer to page 81 for the special prerequisites which are listed for the various technologies. All candidates are requested to submit academic credentials for evaluation.

2. English is the language of instruction at BCIT. Those students whose primary language is not English will be required to

write a test to determine that their knowledge of English is sufficient to permit successful pursuit of their studies at BCIT. The English Department at BCIT will evaluate the results of the following tests in English comprehension:

(*a*) TOEFL—Out-of-country applicants will be required to write this test *before* their application will be processed.

The dates for world-wide testing are:

February 23, 1976.

May 17, 1976.

To obtain a bulletin of information that outlines world-wide test locations and application procedures, applicants are advised to direct their inquiries to:

Test of English as a Foreign Language, Box 889, Princeton, New Jersey 08540, U.S.A.

The required score for passing the test is 550.

(*b*) Vancouver City College English Language Assessment Test—Applicants within Canada whose primary language is not English will be required to take this test *before* their application will be processed.

The appropriate papers for this testing service will be forwarded to applicants from the office of the Registrar. A minimum score of 115 out of 150 is required.

3. All prospective students must be at least 16 years of age. However, there is no upper age limit.

4. Those persons whose education has been interrupted, where formal admission requirements may be lacking and who can provide evidence of probable success in the technology of their choice, may be admitted as mature students. They must, however, have the special prerequisites which are listed under each program. Applications of this nature are reviewed on an individual basis by the Board of Admissions.

5. (*a*) Those persons who have successfully completed one or more years of study at a level equal to, or higher than, that of a BCIT course may apply for direct entry into second year of the program, providing course content is similar and if, in the opinion of the Board of Admissions, the applicant's academic record justifies advanced standing.

(*b*) BCIT offers transfer programs for various technologies with recognized regional colleges within British Columbia. Further information may be obtained by directing your inquiry to the Office of the Registrar.

C. ADMISSION PROCEDURE

1. Programs at BCIT are on both the term and quarterly system:

Term—Business and Engineering Divisions.

Quarterly—Health Division and Electrical and Electronics Technology.

Those students returning to complete requirements toward a Diploma of Technology are readmitted in both December and January each year (Term system). Quarterly system varies throughout the year.

2. For each current school-year, with classes commencing in September, application forms may be obtained in January from the Office of the Registrar and, on completion, these should be returned as early as possible. Applications for both the Registered Nursing and the Registered Psychiatric Nursing Programs are accepted for review by the Board of Admissions during the following periods:

September class—January 2 to May 31.

March class—August 1 to December 30.

The following documents must accompany the completed application form:

(*a*) A senior secondary school transcript of marks and, if applicable, post-secondary school statement(s) of marks indicating credits and grades achieved, or;

(*b*) An interim statement of marks from the principal of a senior secondary school indicating that the applicant is expected to obtain the required academic standing on completion of Grade XII on the Selected or Combined Studies Program. *This interim statement of marks must be substantiated by a final senior secondary school transcript of marks when it becomes available.*

NOTE—Whether or not a person is accepted for admission, academic documents will not be returned.

Those students on a recognized transfer program are required to submit a transcript of marks from the regional college from which they are transferring into second year at BCIT. Final acceptance is determined on satisfactory grades and a recommendation from the regional college. The latter is submitted by the college to the Registrar.

(*c*) Evidence of Landed Immigrant Status or Student Visa.

(*d*) A medical questionnaire is to be completed and returned to the Health Services Clinic, where medical records are maintained for each student. Prior to commencement of

classes, some departments within the Health Division require their students to present evidence of having had a recent chest X-ray and also of having completed an immunization program. If, due to extenuating circumstances, supporting documentation is not available at that time, students will be required to complete the necessary procedures at the Health Services Clinic at BCIT.

3. Certain programs at BCIT are very well known and very popular. Applications for admission to these technologies by far exceed the number of seats available. As selection of candidates to fill these seats is highly competitive, it is advisable to submit applications as early as possible for review by the Board of Admissions.

4. Final acceptance for admission to BCIT, or non-acceptance, is based on the decision of the Board of Admissions. The Board reserves the right to accept only those applicants who appear to have the capabilities necessary for success in the program.

5. In the event of non-acceptance, or an accepted applicant who is unable to attend until the following year, it is required that this person reapply in January. The new application will be reviewed again with those applications received for the new school-year. It will not be necessary to resubmit documents, as the original submission will remain on file. In effect, *acceptance for a program is not transferrable from year to year; applications are considered for the current school-year only.*

6. *Course credit*—Students requesting consideration of credit being granted for individual subjects (either taken previously at BCIT or comparable to subjects in the selected program), should make application through the Secretary to the Registrar as soon as possible following notification of acceptance for admission.

Last date for application for course credit is the second Wednesday after the term or quarter commences.

D. Student Counselling Services

Counselling Services are available to students, prospective students, and parents. This service will assist students with academic, personal, and financial concerns.

The offices are open from 8 a.m. to 5.30 p.m., Monday to Thursday, and 8 a.m. to 4.30 p.m. on Friday. Appointments may be made personally or by telephoning 434-5722, effective May 1, 1976, 434-5734 (local 327). In addition to the Counsellors, the Department Heads and instructional staff are also available to assist students.

II—FEES

A. Annual Fees for 1976/77 Academic Year*

1. *Term system*[1]

General tuition	$300
Student activity	30
Caution deposit[1]	20
Total	$350

2. *Quarterly system*

General tuition	$300
Student activity	30
Caution deposit[1]	20
Total	$350

3. *One term only*

General tuition	$150
Student activity	15
Caution deposit[1]	20
Total	$185

4. *One quarter only*

General tuition	$100
Student activity	10
Caution deposit[1]	20
Total	$130

* Fees are presently under review, and are subject to change by action of the B.C. Institute of Technology Board of Governors.

[1] To cover any breakage at BCIT. Any unused portion is refundable at academic year-end.

B. Day-school Tuition Fee Policy

(*a*) When an applicant is accepted for admission, a commitment fee of $50 is due and payable. This fee will be applied toward the tuition fee for the first term or quarter of studies.

(*b*) All accepted applicants whose commitment fee has not been paid within a 30-day grace period following the date of their acceptance will forfeit the seat reserved for them.

(*c*) All applicants accepted less than 45 days prior to the start of classes must immediately pay their full first term or first quarter fees. (This amount includes the commitment fee.)

(*d*) All other accepted applicants must pay the remainder of their full first term or first quarter fees prior to one month from the start of classes.

(*e*) Students returning for the second year of their day-school program must pay their full first term or first quarter fees 30 days before the start of classes.

(*f*) In extreme circumstances, an accepted applicant may apply in writing to the Bursar's Office to defer some portion of his/her fees.

(*g*) All cheques and money orders should be made payable to the "British Columbia Institute of Technology" or "BCIT." A charge of $10 will be levied for costs of handling cheques returned for nonsufficient funds or other reasons.

(*h*) A student who is allowed to defer payment of some fees ((*f*) above) and does not pay on time will be excluded from classes and a reinstatement fee of $10 will be added to the fees outstanding. He/she may rejoin classes when the total outstanding is paid.

(*i*) Students returning for their second term or second, third, or fourth quarter must pay their term or quarter fees during the first week of that term/quarter.

(*j*) A student who has not paid his/her fees as outlined above will have their registration automatically cancelled and will be excluded from classes.

C. Refunds of Fees for Students Who Withdraw

(*a*) Up to 14 days after the commencement of classes:

General tuition—complete refund, less $50 commitment fee.

Student activity—complete refund.

Caution deposit—complete refund.

(*b*) From the day following the last day specified in (*a*) above until the end of term quarter:

General tuition—no refund.

Student activity—no refund.

Caution deposit—balance of account.

Students are required to withdraw officially from BCIT by reporting to the Counselling office.

Students who are requested to withdraw from a course for reasons of discipline or unsatisfactory progress may forfeit any right to a refund under this section.

D. Miscellaneous Fees

1. Re-read of examination mark(s) (per subject) ... $5.00
2. Transcript of marks (per copy) ... 1.00
3. Duplicate diploma ... 3.00

(A duplicate diploma will be issued only when evidence of loss of original diploma has been provided.)

Application for above items should be made through the Registrar's office.

E. Additional Expenditures

1. *Textbooks, instruments, and supplies* — The cost of textbooks, instruments, and supplies varies according to the program, from approximately $100 to $175. The Institute bookstore carries a complete line of draughting and writing supplies. Students are advised not to make any purchases until they have received a book list showing the required texts. Some technologies require an additional cost of approximately $150–$250 for a pocket calculator.

2. *Field trips*—Students are advised that, in some technologies, periodic field trips are a part of the program. These expenses are the responsibility of the student. Accommodation and food costs vary from $25 to $100.

3. *Medical insurance*—Students may obtain medical insurance by arrangement with the British Columbia Medical Plan. By Order in Council of the Provincial Government, all private companies have been prohibited by an Act of the Provincial Legislature from paying for physicians' and surgeons' services effective July 1, 1968. Students are advised to confirm that they are covered under their parents' British Columbia Medical Plan; should this not be the case, students are advised to make their own arrangements with the British Columbia Medical Plan. Pamphlets outlining the details are available from the Registrar's Office. Out-of-country applicants who have been accepted for admission to a course will receive an application form and instructions for medical coverage while attending BCIT.

4. *Accident insurance*—All students who are enrolled at BCIT are insured under the terms of an accident policy underwritten by Seaboard Life Insurance Company. Coverage is on a 24-hour-per-day basis throughout the year for the term/quarter students are enrolled. Detailed information may be obtained from the office of the Registrar.

III. FINANCIAL ASSISTANCE

A. British Columbia Student Financial Assistance Program

The following describes the basic elements of the program as they existed in the 1975/76 educational year, subject to revisions for the 1976/77 year the program is as follows: Students studying in British Columbia should procure and submit their applications to the post-secondary institution at which they are enrolled.

I. Program

A comprehensive program of assistance for post-secondary students has been introduced by the Department of Education to ensure that British Columbia residents are not denied the opportunity to reach their educational objectives due to financial barriers.

The purpose of the British Columbia Assistance Program is to assist students whose resources are insufficient to provide for the cost of full-time studies at the post-secondary level of education. Funds under the program are therefore granted only where the financial resources available to students from parents, summer work, or other sources are insufficient to meet their estimated educational costs.

The funds awarded under this program will normally be disbursed through a combination of funds drawn from the Provincial Grant Fund and the Federal Canada Student Loan Plan. A detailed booklet describing the program in full should be available at your institution's financial awards office.

II. Eligibility

Funds will be provided to eligible students undertaking a minimum of 60 per cent of a full program of study leading to a certificate, diploma, or first degree. The amount of assistance awarded will be based on assessed need as determined by the Provincial Authority.

III. Canada Student Loan

Students should note the "Summary of Obligations" on the reverse side of the loan certificate prior to negotiating the loan.

Interest of your loan is paid by the Federal Government as long as you are registered as a full-time student and for six months thereafter. You should discuss the interest rates with your lending institution (bank, credit union, etc.) since rates vary from year to year.

Students who have received Canada Student Loans, but who do not negotiate one for their immediate period of study, should submit a Schedule II to their lending institution in order to retain interest free status. A copy of this form may be obtained from your lending institution.

B. British Columbia Institute of Technology Scholarship and Bursary Fund

The British Columbia Institute of Technology Scholarship and Bursary Fund has been established through private means, whereby awards are made annually to deserving students of the Institute. Private contributions from commerce and industry and other interested persons are being received and may or may not be designated for use in encouraging study in a particular course of study given by the Institute. Such contributions will be deductible for income tax purposes. Pages 41 to 63 contain the details of the contributions. Inquiries concerning financial aid should be directed to the Counselling Department.

C. Health Division Bursaries

At present the Department of Health of the Provincial Government through the auspices of the B.C. Hospital Insurance Services is allocating bursaries of $150 per month to all students in the following Health Technologies:

Biomedical Electronics.
Health Data.
Medical Laboratory.
Medical Radiography.
Nuclear Medicine.
Psychiatric Nursing.
Registered Nursing.

D. Provincial Mental Health Bursaries

In addition to the above, Provincial Mental Health Branch will make bursaries available to students in Psychiatric Nursing under the following conditions:

(*a*) $100 a month with the provision that the recipient, after graduation, will be committed to a month-for-month basis of service within the mental health field in the Province.

(*b*) Selected Registered Nurses may be considered for direct entry into the second year of the Psychiatric Nursing Program. Enrolled students under this special program will be eligible for both the B.C. Hospital Insurance bursary and the Mental Branch bursary.

IV. PLACEMENT SERVICE

The Student Placement Centre, staffed by Canada Manpower personnel, is available to all students of the Institute.

This office provides a counselling and employment service, and arranges seminars and interviews with national and local employers of the technologist.

To assist the student in further development of his/her career plan, a current library of information on companies, opportunities, and general career information is maintained in the Centre.

V. ACADEMIC AWARDS

A. Diplomas

Graduates of the British Columbia Institute of Technology will be awarded a nationally recognized diploma of technology. An honours diploma will be awarded to those students who obtain a first-class honours standing (80 per cent average or better) in each of Terms 3 and 4.

B. The British Columbia Institute of Technology Honour Awards

The Academic Award will be presented to the top academic student in his/her graduating year.

The Citizenship Award will be presented to the graduating student who shows reasonable academic standing, a reputation for mature personal relations with both staff and students, and a record of active participation in student activities.

The Principal's Award will be presented to a student for outstanding personal contribution to BCIT.

C. Convocation Exercises

Convocation exercises take place as announced in the yearly academic calendar, and nationally recognized diplomas of technology are presented at these exercises.

VI. THE CURRICULUM

A. Program of Studies

Formal examinations are written at the conclusion of each term/quarter. A statement of marks is mailed to each student, indicating whether he/she will be eligible to commence the next term. Students on the Quarterly System receive their statement of marks in class on their return to school. Failure students are advised of their status by telegram.

If a student wishes to appeal a final mark, a written request for a re-read of the examination in question should be submitted to the Office of the Registrar within *10 school-days* after he/she has re-

ceived the statement of marks. There is a fee of $5 for each subject re-read. If the original mark is favourably adjusted, the fee will be refunded.

A fee of $1 is charged for each transcript of an undergraduate's or graduate's statement of marks, which are available from the Registrar's Office.

Students may interrupt their studies after completion of any term/quarter. However, on return to the program, an application form must be completed and returned to the Office of the Registrar prior to the date of readmission. Permission must be granted by the Board of Admissions before a change in program can be effected.

B. Determination of Standing

Final standing is determined on the basis of term/quarterly progress and examination results. A minimum of 50 per cent in each subject is required for a credit rating. Final standing is computed according to the following schedule:

First class	80% or more
Second class	65% to 79%
Pass	50% to 64%
Failure	Below 50%

The symbol "A" (ægrotat) indicates that the student was absent from the final examination because of medical reasons but was granted standing on the basis of the term/quarter achievement. "Ægrotat" standing may apply to all subjects or to a single subject. A Statement of Marks is mailed to the student's home address as soon as the Marks Review Committee releases the final examination results in June of each year.

C. Failure and Repetition

A student who fails a term may be permitted to repeat the term only at the discretion of the Division Director and the Registrar. It is the responsibility of the student who has failed one or more subjects, but is permitted to continue with his/her program of studies, that evidence of successful completion of the failed subject(s) must be presented to the Office of the Registrar for verification before a Diploma of Technology will be awarded.

VII. REGULATIONS REGARDING CONDUCT, DISCIPLINE, AND ATTENDANCE

It is assumed that all students enrolled at the British Columbia Institute of Technology are interested in pursuing an intense program of studies and that they are prepared to conform to all regulations.

(*a*) Students are expected to conduct themselves in an exemplary fashion at all times and pay diligent attention to their studies. If the Principal believes a student's conduct is such that it is detrimental to the interest of the Institute, he/she may be excluded from further attendance. In assessing a student's capability, the Principal will take into consideration his/her conduct and attitude, both on and off the campus. A student who has been expelled or suspended will not be admitted to the Institute grounds or buildings.

(*b*) The Institute is not responsible for debts incurred by student organizations.

(*c*) If through his/her carelessness or negligence, a student damages the property of the Institute, he/she shall be held responsible. If the damage is caused by students whose names are not known, the cost of repairing the damage may be assessed equally among all students enrolled at the Institute.

(*d*) A student will not be permitted to borrow or remove any apparatus or tools except by the written authority of the Principal or his delegate.

(*e*) General supervision over all forms of entertainment given under the auspices of a student organization come under the jurisdiction of the Principal.

(*f*) It is the policy of BCIT to rely on the judgment of students to maintain a reasonable standard of dress and appearance. The choice of dress is left to the individual student, subject to the following considerations:

(i) In some field-trip and laboratory situations, safety considerations require that special head-gear, shoes, or other clothing and other safety equipment must be worn.

(ii) Where programs involve regular periods of scheduled experience, for example, in industry or hospital, the student may be required to wear a uniform, i.e., hospital, or otherwise dress himself/herself in the appropriate manner acceptable to the affiliating agency.

Based on experience to date, BCIT faculty believe that there is a positive relationship between general dress standards and employment of graduates. Technology faculty are prepared to advise students in the area of acceptable attire.

(*g*) Regular attendance in lectures, seminars, and laboratory periods is required of all students. If a student is absent

for any cause other than illness for more than 10 per cent of the time prescribed for any subject, he/she may be prohibited from writing the final examination in that subject. In case of illness or other unavoidable cause of absence, the student should communicate immediately with his Department Head, stating the cause of absence. Special regulations governing attendance in clinical experience areas are prescribed by the Health Division.

VIII. CHANGES IN CURRICULA AND REGULATIONS

Although it is proposed to adhere to the program of study as set forth in the Calendar, the Institute reserves the right to make, without prior notice, whatever changes are deemed necessary to either the programs of study or the regulations. The Institute reserves the right to cancel any program.

IX. LOCKER FACILITIES

Joint student locker space is provided for the safe storage of personal effects. Students are warned to have identification marks—preferably names and addresses—on all their books, instruments, and other effects. All personal valuables should be kept on the student's person or secured in his/her locker. The Institute will not accept responsibility for any loss of, or damage to, student's personal property.

X. INFORMATION RESOURCE CENTRE AND MEDIA SUPPORT SERVICES

Information Resource Centre—Library

The Library building, with seating capacity for over 500 students and space for over 100,000 volumes, was opened in the fall of 1968.

The Library collections number over 44,000 volumes, including representative works in all fields in which the Institute, the British Columbia Vocational School—Burnaby, and the University of British Columbia's Division of Industrial Education give instruction. In addition, the Library subscribes to over 3,000 periodicals and a variety of other materials selected to support these curriculums. Free access to the reference and general collections is permitted to students at all times, with the exception of those materials in heavy demand which have been placed on "reserve" at the Circulation Desk.

The Library provides study carrells, microfilm readers, copying machines, and a student typing room where calculators are also available. Tapes, filmstrips, filmloops, etc., may be used in spe-

cially equipped audio-visual carrels, and film preview facilities are available.

Students are urged to obtain a copy of the handbook describing the Library's facilities, services, and regulations. This handbook is available at all times in the Library.

Audio Visual Services

BCIT Audio Visual Services functions to assist instructors and students to reach educational objectives by the use of multi-media tools, and in doing so helps to make learning more meaningful and the processes more efficient.

To reach these objectives we offer the following:

A/V equipment for instructor and student use.
Ongoing equipment maintenance.
Preview and screening facilities.
Program development assistance.
Audio and video duplicating.
Graphic art assistance.
General audio visual program, materials, equipment, information, and assistance in various applications.

Audio Visual staff, equipment, and facilities operate as a service to support BCIT programs.

XI. STAFF AND STUDENT HEALTH SERVICES

The Health Service is situated in the East Wing of the Student Activity Centre and consists of a well-equipped treatment room, four beds, and a doctor's and nurse's office.

The Health Service is staffed by a full-time doctor, a Public Health Nurse, and a receptionist and is open from 8.30 a.m. to 4.30 p.m., Monday to Friday.

This service is entirely confidential.

No appointments are necessary.

British Columbia Institute of Technology
Scholarship and Bursary Fund

BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY SCHOLARSHIP AND BURSARY FUND

Contributors, 1975

ACRES CONSULTING SERVICES LIMITED ($100)

Acres Consulting Services Limited contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

W. S. ADAMS MEMORIAL FUND ($170)

The W. S. Adams Memorial Fund has been established by various donors to honour the memory of the late Vice-Principal of the B.C. Institute of Technology. The moneys are to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

AKHURST MACHINERY LIMITED ($100)

Akhurst Machinery Limited contributed a $100 scholarship to be awarded to a student in the Mechanical Technology.

AMERICAN SOCIETY FOR METALS ($200)

American Society for Metals contributed a $200 scholarship to be awarded to a student in the Chemical and Metallurgical Technology.

ARGUS INSTALLATIONS LTD. ($150)

Argus Installations Ltd. contributed $150 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

THE GARY A. BARR MEMORIAL FUND ($7,800)

The Gary A. Barr Memorial Fund was established by various donors. The annual interest of which is to be awarded to deserving students in the Building Technology.

BAY FOREST PRODUCTS LTD. ($250)

Bay Forest Products Ltd. contributed $250 for a bursary to be awarded to a deserving student in the Forest Resource Technology.

BETHLEHEM COPPER CORPORATION LTD. ($1,000)

Bethlehem Copper Corporation Ltd. contributed four $250 bursaries to be awarded to deserving students in the Chemical and Metallurgical Technology.

THE BIRKS FAMILY FOUNDATION ($100)

The Birks Family Foundation contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

BRITISH COLUMBIA ASSOCIATION OF BROADCASTERS ($300)

The British Columbia Association of Broadcasters contributed three $100 scholarships to be awarded in each of the following electives of Broadcast Communications Technology: Radio, Television, and Electronic Journalism.

B.C. COUNCIL OF GARDEN CLUBS ($100)

The B.C. Council of Garden Clubs contributed a $100 scholarship to be awarded to a student in the Biological Sciences Technology, Landscape Horticultural Option.

BRITISH COLUMBIA HOTELS' ASSOCIATION ($600)

British Columbia Hotels' Association contributed two $300 scholarships to be awarded to students in the Hotel, Motel, and Food Service Management Technology.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY ($1,200)

British Columbia Hydro and Power Authority contributed seven scholarships and one bursary of $150 each to be awarded to students in the Electrical and Electronic, Natural Gas and Petroleum, Mechanical, and Civil and Structural Technologies or students in other engineering programs having a direct interest to a public utility.

B.C.I.T. INTER VARSITY CHRISTIAN FELLOWSHIP ($100)

BCIT Inter Varsity Christian Fellowship contributed $100 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

BRITISH COLUMBIA SUGAR REFINING COMPANY, LIMITED ($500)

The British Columbia Sugar Refining Company, Limited contributed $500 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

CANADA PACKERS LIMITED ($150)

Canada Packers Limited contributed $150 for a scholarship to be awarded to a student in the Biological Sciences Technology.

CANADA SAFEWAY LIMITED ($250)

Canada Safeway Limited contributed $250 for bursaries to be awarded to deserving students in the Marketing Management Technology.

CANADIAN AUTO CARRIERS LTD. ($100)

Canadian Auto Carriers Ltd. contributed a $100 bursary to be awarded to a deserving student in either the Administrative Management Technology or Financial Management Technology.

CANADIAN IMPERIAL BANK OF COMMERCE ($250)

The Canadian Imperial Bank of Commerce contributed $250 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

CANADIAN INFORMATION PROCESSING SOCIETY, VANCOUVER CHAPTER ($300)

Canadian Information Processing Society, Vancouver Chapter, contributed two $150 bursaries to be awarded to deserving students in the Computer Programming and Systems Technology.

CANADIAN KENWORTH LTD. ($100)

Canadian Kenworth Ltd. contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

CANADIAN OCCIDENTAL PETROLEUM LTD. ($150)

Canadian Occidental Petroleum Ltd. contributed $150 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

CANADIAN PULP AND PAPER ASSOCIATION ($250)

The Canadian Pulp and Paper Association contributed one $100 and two $75 bursaries to be awarded to deserving students in the Pulp and Paper Option of the Forest Resource Technology.

CANADIAN STEVEDORING COMPANY LIMITED ($300)

Canadian Stevedoring Company Limited contributed $300 for bursaries to be awarded to deserving students in the Business Division.

CANADIAN TELEPHONES AND SUPPLIES LTD. ($50)

Canadian Telephones and Supplies Ltd. contributed $50 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

CHAPTER A.S. OF THE P.E.O. SISTERHOOD ($150)

Chapter A.S. of the P.E.O. Sisterhood contributed a $150 bursary for a deserving student in the Nursing Technology.

COMINCO LTD. ($600)

Cominco Ltd. contributed two $300 scholarships—one to be awarded to a student in the Chemical and Metallurgical Technology, and one to be awarded to a student in the Mining Technology.

CRAIGMONT MINES LIMITED ($700)

Craigmont Mines Limited contributed two $350 scholarships to be awarded to students in any of the following technologies: Chemical and Metallurgical, Mining, or Surveying.

CROWN ZELLERBACH CANADA LIMITED ($600)

Crown Zellerbach Canada Limited contributed four $150 bursaries to be awarded to deserving students in the Forest Resource Technology.

CULLEN DETROIT DIESEL ALLISON LTD. ($250)

Cullen Detroit Diesel Allison Ltd. contributed $250 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

DATA PROCESSING MANAGEMENT ASSOCIATION ($150)

Data Processing Management Association contributed a $150 scholarship to be awarded to a deserving student in the Computer Programming and Systems Technology.

DELTA PROPERTIES LTD. ($300)

Delta Properties Ltd. contributed a $300 scholarship to be awarded to a student in the Hotel, Motel, and Food Service Management Technology.

DOMINION BRIDGE COMPANY, LIMITED ($300)

Dominion Bridge Company, Limited contributed $300 to be awarded to deserving students in either the Surveying or other Engineering Technologies.

DOORMAN AGENCIES LTD. ($600)

Doorman Agencies Ltd., representing the following companies, contributed three $200 scholarships to students in the Hotel, Motel, and Food Service Management Technology:

(1) Heinken Breweries, Amsterdam, The Netherlands;
(2) Grand Marnier, Paris, France;
(3) Dubonnet, Paris, France.

The East Asiatic Company (Canada) Ltd. ($50)

The East Asiatic Company (Canada) Ltd. and their subsidiary, Johnson, Walton Steamships Ltd., contributed $50 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

The T. Eaton Co. Limited ($250)

The T. Eaton Co. Limited awarded $250 to a student in the Marketing or Retailing Option of the Marketing Management Technology in the Business Management Division.

Endako Mines, Division of Canex Placer Limited ($700)

Endako Mines, division of Canex Placer Limited, contributed two $350 scholarships to be awarded to students in any of the following technologies: Chemical and Metallurgical, Mining, or Surveying.

Falconbridge Nickel Mines Limited ($300)

Falconbridge Nickel Mines Limited contributed $300 for bursaries to be awarded to students in the Mining or Surveying Technologies.

Field's Stores Lew Rogers Memorial Bursary ($150)

Field's Stores Limited contributed $150 for a bursary to be known as the Field's Stores Lew Rogers Memorial Bursary, to be awarded to a student in the Marketing Management Technology.

Helen Findlay Memorial Bursary ($500)

British Columbia Tuberculosis-Christmas Seal Society contributed a $500 bursary to a student entering second year in the Nursing Technology. The bursary is referred to as the Helen Findlay Memorial Bursary.

Forest Technologists Association of British Columbia ($100)

Forest Technologists Association of British Columbia contributed two $50 bursaries—one to be known as the A. C. Buckland Bursary to be awarded to a student in the Forestry Program, and the other to be awarded to a student in the Fish, Wildlife, and Recreation Option of the Forest Resource Technology. The recipient of the bursaries must be student members of the Forest Technologists Association of British Columbia.

FORESTRAL INTERNATIONAL LIMITED ($300)

Forestral International Limited, an affiliated company of Sandwell and Company Limited, contributed $300 for a scholarship to be awarded to a student in the Forest Products Program of the Forest Resource Technology.

FRASER VALLEY MILK PRODUCERS ASSOCIATION ($150)

The Fraser Valley Milk Producers Association contributed $150 for a bursary to be awarded to a deserving student in the Biological Sciences Technology.

FRESH PAK LIMITED ($100)

Fresh Pak Limited contributed a $100 bursary to be awarded to a deserving student in the Hotel, Motel, and Food Service Technology.

GIBRALTAR MINES LTD. ($700)

Gibraltar Mines Ltd. contributed two $350 scholarships to be awarded to students in any of the following technologies: Chemical and Metallurgical, Mining, or Surveying.

DEAN H. GOARD ($100)

Dean H. Goard contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund. Mr. Goard was the former principal of the B.C. Institute of Technology.

GOLDER, BRAWNER & ASSOCIATES LTD. ($100)

Golder, Brawner & Associates Ltd. contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

GOODWIN-JOHNSON (1960) LTD. ($250)

Goodwin-Johnson (1960) Ltd. contributed $250 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

GRAY BEVERAGE COMPANY LTD. ($250)

Gray Beverage Company Ltd. contributed two $125 bursaries to be awarded to deserving students in the Marketing Management Technology.

GULF OF GEORGIA TOWING CO. LTD. ($200)

The Gulf of Georgia Towing Co. Ltd. contributed two $100 scholarships to be awarded to students in the Accounting Option of the Financial Management Technology.

Hard Corps (Western International Hotels Scholarships Foundation) ($400)

Hard Corps (Western International Hotels Scholarships Foundation) contributed a $400 scholarship to be awarded to a student in the Hotel, Motel, and Food Service Management Technology.

Home Oil Distributors Ltd. ($125)

Home Oil Distributors Ltd. contributed $125 to a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

Hudson's Bay Company ($500)

Hudson's Bay Company contributed $500 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

Sam Hughes Memorial Bursary Fund ($300)

The Sam Hughes Memorial Bursary Fund has been established to honour the memory of the late Sam Hughes, principal of Mill and Timber Products Ltd. The fund is to contribute two $150 bursaries, one to be awarded to a deserving student in the Forest Resources Technology and one to be awarded to a deserving student in the Business Management Division. The fund was supported by an initial contribution of $2,049, representing the total proceeds of donations to the Sam Hughes Memorial Fund.

Imperial Oil Limited ($300)

Imperial Oil Limited contributed $300 to deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

Imperial Order Daughters of the Empire—Mt. Seymour Chapter ($150)

Imperial Order Daughters of the Empire—Mt. Seymour Chapter contributed $150 to be awarded to a deserving student in the Nursing Program of the Health Division.

Imperial Order Daughters of the Empire—Ruskin Chapter ($150)

Imperial Order Daughters of the Empire—Ruskin Chapter contributed $150 to be awarded to a deserving student in the Nursing Program of the Health Division.

I.C.L. ENGINEERING LIMITED ($300)

I.C.L. Engineering Limited contributed $300 for a bursary or bursaries to be awarded to a deserving student or students in the Mechanical Technology.

INLAND NATURAL GAS CO. LTD. ($250)

Inland Natural Gas Co. Ltd. contributed a $250 scholarship to be awarded to a student in the Natural Gas and Petroleum Technology residing in the area serviced by Inland Natural Gas Co. Ltd.

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF BRITISH COLUMBIA ($100)

The Institute of Chartered Accounts of British Columbia contributed a $100 bursary to be awarded to a deserving student in the Business Technology.

INTERNATIONAL BUSINESS MACHINES, CANADA LTD. ($400)

International Business Machines, Canada Ltd. contributed two $200 scholarships—one to be awarded to a student in the Computer Programming and Systems, and one to be awarded to a student in the Electrical and Electronics Technology.

THE INTERNATIONAL NICKEL COMPANY OF CANADA LIMITED ($300)

The International Nickel Company of Canada Limited contributed two $150 bursaries, known as the Inco Engineering Technology Bursaries, to be awarded to students in the Engineering Division.

JOHNSTON TERMINALS LIMITED ($150)

Johnston Terminals Limited contributed $150 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

KELLY, DOUGLAS & COMPANY LIMITED ($100)

Kelly, Douglas & Company Limited contributed a $100 scholarship to be awarded to a student in the Business Management Division.

KENNCO EXPLORATIONS, (WESTERN) LIMITED ($250)

Kennco Explorations, (Western) Limited contributed $250 for a scholarship to be awarded to a student in the Mining Technology.

PETER KIEWIT SONS COMPANY OF CANADA LTD. ($250)

Peter Kiewit Sons Company of Canada Ltd. contributed a $250 scholarship to be awarded to a student in the Operations Management Technology.

L. & K. LUMBER (NORTH SHORE) LIMITED ($250)

L. & K. Lumber (North Shore) Limited contributed $250 to deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

LABATT BREWERIES OF BRITISH COLUMBIA ($150)

Labatt Breweries of British Columbia contributed $150 for a bursary to be known as the Totem Conference Bursary, to be awarded to a student based on academic qualifications and athletic endeavours connected with Totem Conference sports.

LAPIDARY ROCK & MINERAL SOCIETY OF BRITISH COLUMBIA ($100)

The Lapidary Rock & Mineral Society of British Columbia contributed two $50 bursaries to be awarded to students in the Mining Technology.

LAURENTIDE FINANCIAL CORPORATION LTD. ($200)

Laurentide Financial Corporation Ltd. contributed a $200 scholarship to be awarded to a student in the Financial Management Technology.

MACMILLAN BLOEDEL LIMITED ($700)

MacMillan Bloedel Limited contributed two $350 scholarships to be awarded to a student in each of the Forestry Program and Forest Products Program of the Forest Resource Technology.

THE DEREK S. MANN MEMORIAL FUND ($1,495)

The Derek S. Mann Memorial Fund was established by various donors. The annual interest of which is to be awarded to deserving students in the Building Technology.

NORMAN MANNING LIMITED ($100)

Norman Manning Limited contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

MCCARTER, NAIRNE & PARTNERS ($150)

McCarter, Nairne & Partners contributed a $150 scholarship to be awarded to a student in the Building Technology.

THE D. D. MCNAB BURSARY ($1,743)

The Canadian Institute of Public Health Inspectors, B.C. Branch, contributed $1,743, the annual interest of which is to be awarded as a bursary to a second-year student in the Environmental Health Technology. The bursary is to be referred to as the D. D. McNab Bursary.

MOHAWK OIL CO. LTD. ($1,000)

Mohawk Oil Co. Ltd. contributed $1,000 to be distributed as follows: One $250 bursary to a deserving student in the Marketing Management Technology, one $250 bursary to a deserving student in the Operations Management Technology, and two $250 bursaries to deserving students in the Natural Gas and Petroleum Technology.

PACIFIC COAST TERMINALS CO. LTD. ($250)

Pacific Coast Terminals Co. Ltd. contributed $250 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

PACIFIC LOGGING COMPANY LIMITED ($500)

Pacific Logging Company Limited contributed $500 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

PACIFIC WESTERN AIRLINES LTD. ($250)

Pacific Western Airlines Ltd. contributed $250 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

E. B. PEERLESS LTD. ($50)

E. B. Peerless Ltd. contributed $50 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

PHILIPS CABLES LTD. ($200)

Philips Cables Ltd. contributed $200 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

PITNEY BOWES OF CANADA LIMITED ($20)

Pitney Bowes of Canada Limited contributed $20 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

PLACER DEVELOPMENT LTD. ($700)

Placer Development Ltd. contributed two $350 scholarships to be awarded to students in the Operations Management Technology.

RAYONIER CANADA (B.C.) LIMITED ($1,050)

Rayonier Canada (B.C.) Limited contributed three $350 scholarships—one to be awarded to a student in the Wood Option and one to be awarded to a student in the Pulp and Paper Option of the Forest Products Program, and the third to be awarded to a student in the Forestry Program, all in the Forest Resource Technology.

READ JONES CHRISTOFFERSON LIMITED ($100)

Read Jones Christofferson Limited contributed $100 for a bursary to be awarded to a student in either the Building Technology or the Civil and Structural Technology.

ROBERT HALF PERSONNEL AGENCIES ($100)

Robert Half Personnel Agencies contributed a $100 scholarship to be awarded to a student in the Financial Management Technology.

WILLIAM ROBINSON LIMITED ($150)

William Robinson Limited contributed a $150 bursary to be awarded to a deserving student in the Biological Sciences Technology.

ROTARY CLUB OF VANCOUVER ($500)

Rotary Club of Vancouver contributed two $250 bursaries for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

ROYAL CITY FOODS LTD. ($200)

Royal City Foods Ltd. contributed $200 for a scholarship to be awarded to a student in the Biological Sciences Technology.

SAPPERTON FISH AND GAME CLUB ($100)

Sapperton Fish and Game Club contributed $100 for a bursary to be awarded to a deserving student in second year of the Fish, Wildlife, and Recreation Option of the Forest Resource Technology.

SAUDER INDUSTRIES LIMITED ($2,500)

Sauder Industries Limited contributed $2,500 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

R. P. SHAFLIK ENGINEERING LTD. ($50)

R. P. Shaflik Engineering Ltd. contributed $50 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

SHELL CANADA LIMITED ($250)

Shell Canada Limited contributed a $250 bursary for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

H. A. SIMONS (INTERNATIONAL) LTD. ($1,250)

H. A. Simons (International) Ltd. contributed $1,250 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

NORMAN F. SMITH LIMITED ($300)

Norman F. Smith Limited contributed $300 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

SPRUCE CITY WILDLIFE ASSOCIATION ($500)

Spruce City Wildlife Association contributed two $250 bursaries, to be awarded to students from the Central Interior in the Fish, Wildlife, and Recreation Option of the Forest Resource Technology.

STANDARD OIL COMPANY OF BRITISH COLUMBIA LIMITED ($500)

Standard Oil Company of British Columbia Limited contributed two $250 bursaries to be awarded to students in the Business Management Division.

STROTHERS & MURRAY ($150)

Strothers & Murray contributed a $150 bursary to be awarded to a deserving student in the Surveying or other Engineering Technologies.

STRONG, LAMB & NELSON LTD. ($150)

Strong, Lamb & Nelson Ltd. contributed a $150 bursary to be awarded to a deserving student in the Surveying or other Engineering Technologies.

SUN-RYPE PRODUCTS LTD. ($150)

Sun-Rype Products Ltd. contributed $150 for a scholarship to be awarded to a deserving student in the Biological Sciences Technology.

TAHSIS COMPANY LTD. ($500)

Tahsis Company Ltd. contributed two $250 scholarships—one to be awarded to a student in the Forest Products Program, and one to be awarded to a student in the Forestry Program of the Forest Resource Technology.

THOMPSON, BERWICK, PRATT & PARTNERS ($100)

Thompson, Berwick, Pratt & Partners contributed a $100 scholarship to be awarded to a student in the Building Technology.

JAMES IRWIN THOMPSON MEMORIAL FUND ($200)

The James Irwin Thompson Memorial Fund has been established to honour the memory of the late James Irwin Thompson. The fund is supported by a contribution from the Society of Engineering Technologists.

THURBER CONSULTANTS LTD. ($300)

Thurber Consultants Ltd. contributed $300 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

TRANS MOUNTAIN OIL AND PIPE LINE COMPANY ($250)

Trans Mountain Oil and Pipe Line Company contributed $250 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

THE TRUCK LOGGERS' ASSOCIATION ($200)

The Truck Loggers' Association contributed $1,000 to fund an annual $200 bursary to a student in the Forest Resource Technology. The fund was established to honour the memory of the late George McBryer.

UTAH MINES LTD. ($1,000)

Utah Mines Ltd. contributed $1,000 for deserving students at the Institute of Technology who graduated from North Island Secondary School.

VANCOUVER MILK FOUNDATION ($500)

The Vancouver Milk Foundation contributed $10,000 during 1972 to provide on an annual basis two $250 bursaries to deserving students entering or in the Biological Sciences Technology.

L. A. VARAH LTD. ($100)

L. A. Varah Ltd. contributed $100 for a deserving student at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

VICTORIA MILK FOUNDATION ($500)

The Victoria Milk Foundation contributed $10,000 during 1972 to provide on an annual basis two $250 bursaries to deserving students from Vancouver Island entering or in the Biological Sciences Technology.

WELDWOOD OF CANADA LIMITED ($750)

Weldwood of Canada Limited contributed three $250 bursaries to be awarded to deserving students in the Forest Resource Technology.

WILKINSON COMPANY LIMITED ($250)

Wilkinson Company Limited contributed $250 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

WIRE ROPE INDUSTRIES LTD. ($300)

Wire Rope Industries Ltd. contributed $300 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund.

WOODWARD STORES LIMITED ($400)

Woodward Stores Limited contributed two $200 bursaries—one to be awarded to a student in the Biological Sciences Technology, and one to be awarded to a student in the Marketing Management Technology.

WRIGHT ENGINEERING LIMITED ($250)

Wright Engineering Limited contributed a $250 scholarship to be awarded to a student in the Mechanical Technology.

XEROX OF CANADA LIMITED ($500)

Xerox of Canada Limited contributed $500 for deserving students at the Institute of Technology, to be awarded at the discretion of the trustees of the Scholarship and Bursary Fund. The award is to be referred to as the Xerox of Canada Fellowship Award.

Business Management Director's Fund

This Fund is available without restrictions to the Director of Business Management Division for special projects and activities. Organizations and companies that have contributed to this fund are:

Air Canada.

B.C. Association of Broadcasters.

B.C. Television Broadcasting System Ltd.

Canadian Pacific Airlines.

Canadian Pacific Hotels Ltd.

T. Eaton Company Ltd.

The Hotel Vancouver.

Hudson's Bay Company.

The Institute of Chartered Accountants.

Johnston Terminals Ltd.

Pacific Western Airlines.

Pemberton Securities Limited.

Real Estate Council of B.C.

Scott Paper Limited.

Simpsons-Sears Limited.

Society of Industrial Accountants of B.C.

Trans Mountain Pipe Line Company Ltd.

Engineering Division Entrance Scholarships

These scholarship awards are available to high-school graduates who have been accepted into the first year of specific programs of study in the Engineering Division of the Institute. The scholarships consist of a financial award to the student and an undertaking by the donor company to provide him/her with summer employment during the summer prior to the commencement of the first year of study and during the summer prior to the second year of the program.

The selection is normally based on scholastic achievement in Grades XI and XII although other special conditions may apply as specified by the donor. The donors are companies presently engaged in forest products industry of British Columbia and preference is given to sons or daughters of employees.

British Columbia Forest Products Limited

British Columbia Forest Products Limited awarded four entrance scholarships of $700 each to students entering the first year of the Instrumentation and Systems Technology and the Pulp and Paper Option, the Wood Products Option, and the Forestry Option of the Forest Resource Technology.

Canadian Cellulose Company Limited

Canadian Cellulose Company Limited awarded one entrance scholarship of $1,250 to a student entering the first year of the Pulp and Paper Option of the Forest Resource Technology. Preference is given to students graduating from school districts in which the company maintains its principal operations.

Canadian Forest Products Ltd.

Canadian Forest Products Ltd. awarded two entrance scholarships of $750 each to students entering the first year of the Pulp and Paper Option of the Forest Resource Technology. These awards are to be known as the Howe Sound Pulp Division awards.

Weyerhaeuser Canada Ltd.

Weyerhaeuser Canada Ltd. awarded one entrance scholarship of $700 to a student entering the first year of the Pulp and Paper Option of the Forest Resource Technology.

MacMillan Bloedel Limited

MacMillan Bloedel Limited will offer two entrance scholarships of $750 each, commencing in 1976, to students entering the first year of the Pulp and Paper or Wood Products Options of the Forest Resource Technology.

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.

An initial contribution of $1,000 to start this fund was made by B. H. Campbell, Director of Training, The Western Joint Electrical Training Society.

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 program 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.

T. Eaton Company Ltd. Service Award

An award available to a first-year student proceeding to his/her second year in the Retail Option of the Marketing Management Technology in the Business Management Division. The award comprises payment of tuition fees and dues for the second year, summer employment, and part-time employment according to availability during the academic year. Applicants for these awards should have some interest in and aptitude for retailing, but no obligation of any kind devolves on a successful candidate. Applications are invited from first-year students in March of each year. Selections of recipients are from a list recommended by the Institute.

Hudson's Bay Company Service Awards

These awards are available to first-year students proceeding to their second year in one of the Business Management Technologies. The award comprises payment of tuition fees and dues for the second year, full-time summer employment, and part-time employment according to availability during the academic year. Applicants for these awards should have some interest in and aptitude for retailing, but no obligation of any kind devolves on a successful candidate. Applications are invited from first-year students in March of each year. Selections of recipients are from a list recommended by the Institute.

Academic Medals

Silver medals are awarded annually to the graduate who has achieved the highest academic standing in his/her program of studies. The following medals were awarded at the 1975 Convocation Ceremonies. As indicated, most of the awards include a $100 prize.

OUTSTANDING ACADEMIC ACHIEVEMENT—The Governor General's Silver Medal.

BUSINESS MANAGEMENT DIVISION:

Administrative Management (Administration Option)—The T. Eaton Co. Limited Award ($100).

Administrative Management (Manpower Option)—The Finning Tractor & Equipment Co. Ltd. Award ($100).

Broadcast Communications—The British Columbia Association of Broadcasters' Award ($100).

Computer Programming and Systems—The British Columbia Telephone Company Award ($100).

Financial Management (Accounting Option)—The Society of Industrial Accountants of British Columbia ($100).

Financial Management (Finance Option)—BCIT Alumni Award ($100).

Hotel, Motel, and Food Service Management—The British Columbia Hotels' Association Award ($100).

Marketing Management—The Vancouver Sun Award ($100).

Traffic and Transportation Management—The Dow Chemical of Canada, Limited Award ($150).

Operations Management—The Margery A. Smylie Memorial Award ($100).

ENGINEERING DIVISION:

Biological Sciences:

Food Production—Agricultural Chemical Industry of Vancouver Award ($100).

Food Processing—Food Executives Club of Vancouver Award ($100).

Landscape Horticulture—The British Columbia Nursery Trades Association Award ($100).

Building:

The Architectural Institute of British Columbia Award ($100).

The Gary A. Barr Award ($100).

The Derek S. Mann Award ($100).

Chemical and Metallurgical:

Industrial Chemistry—The Chemical Institute of Canada Award.

Physical Metallurgy—The Wire Rope Industries of Canada, Limited Award ($100).

Civil and Structural—The Col. W. G. Swan Award ($100).

Electrical and Electronics:

Electronics—

The Lenkurt Electric Co. of Canada, Ltd. Award ($100).

The MacDonald Dettwiler and Associates Ltd. Award ($100).

Power—The Federal Pioneer Limited Award ($100).

Forest Resources:

Forestry—The Council of the Forest Industries of British Columbia Award ($100).

Forest Products (Wood Option)—The Council of the Forest Industries of British Columbia Award ($100).

Forest Products (Pulp and Paper Option)—The Canadian Pulp and Paper Association, Pacific Coast and Western Branches Award ($100).

Instrumentation and Systems—The Instrument Society of America, the J. J. Garey Memorial Award ($100).

Mechanical — The Canadian Manufacturers' Association Award ($100).

Mining—The British Columbia Section, Canadian Institute of Mining and Metallurgy Award ($100).

Surveying—The David H. Burnett and Associate Award.

HEALTH DIVISION:

Health Data—The B.C. Association of Medical Record Librarians Award ($125).

Medical Laboratory—The British Columbia Society of Medical Technologists Award.

Medical Radiography — The British Columbia Radiological Society Award ($100).

Nuclear Medicine—The Charles E. Frosst & Co. Award ($100).

Prizes

The following prizes were awarded at the 1975 Convocation Ceremonies to graduates who had gained the highest standing in specific subjects related to the pertinent industry or who had shown the greatest combination of academic ability and leadership to warrant unusual recognition.

BUSINESS MANAGEMENT DIVISION

Administrative Management

BLOCK BROS. REALTY LTD. awarded two prizes of $100 each to two graduating students in Real Estate Management.

J. A. VERNER BOOK PRIZE awarded to the graduate student in the Administrative Management Technology who gained the highest marks.

THE CHARTERED INSTITUTE OF SECRETARIES, BRITISH COLUMBIA BRANCH, awarded a prize of $100 to the outstanding graduate in the following course: Business Law 10.360 and 10.460.

CANADA PERMANENT TRUST COMPANY awarded a prize of $100 to the outstanding graduate in the following course: Finance 16.361 and 16.461.

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF BRITISH COLUMBIA awarded a prize of $25 to the students who had attained the highest marks in Auditing 16.346 and 16.446.

THE DOW JONES AND COMPANY INC. awarded a prize to the outstanding student in the Finance Option of the Financial Management Technology.

THE CERTIFIED GENERAL ACCOUNTANTS ASSOCIATION OF BRITISH COLUMBIA awarded a prize in the form of a Continuing Education Tuition Scholarship to a student in the Financial Management Technology.

Hotel, Motel, and Food Service Management Technology

THE BAYSHORE INN awarded a prize of $200 to an outstanding student in the Hotel, Motel, and Food Service Management Technology.

THE CANADIAN RESTAURANT ASSOCIATION, B.C. DIVISION, awarded a prize of $100 to an outstanding student in the Hotel, Motel, and Food Service Management Technology.

THE FOOD SERVICE EXECUTIVES ASSOCIATION awarded two prizes of $100 each to two graduates of the Hotel, Motel, and Food Service Management Technology.

THE GEORGIA HOTEL awarded a prize of $125 to a student in the Hotel, Motel, and Food Service Management Technology.

THE HARRISON HOTEL awarded a prize to two students in Human Relations.

THE HOTEL VANCOUVER awarded a prize of $250 to an outstanding student in the Hotel, Motel, and Food Service Management Technology.

WHITE SPOT LIMITED awarded two prizes, one of $300 and one of $200 to two students who had obtained outstanding achievement in the Hotel, Motel, and Food Service Management Technology.

ENGINEERING DIVISION

Building

THE AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS awarded a prize of $200 to a student who had obtained outstanding achievement in Building Technology Environmental Services Option.

THE CLAY BRICK ASSOCIATION OF CANADA awarded a prize of $50 to the student who had obtained outstanding achievement in the Building Technology.

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS Book Prize was awarded to the outstanding student in Construction Specifications and Estimating, 40.304, 40.404.

P. B. FORD AND CO. awarded $50 to a student who had obtained outstanding achievement in the Building Technology.

Forest Resource

THE CANADIAN INSTITUTE OF FORESTRY Prize was awarded to the outstanding graduate in the Forestry Program of the Forest Resource Technology.

THE CANADIAN PULP AND PAPER ASSOCIATION (PACIFIC COAST BRANCH) awarded a prize of $150 and a scroll to the outstanding graduate in the Pulp and Paper Option of the Forest Resource Technology.

Mechanical

THE INSTITUTION OF MECHANICAL ENGINEERS Book Prize was awarded to the graduate in the Mechanical Technology who gained the highest marks in the other option from that followed by the student who was awarded the Canadian Manufacturers' Association medallion.

Surveying

THE CORPORATION OF LAND SURVEYORS OF THE PROVINCE OF BRITISH COLUMBIA Prize was awarded to the outstanding graduating student in the Surveying Technology.

HEALTH DIVISION

Medical Laboratory

THE METROPOLITAN BIO-MEDICAL LABORATORIES LTD. awarded two prizes of $100 each to the best student in Bacteriology and Bio-Chemistry.

THE ORTHO DIAGNOSTICS (CANADA) LTD. awarded a prize of $50 to the outstanding graduate in the Medical Laboratory Program who had gained the highest standing in Blood Banking.

THE WARNER-CHILCOTT LABORATORIES CO. LIMITED awarded a prize of $100 to the top academic student in the Medical Laboratory Program—General Proficiency.

THE SHERWOOD MEDICAL INDUSTRIES INC. awarded the Paraplast Award of $100 to the top academic student in the Medical Laboratory Program—Histology.

Nuclear Medicine

THE METROPOLITAN BIO-MEDICAL LABORATORIES LTD. awarded a prize of $100 to the top academic student in Radionuclide.

Registered Nursing

THE W. B. SAUNDERS COMPANY CANADA LIMITED Prize was awarded to the top academic student in Nursing.

Psychiatric Nursing

THE RICHARD STRONG MEMORIAL Prize of $250 was awarded to the top academic graduating student in Psychiatric Nursing.

Career Programmes
Division

CAREER PROGRAMMES DIVISION

Part-time Education for Adult Students

For those students who are not able to, or who do not wish to commit themselves to full-time study in BCIT, there is an alternative—Career Programmes.

WHAT IS IT?

Career Programmes offers regular evening programs for adult part-time students in Business, Engineering, and Health.

Over 300 work-oriented courses are offered through fall, winter, spring, and summer terms.

Certificate programs are set out in the various technologies and at a higher level of study students are able to work toward National Diplomas on pre-approved programs.

Special Certificate programs are also available for students who have already acquired a National Diploma or equivalent.

WHO PARTICIPATES?

Over 7,000 students enrolled in courses this past year, usually taking two courses per week.

Our students, both men and women, have various work and educational backgrounds. Previous educational experience ranges from less than high school graduation to university and BCIT graduation.

The "typical" Career Programmes student is working to get ahead in his/her company and is willing to spend part of his/her leisure time in the classroom working toward this career goal.

WHY THE PARTICIPATION?

We are living in an age of constant rapid technological change which dictates continuous new learning. More people are seeing the need for ongoing educational participation and a great many of these are encouraged by incentives from their employers.

For further information and a copy of the "Career Programmes" calendar, write Director, Career Programs, British Columbia Institute of Technology, 3700 Willingdon Avenue, Burnaby V5G 3H2, or phone 434-5722. Effective May 1, 1976, 434-5734.

Industry Services
Division

INDUSTRY SERVICES DIVISION

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 program.

The application of the systems approach provides a structure for the joint management of training. This 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
programs } to meet needs.
mini schools
Delivery of established programs.
Modification to established programs.
Evaluation of training.
Provision of specialized instructional aids.
Writing texts.
Development of correspondence courses.
Management of training programs.
Staff development.
Pre-employment orientation.
Counselling.
Special needs programs.

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 Program.
Computer-aided Instruction.
Telephone Conference Line Seminars.
Cable T.V.—Lectures and Demonstrations.

DIRECTED STUDY CENTRE

The Directed Study Centre provides correspondence courses and specialized instruction for students who are unable to attend on a regular basis. Registrations are accepted at any time and rate of progress is determined by each student. Courses in Business, Engineering, and Health Technologies are available. Additional Engineering correspondence courses are under development. By early June 1976 the Centre will have available a special Mathematics Review correspondence course designed to prepare students for entry into many BCIT First-year Engineering Mathematics courses. For further information contact the Directed Study Centre.

Student Services

STUDENT SERVICES

A place where students can bring their "bitches" and get help for their problems; our doors are always open. Student Services is the ombudsman of the student body working closely with the Student Association and administration of the Institute.

Student Activity Centre

Students will find the Activity Centre "the centre" of the campus for all major social activities. Student Services' people are available at the SAC building as is the Student Association office. The SAC building also contains recreational facilities, health services, TNT Campus Shop, Total Emage Hairstyling, meeting rooms and cafeteria.

Three-hour Break

Every Wednesday during the school-year, BCIT students are given a three-hour break from 11.30 a.m. to 2.30 p.m. This three-hour break enables the Student Association to schedule concerts and guest speakers for the benefit of the entire student body. It also gives the Sports Chairman a time in which to schedule most of his intramural sports activities so a maximum of students can take part. Keep a close watch to see what is scheduled during the Wednesday three-hour breaks.

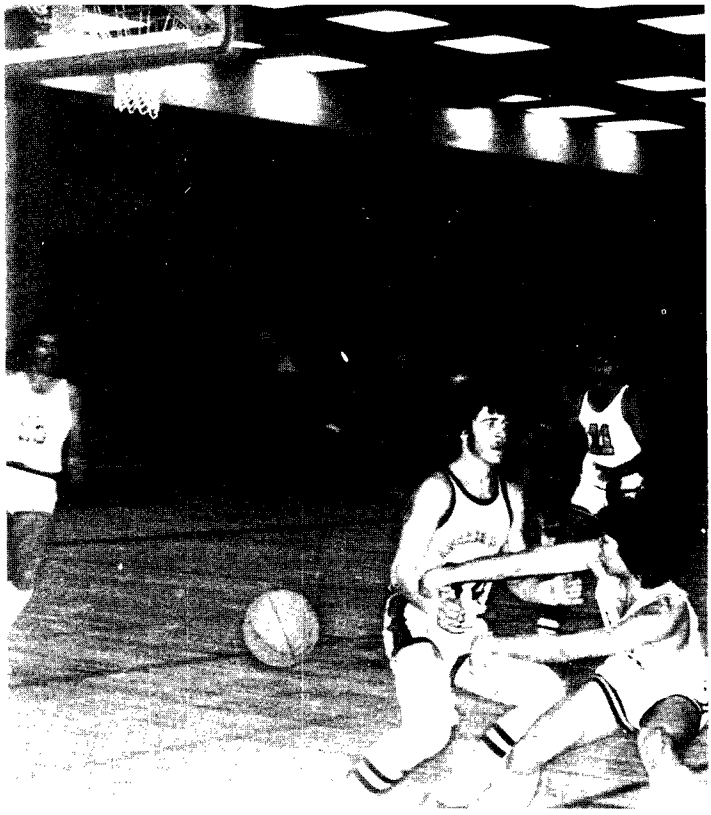
Athletics

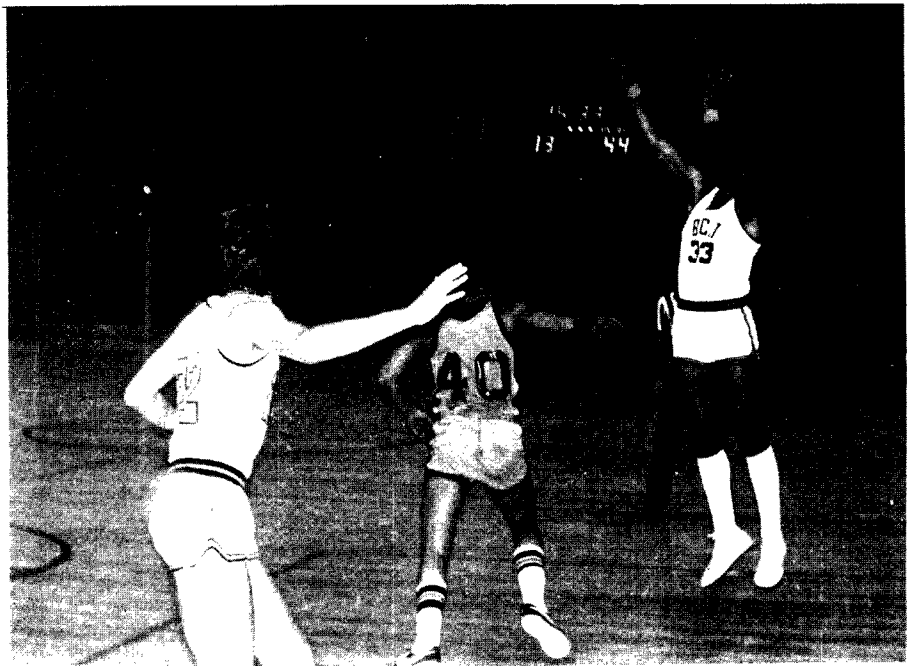
Intramurals and Recreation

Intramural sports are popular programs run under the Sports Chairman; activities are usually held during the three-hour break and include football, ice hockey, floor hockey, and volleyball for both male and female students.

Extramural Sports

An extramural sports program is administered by the BCIT Athletic Department. BCIT is a founding member of the Totem Conference, which is responsible for the administration of athletics in all the two-year post-secondary institutes in British Columbia. BCIT is also a member of 4-West Championships which embraces two-year schools of Western Canada, and is a member of the CCAA nationally. The Athletic Department provides for competition for both men and women in basketball, volleyball, golf, ice hockey, field hockey, soccer, and rugby, just to name a few. BCIT has been noted for its success in Totem Conference play and has sent




BC
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many teams to Western Canadian College Championships. Students are encouraged to mix a strong academic career with a blend of activity of their choice.

Residences

Willingdon School for Girls

In September 1973 the Minister of Education announced that BCIT was to make use of the Willingdon School for Girls as a much needed temporary residence. This residence is located directly across the street from the BCIT campus on Willingdon Avenue. Facilities include a pool, gym, outdoor track, all-weather field, laundry facilities, common kitchen areas, and lounges. There is adequate accommodation for 60 students. The rent is $70 per student.

The Student Services office is responsible for housing and allocation of premises.

Brentwood Manor Residence

In July of 1974 the Minister of Education bought an 18-storey building to be used as a residence for BCIT and BCVS students. The building was being used as a senior citizens' home at the time it was purchased by the Department of Education. The senior citizens that were in occupancy before the Government purchased the building will remain as tenants as long as they so wish (approximately 40). The residence is administered by the B.C. Housing Management Commission.

Single-room accommodation is available and limited double rooms. Each room has its own washroom, single bed, dresser, bookshelf, drapes, and most of them have balconies. On every second floor there is a small lounge equipped for students to prepare light snacks. At the moment there are no cafeteria facilities, and students are not allowed to cook in the residence. On the main floor there is a small lounge area with a shuffleboard and a ping-pong table. The rent is $80 per month.

The Student Services office is responsible for allocation of the premises.

Housing Lists

Students may obtain room and board in the vicinity of the campus at a reasonable rate (approximately $125 to $150 a month for three meals a day).

A list of accommodations will be available to students at the Housing Adviser's office. An excellent cafeteria provides economical services for students who do not wish board.

Student Association

STUDENT ASSOCIATION

All students registered at BCIT are members of the BCIT Student Association and entitled to use of the Student Association facilities. It is the prime concern of the Student Association to provide services for the students of BCIT in a manner which is pleasing to all involved and will serve as much of the student body as possible.

The Student Association is headed by the President and his Executive, 10 of whom are elected in April of each year, they are the Vice-President Internal, Vice-President External, Treasurer, Activities Chairman, Intramural Sports Chairman, Extramural Sports Chairman, Health Society President, Engineering Society President, Business Society President, and the Publications Chairman, who is appointed. The responsibilities of each of the members of the Executive is explained in their titles; their prime function is to act in behalf of the Student Body of BCIT and provide the Student Body with as many benefits as possible during their two-year stay.

BUSINESS MANAGER—*Philip Henderson*

A Business Manager is hired by the Student Association to aid the Executive in the financial dealings of budgets and co-ordinating the Student Offices. Phil Henderson provides the Student Association with assistance and guidance throughout each school-year. If you have any questions that cannot be answered elsewhere, Phil is a good source for information.

OPERATIONS MANAGER—*Nancy Rogers*

An Operations Manager was hired for the first time during the 1973/74 school-year to handle the operations of the Student Activity Centre for such things as pubs and dances. Because she is in the office on a five-day-a-week basis, more contact can be made with agencies to screen talent which is hired for these events.

Students wishing information concerning the Student Activity Centre and facilities available should see the Operations Manager in the Student Association office in the SAC.

OFFICE SECRETARY—*Bev Statham*

The business office of the Student Association is open 8 a.m. to 5 p.m. daily. Our secretary, Bev, will assist you with matters pertaining to the Student Association.

DIVISION COUNCILS

Under the present Student Association structure, each division of BCIT has a president who is responsible for its individual

division council. Health, Business, and Engineering all have a Societies Office in the SAC. Each president is responsible to both Student Executive and the students of their division. Each division is given a budget for the school-year and sponsors student events. Students wishing activities should see their Division Council representative or Division president.

Student Activity Fee

The activity fee collected from students every year is the main source of operating capital for the Student Association. This money is used on equipment, facilities, and administration for the clubs, athletics, and social activities available to all BCIT students.

Health Services

A Health Service office is maintained in the SAC solely for the use of BCIT students, a nurse is on duty during the school-day, and a doctor is in five days a week. At all times there is a doctor on call and the Burnaby General Hospital is within 10 minutes of the campus. All students attending BCIT are urged to take advantage of this service, especially those who are from other parts of the Province.

TNT Campus Shop

The TNT Campus Shop is maintained by the Student Association for the benefit of BCIT students. It is run on a nonprofit basis and stocks everything for student needs from school supplies to handicrafts. The TNT is now conveniently located in the SAC building and open until 7 o'clock week-nights. A full range of periodicals and reading material is available for your enjoyment. Take advantage of the low student prices.

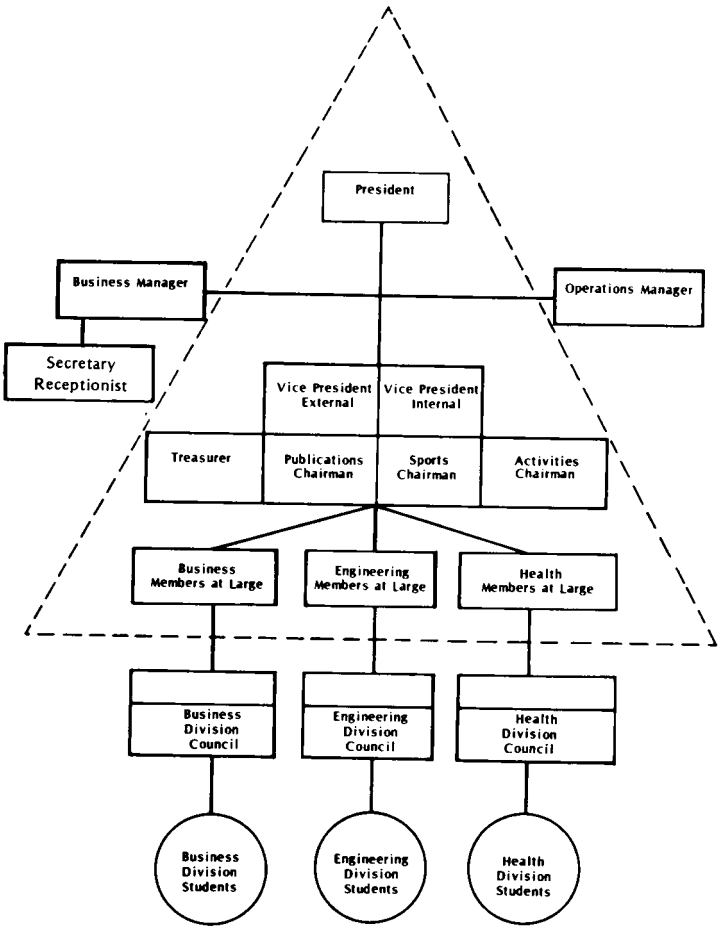
Total Emage Hairstyling

BCIT students are also fortunate enough to have a hairstyling boutique right on campus and at low-budget prices. For top hairstyling for both men and women, check the Total Emage in the East Mall of the SAC, so convenient that you can be serviced during your lunch hour.

Used Bookstore

The Used Bookstore is operated by the Student Association on a nonprofit basis. Students can sell their old books and buy new ones of good quality and save money at the same time. The Used Bookstore is set up on Orientation Day for all students to utilize.

STUDENT ASSOCIATION STRUCTURE



PUBS

BCIT has been given a cabaret licence by the Provincial Government and operates pubs almost every Friday and Saturday nights. Top-name groups from the Lower Mainland are booked for student entertainment. Such annual events as Shinerama, Telethon, Grease Night, and Bierfest are popular. These events are run under the auspices of the Activities Chairman, with the guidance of the Operations Manager.

ACTIVITIES

Clubs fall high on the Student Association agenda; students who have interests in such things as motorsports, scuba diving, wine-tasting, kung fu, karate, band, and outdoors have access to good equipment. Students wishing to form clubs should see the Activities Chairman in the Student Association offices.

ALUMNI ASSOCIATION

All Graduate Diploma Students are members of the BCIT Alumni Association which is committed to promote and further higher technological education in the Province of British Columbia and to that end to co-operate with organizations with similar objectives.

The Alumni Association is headed by the President, his Executive and a Board of Directors, who are responsible for the management, direction, and administration of the business and finances of the Association. The voice of this Association has representation on the Board of Governors of the Institute.

The current Executives and Directors are:

President

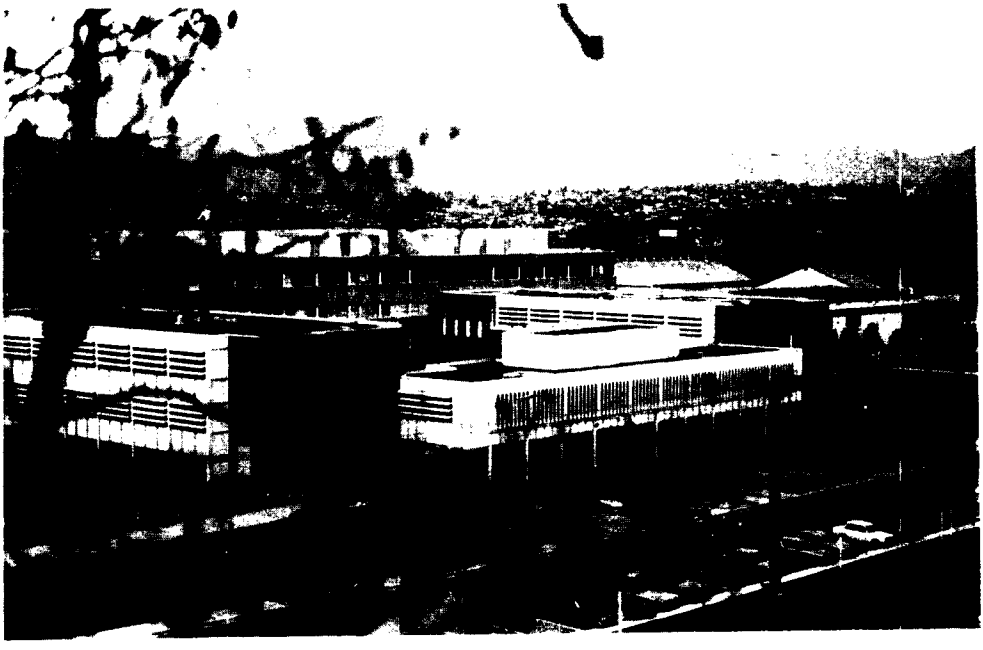
MARK E. BAILEY, DIPL.T.
Graduate in Marketing Management Technology 1972
Finning Tractor & Equipment Company Ltd.

Past President

STAN J. TONOSKI, DIPL.T.
Graduate in Mechanical Technology 1969
Laurentide Financial Corporation Ltd.

Secretary-Treasurer

MARY E. BODO, DIPL.T.
Graduate in Finance Management Technology 1971
Pumps & Power Limited.



Directors

HARRY C. BEDARD, DIPLT., C.E.T.
Graduate in Electrical Power Technology 1969
British Columbia Hydro and Power Authority.

JOHN E. LEECH, DIPL.T., C.E.T.
Graduate in Surveying Technology 1972
Registrar, Society of Engineering Technologists of B.C.

Director and Member of BCIT Board of Governors

RONALD N. ISAAK, DIPLT., C.E.T.
Graduate in Civil and Structural Technology 1968
Cameron Surveying and Engineering Ltd.

For further information contact Director of Information Services, Telephone 434-5722. Effective May 1, 1976, 434-5734 (local 694).

Schedule of Prerequisites

Schedule of Prerequisites

Graduation from senior secondary school as prescribed by the Department of Education for the Province of British Columbia, with special prerequisites: Graduation from the Selected or Combined Studies Program.

BUSINESS MANAGEMENT DIVISION

TECHNOLOGY	SPECIAL PREREQUISITES
Administrative Management.	Math. 11.
*Broadcast Communications.	*Nil.*
Computer Programming.	Math. 11.
Financial Management.	Math. 11.
*Hotel, Motel, and Food Service Management.	*Nil.*
Marketing Management.	Math. 11.
†Operations Management.	Math. 11.

HEALTH DIVISION

TECHNOLOGY	SPECIAL PREREQUISITES
Biomedical Electronics	Math. 12; Phys. 11; Chem. 11.
†Environmental Health.	Math. 12; Chem. 12; Phys. 11.
Health Data.	Math. 12; Type. 11.
†Medical Laboratory.	Math. 12; Chem. 11; Chem. 12; and one other science preferably at the Grade 12 level.
Medical Radiography.	Math. 12; two Science 11's; one Science 12 (Physics, Chemistry, or Biology).
Nuclear Medicine.	Math. 12; two Science 11's; Chem. 12.
Registered Psychiatric Nursing.	*Nil.*
†Registered Nursing.	Chem. 11, Chem. 12, or Biology 12.

ENGINEERING DIVISION

TECHNOLOGY	SPECIAL PREREQUISITES
†Biological Sciences—	
Biological Sciences Program.	Math. 12; Chem. 11.
Management in Agriculture. Program (Agri-Management).	Math. 11.
Building.	Math. 12; Phys. 11.
Chemical and Metallurgical.	Math. 12; Chem. 11.
Civil and Structural.	Math. 12; Phys. 11.
Electrical and Electronics.	Math. 12; Phys. 11.
Forest Resource—	
Forestry.	Math. 12 plus a Science 11 (Biology preferred).
Fish, Wildlife, and Recreation.	Math. 12; Biology 11.
Forest Products—	
Pulp and Paper Option.	Math. 12; Chem. 11.
Wood Products Option.	Math. 12; and one other Science 11.
Instrumentation.	Math. 12; Phys. 11; Chem. 11.
Mechanical.	Math. 12; Phys. 11.
Mining.	Math. 12; Phys. 11; Chem. 11.
Natural Gas and Petroleum.	Math. 12; Phys. 11; or Chem. 11.
Surveying.	Math. 12; Phys. 11.

* Recommendations on course content page.
† Changes from last year.

Summer preparatory programs are available through the Career Programmes Division for those students who lack specific prerequisites or desire refresher courses.
For information please contact British Columbia Institute of Technology, Career Programmes Division, phone 434-5722, local 204/205. Effective May 1, 1976, 434-5734.

List of Programs

LIST OF PROGRAMS

BUSINESS MANAGEMENT DIVISION

- Administrative Management
- Broadcast Communications
- Computer Programming and Systems
- Financial Management
- Hotel, Motel, and Food Service Management
- Marketing Management
- Operations Management

ENGINEERING DIVISION

- Biological Sciences
- Building
- Chemical and Metallurgical
- Civil and Structural
- Electrical and Electronics
- Forest Resource—
  - Forestry
  - Forest Products
- Instrumentation
- Mechanical
- Mining
- Natural Gas and Petroleum
- Surveying

HEALTH DIVISION

- Biomedical Electronics
- Environmental Health Technology
- Health Data
- Medical Laboratory
- Medical Radiography
- Nuclear Medicine Technology
- Registered Nursing (R.N.)
- Registered Psychiatric Nursing (R.P.N.)

Business Division
Instructional Staff

BUSINESS MANAGEMENT DIVISION

R. A. CRADOCK, B.COM., M.B.A., R.I.A., *Acting Director.*

ADMINISTRATIVE MANAGEMENT TECHNOLOGY

G. BELL, B.COM., M.A., *Acting Department Head.*

G. E. BISSELL, B.COM., M.A.
MRS. J. P. DEAN, B.A., M.A.
C. J. DICKHOFF, B.A., M.A.(ECON.), M.A.(PUBLIC ADMIN.), *Acting Chief Instructor.*
H. G. J. HERRON, B.A.(CERT. PUBLIC ADMIN.).
L. E. JOHNSON, B.A., M.B.A.
T. P. JUZKOW, B.A.SC., M.B.A.
A. G. LIDDLE, M.B.A.
R. M. SHARP, B.A.SC., M.B.A., P.ENG.
W. D. SPROULE, B.COM., C.A., R.I.(B.C.), F.R.I.
N. E. STROMGREN, B.A.
B. VAN DER WOERD, B.A.
R. A. VENNE, B.COM.(ECON.) (HONS.), M.B.A.
J. H. VIGER, B.COM., *Acting Senior Instructor.*
F. C. WILLIAMS, B.A.(HONS.), M.A.
R. A. YATES, LL.B., M.B.A.

BROADCAST COMMUNICATIONS TECHNOLOGY

F. L. SANDERSON, DIPL.ED., B.TH., *Department Head*

J. W. ANSELL, DIPL.T.
L. J. DAMER.
T. J. GARNER, B.A.
K. W. HUGHES, DIPL.ED., *Senior Instructor.*
J. J. KEMP.
B. G. MCMASTER, B.A., M.A.
K. J. MITCHELL.
R. H. B. NASON, B.A.
L. D. ROSE, B.A., M.A.
D. W. SHORT.

COMPUTER PROGRAMMING AND SYSTEMS TECHNOLOGY

D. BRECKNER, B.A.(HONS.), M.A.(HONS.), *Department Head.*

P. ABEL, B.A.(HONS.), C.G.A.
J. W. COOKE, C.G.A., *Senior Instructor.*
K. E. HOLDEN, R.I.A.
G. T. KIDD, B.SC.
R. B. LONG, C.G.A.
F. J. MARTIN, F.L.M.I., C.D.P.
R. MCGOWAN.
E. N. NEWTON, B.VOC.ED.
M. SCRIABIN, M.B.A.
F. SENIOR, B.A.(HONS.), *Senior Instructor.*
C. P. SIMMONS.
M. E. TURNER, M.B.A., P.ENG.
G. N. WEIR, C.D.P.
A. Y. W. WONG, B.A.SC., P.ENG.

FINANCIAL MANAGEMENT TECHNOLOGY

P. J. WOOLLEY, B.A., M.A., C.A., *Department Head.*

C. M. BRISCALL, B.COM., M.B.A., R.I.A., *Chief Instructor.*
T. T. Y. CHEN, B.COM., M.B.A., R.I.A.
A. D. CORBETT, DIPL.T., R.I.A.
J. R. H. CURTIS, B.COM.
H. DICK, B.COM.
R. J. DOLAN, B.B.A., M.B.A.
G. H. FARRELL, DIPL.T., R.I.A., *Senior Instructor.*
R. W. JACKSON, M.C.I.
E. C. MCINTOSH, B.COM., C.G.A.
R. C. NICHOLS, B.COM., R.I.A.
M. F. THURGOOD, B.COM., M.B.A., R.I.A.
H. B. YACKNESS, B.COM., M.B.A., C.A.

HOTEL, MOTEL, AND FOOD SERVICE MANAGEMENT TECHNOLOGY

M. M. COLTMAN, M.B.A., C.G.A., *Department Head.*

R. A. BRETT, DIPL.T.
F. J. COOKE.
B. J. FERNANDES.
K. F. KRUEGER.
J. G. LINDENLAUB, *Chief Instructor.*
G. J. WILSON

MARKETING MANAGEMENT TECHNOLOGY

G. H. ABBOTT, B.COM., M.B.A., *Department Head.*

R. BASFORD, B.A.SC., M.B.A.
E. M. IANNACONE, B.COM., M.B.A., *Chief Instructor.*
G. T. JACOB, B.A.(HIST. & ECON.), B.A.(BUS. ADMIN.), M.B.A.
E. Y. MAITLAND.
W. A. SMITH.
R. W. VANDERMARK, B.A.
W. A. E. WALLEY, B.A.

OPERATIONS MANAGEMENT TECHNOLOGY

R. G. SMYLIE, B.A.SC., P.ENG., *Department Head.*

S. E. DUDRA, B.COM., M.B.A.
F. L. GRUEN, B.MGT.ENG., M.A.SC., *Senior Instructor.*
K. C. HARTLEY, B.A.SC., P.ENG.
A. S. LEE, B.ENG., P.ENG.
D. W. MALCOLM, B.SC.
E. MASON, B.A.SC., P.ENG.
J. A. I. MILLETTE, B.A.
B. R. M. MORROW, B.COM., *Senior Instructor.*
G. W. MURRAY, DIPL.T.
W. J. SHERIFF, B.A., B.SC.
L. A. SMITH, DIPL.T., C.A.M.

Part-time Instructional Staff, 1976/77

D. CRAWFORD, LL.B. - - - - *Administrative Management.*
C. H. CHIKO, M.A., PH.D - - - *Administrative Management.*
GEOID MEDIA SERVICES - - - - *Broadcast Communications.*
G. HANNEY - - - - - - *Broadcast Communications.*

Business Division
Guest Lecturers

BUSINESS MANAGEMENT DIVISION

GUEST LECTURERS

ADMINISTRATIVE MANAGEMENT TECHNOLOGY

J. T. FLEMING, Incentives Officer, Department of Regional Economic Expansion.
C. GILMOUR, Assistant Director, Mediation Services Branch, B.C. Department of Labour.
D. HARVEY, Regional Officer, Government of Canada, Industry Trade and Commerce.
R. G. HERBERT, Professor Faculty of Law, University of British Columbia.
S. F. D. KELLEHER, Barrister and Solicitor, Monroe, Fraser and Kelleher.
A. A. KUBE, Education Director, Canadian Labour Congress.
D. A. KING, Chief Industrial Engineer, British Columbia Research Council.
M. KINGHAN.
K. J. MEEHAN.
J. J. MOONEY, Director of Personnel, A & W Food Services of Canada Ltd.
DR. W. R. NORD, Faculty of Commerce, University of British Columbia.
D. M. PICCINNIN, Trade Development Officer, Economic Development, Government of British Columbia.
S. L. RAM, Co-ordinator, Training and Development B.C. and Yukon District, Canada Post Office.
W. J. SHARP.

BROADCAST COMMUNICATIONS TECHNOLOGY

G. ALTMAN, retired.
F. J. ANTHONY, Account Executive, Young, Ross, Anthony Agency.
J. ASHBRIDGE, Newscaster, CKNW.
T. BAIRD, Creative Director, Cockfield, Brown Agency.
W. BARKER, News Director, CKNW.
C. BELL, News Director, CHAN Television.
R. COLLISTER, Washington Correspondent, Canadian Broadcasting Corp.
C. COOK, Open-line Host, CJOR.
J. CRAWFORD, Senior Audio Engineer, CBUT.
K. CUTLER, Freelance Film Writer.
H. L. DAVIS, General Manager, CKNW.
M. FOISY, Production Manager, CHQM.
B. FORST, Host, Brian Forst Show, Western Broadcasting Ltd. (CKNW).
G. GAUDET, Music Director.
G. HANNEY, Unit Manager, British Columbia Television.
I. HERMAN, Make-up Artist, Canadian Broadcasting Corp.
B. HOOD, Dawson Strata Managements Ltd.
J. A. F. JORDAN, Production Manager, CJOR.
D. LOOY, News Photographer, Canadian Broadcasting Corp.
J. O'BRIEN, Lighting Director, Canadian Broadcasting Corp.
T. PEACOCK, Production Manager, CKWX Radio.
T. REYNOLDS, Director TV Sports and Outside Broadcasting CBUT, Canadian Broadcasting Corp.
P. ROLSTON, Kiddies Show Performer, CHAN Television.
S. STOCKER, Investigative Reporter, Radio Journalist, CKNW.
D. J. S. WILLIAMS, Director of Design Department, Canadian Broadcasting Corp.

COMPUTER PROGRAMMING AND SYSTEMS TECHNOLOGY

G. ALLARD, O.R. Analyst, MacMillan Boedel Ltd.
C. W. BAKER, President, Tetrad Computer Ltd.
A. J. GAITENS, Systems Development Manager, Nissan Automobile Co. (Canada) Ltd.
C. A. HARRIS, Systems Manager, Finning Tractor & Equipment Co. Ltd.
H. E. W. WUHRER, Consultant, Peat Marwick and Partners.

FINANCIAL MANAGEMENT TECHNOLOGY

R. E. BERZE, Advisory Services Officer, Industrial Development Bank.
M. G. FRANCIS, Chartered Accountant, Deloitte Haskins & Sells.
W. R. KORUZ, Comptroller, Agency Press Ltd.
A. F. MCKAY, Credit Manager, Quadra Steel Ltd.
D. H. MAPLETON, Accounting and Credit Manager, Jantzen of Canada Ltd.
F. G. POWELL, National Credit Manager, Citation Cabinets Ltd.
E. PETERS, Regional Credit Manager, Bank of Montreal (Mastercharge Division).
N. D. THOMPSON, Sales Manager, Western Region, Bank of Montreal (Mastercharge Division).

HOTEL, MOTEL, AND FOOD SERVICE MANAGEMENT TECHNOLOGY

D. M. ALDOUS, Consumer Consultant, Fisheries Operations Inspection Branch, Government of Canada.
D. G. ALLEN, Sales Manager, Fletchers Limited.
R. S. A. ALPEN, Marketing Co-ordinator, Andres Wines (B.C.) Ltd.
D. BELLAMY, Managing Director, Canadian Restaurant Association, B.C. Division.
T. BENMORE, Sales Representative, Hotel Vancouver.
J. BILLHEIMER, Sales Manager, Best Cleaners and Contractors Ltd.
D. BOLTON, Territorial Manager, Economics Laboratory.
P. J. DINEEN, Sales Representative, Swift Canadian Co. Ltd.
J. DOANE, Sales Manager, Chef Ready Foods Ltd.
J. M. FERRIS, Managing Director, Trans-Pacific Tours Ltd.
D. FORTIN, Reservations Manageress, Vancouver Airport Hyatt House.
P. GRAHAM, Director of Food Services, Vancouver Parks Board.
L. HANSEN, Sales Representative, Four Seasons Hotel Ltd.
G. HARVIE, Public Health Inspector, Burnaby Health Department.
G. HEDDINGER, President, Qwest Foods Ltd.
P. HEISS, Architect, Carlberg Jackson Partners.
C. HEMPE, Regional Director, Mexican National Tourist Council, Government of Mexico.
B. HILL, Front Office Assistant Manageress, Vancouver Airport Hyatt House.
T. HOLLOSI, Consultant, Milcam Enterprises Ltd.
J. LEACH, Western Representative, Pan-American Coffee Bureau, San Carlos, Calif.
A. LEDUC, Western Regional Manager, Letraset Canada Ltd.
K. LIND, Restaurant Manager, McDonalds Restaurants Ltd.
V. MCLALLAN, Department Head, Delta Services.
B. F. MACNEIL, Sales Representative, British Columbia Packers Ltd.
H. B. MAIN, General Manager, Greater Vancouver Convention and Visitors Bureau.

C. MAN, Director of Operations and Maintenance, Vancouver Parks Board.
L. MARKHAM, Food and Beverage Manager, Hilton International.
K. MILLER, Regional Marketing Manager, Litton of Canada Ltd.
W. B. MORRISON, Management Consultant, Laventhol & Horwath.
D. L. NOBLE, Regional Consultant Educational Services, Health Protection Branch, Health and Welfare (Canada).
E. NORMAN, Director, Travel Information Services, Department of Travel, B.C. Government.
C. ROWETT, Architect, Reno Negrin & Associates.
R. RUSSELL, Front Office Manager, Sheraton-Villa Inn.
M. SCANLAN, Sales Manager, Canadian Keyes Fibre Co. Ltd.
G. SELDON, Sales Manager, Russell Food Equipment Ltd.
R. SMITH, Regional Marketing Manager, Xerox of Canada Ltd.
G. W. SONNEX, Purchasing Agent, Hotel Vancouver.
J. SOUTHERN, Western Canadian Manager, British Rail.
J. SWOBODA, Director, Food and Beverage, Bayshore Inn.
M. TAIT, Area Manager, White Spot Ltd.
B. TELFORD, Sales Representative, Xerox of Canada Ltd.
L. A. TERRY, Supervisor Food Service Sales, Swift Canadian Co. Ltd.
S. TODD, Sales Supervisor, Kraft Foods Ltd.
A. E. VERONNEAU, retired.
A. WALKER, Account Executive, Dickson's Food Services Ltd.
D. WEST, Customer Service Adviser, B.C. Telephone Co.
V. ZIMMERMAN, Branch Manager, Bell & Howell Canada Ltd.

MARKETING MANAGEMENT TECHNOLOGY

A. ANDERSON, Vice-President General Manager, Canawest (KVOS).
G. T. BATES, Manager, Marketing and Sales, CP Rail.
A. BINGHAM, Assistant Vice-President Technical Services, CP Air.
R. BUCHOLS, C.A., Peat Marwick Mitchell & Co.
E. CASOLA, Dominion Customs Appraiser, Department of National Revenue.
A. W. CROSS, Director, Customer Service Training, Pacific Western Airlines.
H. A. DAWES, News Director, Canadian Broadcasting Corp.
D. G. EVANS, Financial Secretary, IWA Local 217, International Woodworkers of America.
J. FITCH, Industrial Relations Adviser, Forest Industrial Relations.
S. GWOZD, Sales Manager, Womens Wear and Fashion Accessories, The Bay.
W. P. HENDERSON, Sales Manager, B.C. Region, Cottrell Forwarding Co. Ltd.
F. A. JACKSON, Acting Manager, Woodwards Furniture Fair.
A. JORDAN, Production Manager-Announcer, CJOR.
W. KAVANAUGH, Port Manager, Fraser River Harbour Commission.
L. LEE, Senior Copy Chief, CJOR.
H. J. MALCOLM, Vice-President, Allied Van Lines Ltd.
S. S. MARTIN, Marine Manager, Imperial Oil Co.
C. MAYRS, Assistant Creative Director, Baker Lovick Advertising Agency.
C. OSBORNE, Regional Sales Manager, Clarke Transportation Canada Ltd.
A. H. PEARCE, Manager, Personnel, Pacific Western Airlines.
S. PEARCE, Columbia Cargo Surveyors.
K. POTTER, Director of Security, Pacific National Exhibition.
P. R. ROSEN, Art Director, Belkin Packaging Ltd.
F. RUSSELL, Actor-Film Director-Producer, Mayday Production Services Ltd.
R. SEIDELMAN, Transportation Analyst, Standard Oil Co. of B.C. Ltd.
L. SMITH, Consultant, Department of Consumer and Corporate Affairs.

R. SMITH, President, Local 500, International Longshoremen's and Warehousemen's Union.
E. W. TUBESING, Media Planner-Buyer, McKim Advertising.
A. WHITELAW, Regional Distribution Superintendent, Simpson-Sears Ltd.
J. WIELL, Manager, Bilateral Agreements International & Corporate Services, CP Air.
D. M. ZEHNDER, Western Canada Manager, Emery Air Freight.

OPERATIONS MANAGEMENT TECHNOLOGY

C. W. BAKER, President, Tetrad Computer Services.
R. JENS, Systems Analyst, Finning Tractor & Equipment.
G. LAAK, Marketing Representative, IBM Canada Ltd.
R. J. THOMPSON, Personnel Manager, Evergreen Press.
W. WRIGHT, Production Planner, C.A.E. Machinery.

TEACHING ASSOCIATES

BROADCAST COMMUNICATIONS TECHNOLOGY

BY STAFF OF

CBUT.
CHAN-TV.
CKNW.
CKLG.
CKWX.
CHWK, CHILLIWACK.
CKOK, PENTICTON.
CKOV, KELOWNA.
CHBC-TV, KELOWNA.
CFJC, KAMLOOPS.
CKNL, KAMLOOPS.
CKXR, SALMON ARM.
KGMI, BELLINGHAM.
KING-TV, SEATTLE.
KIRO-TV, SEATTLE.
KOMO-TV, SEATTLE.
VANCOUVER CABLEVISION.

Business Division Advisory Committees

ADMINISTRATIVE MANAGEMENT

ADMINISTRATION OPTION ADVISORY COMMITTEE

Chairman:

F. W. VANSTONE, Vice-President, Finance, Neonex International Ltd., Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director/Technological Education, British Columbia Institute of Technology, Burnaby.

R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.

G. BELL, Acting Department Head, Administrative Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

W. W. ALLEN, Senior Executive Vice-President, Bank of British Columbia, Vancouver.

B. BERGER, Secretary Treasurer & Business Manager, Service Employees International Union, Vancouver.

G. E. BISSELL (Faculty Rep.), Instructor, Administrative Management Technology, British Columbia Institute of Technology, Burnaby.

J. B. BUCHANAN, President and Chief Operating Officer, B. C. Packers Ltd., Richmond.

G. W. CARRUTHERS (Alumni Rep.), Parts Manager, Finning Tractor, Vancouver.

G. T. CORLETT, President, Corlett & Co., Vancouver.

D. O. HUNTER, Assistant Treasurer, West Coast Transmission Co. Ltd., Vancouver.

R. J. KAYSER, Senior Vice-President, The Bank of Montreal, Vancouver.

J. LINDSEY, President, Western Reproducers Ltd., Vancouver.

MRS. B. J. RAE, President, Office Assistance (Canada) Ltd., Vancouver.

J. RODGERS, Manager, Employee Relations, International Business Machines Ltd., Vancouver.

D. STINSON, General Manager, Sun Publishing Company Ltd., Vancouver.

R. E. TAYLOR, Director of Finance, A & W Food Services of Canada Ltd., Vancouver.

R. THOMSON (Student Rep.), 2nd-year Student, Administration Option, Administrative Management Technology, British Columbia Institute of Technology, Burnaby.

PERSONNEL AND INDUSTRIAL RELATIONS ADMINISTRATION OPTION ADVISORY COMMITTEE

Chairman:

R. D. CUMMING, Manager, Anaconda Britannia Mine, Division of Anaconda (Canada) Ltd., Britannia.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.

R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.

G. BELL, Acting Department Head, Administrative Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

P. F. CHISHOLM, Administrative Manager, Shellburn Refinery, Shell (Canada) Ltd., Vancouver.
H. D. DAVIES, Regional Representative, Public Service Commission, Burnaby.
W. FROST, Regional Educational Liaison Officer, Public Service Commission of Canada, Vancouver.
S. J. HATCHETT, Director of Employee Development, B.C. Telephone Co., Vancouver.
D. H. LAWSON, Manager, Personnel Services, Crown Zellerbach (Canada) Ltd., Vancouver.
A. G. LIDDLE (Faculty Rep.), Instructor, Administrative Management Technology, BCIT, Burnaby.
C. LOYST, Personnel Manager, Finning Tractor & Equipment Co. Ltd., Vancouver.
J. J. MOONEY, Director of Personnel, A & W Food Services of Canada Ltd., North Vancouver.
DR. L. F. MOORE, Faculty of Commerce, University of British Columbia, Vancouver.
R. MCMORINE (Alumni Rep.), Regional Assistant Staffing Adviser, Unemployment Insurance Commission, Vancouver.
D. PINKHAM (Student Rep.), 2nd-year Student, Manpower Management Option, British Columbia Institute of Technology, Burnaby.
H. H. ROSS, Personnel Manager, Vancouver Stores, Hudson's Bay Company, Vancouver.
W. C. SHELLARD, Industrial Relations Director, Employers' Council of B.C., Vancouver.
MRS. C. E. SULLIVAN, Personnel Officer, Bureau of Special Health Services, B.C. Government, Vancouver.
G. H. TAYLOR, Director of Employee Relations, H. A. Simons Ltd., Consulting Engineers, Vancouver.
MRS. M. TAYLOR, Training Manager, B.C. Operations, Simpsons-Sears Ltd., Burnaby.

PUBLIC ADMINISTRATION OPTION ADVISORY COMMITTEE

Chairperson:

M. J. SHELLEY, Manager, Corporation of the District of Burnaby, Burnaby.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.
R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.
C. J. DICKHOFF, Acting Chief Instructor, Administrative Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

J. S. CALDWELL, Instructor, Forest Resource Technology, British Columbia Institute of Technology, Burnaby (Faculty Rep.).
MISS MERLE CAMPBELL, Commissioner, Public Service Commission, Government of British Columbia, Victoria.
G. W. CARLISLE, Director of Finance and Administration, Greater Vancouver Regional District, Vancouver.

J. CARRADICE, Director, Forest Training School, Forest Service of British Columbia, Surrey.
P. CLARK, Director of Personnel Service, Department of the Attorney-General, Government of British Columbia, Victoria.
W. FINLAY, Director of Classification, Public Service Commission, Government of British Columbia, Victoria.
H. G. J. HERRON, Instructor, Administrative Management Technology, British Columbia Institute of Technology, Burnaby (Faculty Rep.).
G. LAUE, Director of Personnel, City of Vancouver.
A. LIMACHER, Senior Personnel Officer, Department of Highways, Government of British Columbia, Victoria.
J. S. MILLER, Regional Staff Development Officer, Public Service Commission, Government of Canada, Vancouver.
J. MINTY, Comptroller General, Control and Audit Branch, Department of Finance, Government of British Columbia, Victoria.
MISS MURIEL MCMILLAN, Regional Personnel Adviser, Unemployment Insurance Commission, Government of Canada, Vancouver.
P. RAMSAY, Director of Agencies and Personnel, Department of Finance, Government of British Columbia, Victoria.

BROADCAST COMMUNICATIONS ADVISORY COMMITTEE

Chairman:

D. BARKMAN, President and General Manager, CHWK, Chilliwack.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.
R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.
F. L. SANDERSON, Department Head, Broadcast Communications Technology, British Columbia Institute of Technology, Burnaby.
K. W. HUGHES, Senior Instructor, Broadcast Communications Technology, British Columbia Institute of Technology, Burnaby.
H. M. PALMER, retired (Director of Television, Canadian Broadcasting Corp.).

Members:

J. ASHBRIDGE, News Broadcaster, CKNW, New Westminster.
MS. T. BARR (Alumni Rep.), Producer CBC Television, Vancouver.
J. BAUGH, News Director, CBC Radio, Vancouver.
C. COPELAND, Radio Station CFAX, Victoria.
H. DAVIS, General Manager, Radio NW Ltd., New Westminster.
S. W. DAVIS, President, Broadcast Technical Services Ltd., Vancouver.
J. D. ELTON, General Manager, Radio Station CKWX, Vancouver.
F. ENGEL, TV Production Manager, CBC Television, Vancouver.
W. C. ELLIOTT, Vice-President, Production, British Columbia Television Broadcasting System, Ltd., Burnaby.
D. HAMILTON, General Manager, Radio Station CKLG, Vancouver.
G. HANNEY, News Unit Manager, BCTV News, Vancouver.
W. HUGHES, Executive Vice-President, Western Broadcasting Co. Ltd., Vancouver.
J. LANDRY, Manager, CBC Director/French Services, Vancouver.
D. LIDDELL, General Manager, Cable 10, Vancouver.

HOWARD MARKSON (Student Rep.), 2nd-year Student, Television Elective, Broadcast Communications Technology, British Columbia Institute of Technology, Burnaby.
A. MARTENS, Technical Producer, CBC Television, Vancouver.
K. J. MITCHELL (Faculty Rep.), Chairman/Faculty Committee and In-Instructor, Broadcast Communications Technology, British Columbia Institute of Technology, Burnaby.
R. W. SERVICE, Director of Television, Canadian Broadcasting Corporation, Vancouver.
R. SHARP, General Manager, CHBC-TV, Kelowna.
J. SKELLY, President and General Manager, NL Radio Ltd., Kamloops.

COMPUTER PROGRAMMING AND SYSTEMS ADVISORY COMMITTEE

Chairman:

J. R. P. POWELL, Manager, Data Processing, MacMillan Bloedel Limited, Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.
R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.
D. BRECKNER, Department Head, Computer Programming and Systems Technology, British Columbia Institute of Technology, Burnaby.
C. N. MACKEOWN, Manager, Computer Centre, British Columbia Institute of Technology, Burnaby.

Members:

P. ABEL (Faculty Rep.), Instructor, Computer Programming and Systems Technology, British Columbia Institute of Technology, Burnaby.
J. BAIRD, Director of Data Processing and Research, Transportation and Communications, Parliament Buildings, Victoria.
A. COLBECK (Alumni Rep.), Senior Programmer, E.D.P. Services, MacMillan Bloedel Limited, Vancouver.
W. R. ELLWOOD, Director, Computer Services, CP Air, Vancouver.
E. S. GARDINER, Manager, Data Processing, British Columbia Hydro and Power Authority, Vancouver.
J. M. KENNEDY, Director of Computing Centre, University of British Columbia, Vancouver.
J. M. LEVY, Director of Finance, Fields Department Stores Ltd., Vancouver.
J. G. PIKET, Manager, Computer Systems, Block Bros. Realty Ltd., Vancouver.
K. L. ROBERTSON (Student Rep.), 2nd-year Student, Computer Programming and Systems Technology, British Columbia Institute of Technology, Burnaby.
W. H. SMITH, Senior Systems Analyst, Kelly Douglas & Co., Vancouver.
E. W. WELLWOOD, Manager, Corporate Operations, Research Department, Canadian Forest Products, Vancouver.
D. C. WIENS (Student Rep.), 2nd-year Student, Computer Programming and Systems Technology, British Columbia Institute of Technology, Burnaby.
F. WUHRER, Senior Consultant, Peat, Marwick & Partners, Vancouver.

FINANCIAL MANAGEMENT ADVISORY COMMITTEE

Chairman:

L. N. DYER, Director of Finance, Liquor Administration Branch, Department of Attorney General, Province of British Columbia, Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.

R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.

P. J. WOOLLEY, Department Head, Financial Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

P. BENSON, Director of Education, Institute of Chartered Accountants of British Columbia, Vancouver.

MISS C. M. BRISCALL (Faculty Rep.), Chief Instructor, Financial Management Technology, British Columbia Institute of Technology, Burnaby.

T. EDWARDS (Student Rep.), 2nd-year Student, Financial Management Technology, British Columbia Institute of Technology, Burnaby.

J. B. FERGUSON, Vice-President, Gulf of Georgia Towing Co. Ltd., Vancouver.

M. T. GIULIANI (Alumni Rep.), Commercial Mortgage Supervisor, Laurentide Financial Corp. Ltd., Vancouver.

H. R. HUNTER, White and Peters Ltd., Vancouver. (Representing Canadian Credit Institute.)

P. MANG (Student Rep.), 2nd-year Student, Financial Management Technology, British Columbia Institute of Technology, Burnaby.

W. C. MCCALPIN, President, McCalpin, Leche & Company Limited, Vancouver.

R. G. SPELLISCY, Vice-President and Treasurer, Canada Safeway Ltd., Vancouver.

C. J. TRUNKFIELD, Executive Vice-President, Certified General Accountants Association of Canada, Vancouver.

D. G. USHER, Partner, Thorne, Riddell & Co., Vancouver.

M. H. W. VINCENT, Director of Education, Certified General Accountants Association of British Columbia, Vancouver.

W. R. SOMERVILLE, Executive Director, Society of Industrial Accountants of British Columbia, Vancouver.

HOTEL, MOTEL, AND FOOD SERVICE MANAGEMENT ADVISORY COMMITTEE

Chairman:

V. T. BURT, General Manager, Hotel Vancouver, Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.

R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.

M. M. COLTMAN, Department Head, Hotel, Motel and Food Service Management Technology, British Columbia Institute of Technology, Burnaby.

J. G. LINDENLAUB, Chief Instructor, Hotel, Motel and Food Service Management, British Columbia Institute of Technology, Burnaby.

Members:

D. BELLAMY, Managing Director, Canadian Restaurant Association, British Columbia Division, Vancouver.
J. M. BYROM, Secretary-Manager, The University Club of Vancouver, Vancouver.
D. B. CANT (Student Rep.), 2nd-year Student, Hotel, Motel, and Food Service Management Technology, British Columbia Institute of Technology, Burnaby.
MRS. J. DANN, Managing Director, British Columbia Motels, Resorts, and Trailer Parks Association, Vancouver.
B. JENSEN (Alumni Rep.), Branch Manager, Flight Kitchen, Cara Operations Ltd., Richmond.
T. A. KILBY, Personnel Officer, Valleyview Hospital, Essondale.
K. F. KRUEGER (Faculty Rep.), Instructor, Hotel, Motel and Food Service Management Technology, British Columbia Institute of Technology, Burnaby.
R. LYON, General Manager, Grosvenor Hotel, Vancouver.
H. B. MAIN, General Manager, Greater Vancouver Convention and Visitors Bureau, Vancouver.
L. W. MANUEL, Executive Vice-President, British Columbia Hotels' Association, Vancouver.
A. OADES, General Manager, Bayshore Inn, Vancouver.
W. PATTISON, President, Delta Properties Ltd., Vancouver.
D. M. RICHARDS (Alumni Rep.), Director of Sales, Hotel Georgia, Vancouver.
K. H. G. SCHUMANN, General Manager, Stuart Anderson's Black Angus Restaurants, Vancouver.
R. J. STOUT, Vice-President, White Spot Ltd., Vancouver.
J. H. SYRETT, Area Food Services Manager, Eaton's Food Services Ltd., Vancouver.

MARKETING MANAGEMENT

MARKETING MANAGEMENT ADVISORY COMMITTEE

Chairman:

J. NAIRN, Manager for Administrative and Commercial Services, B.C. Hydro and Power Authority, Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.
R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.
G. H. ABBOTT, Department Head, Marketing Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

P. C. FORWARD, Managing Director, Regional Marketing Surveys Ltd., Vancouver.
R. W. VANDERMARK (Faculty Rep.), Instructor, Marketing Management Technology, British Columbia Institute of Technology, Burnaby.
J. D. KENMUIR (Alumni Rep.), Comprehensive Marketing Services, Vancouver.

DR. S. M. OBERG, Associate Professor, Faculty of Commerce and Business Administration, University of British Columbia, Vancouver.

MARILOU MARIACHER (Student Rep.), Marketing Management Option, British Columbia Institute of Technology, Burnaby.

V. J. RUMFORD, V. J. Rumford Media, West Vancouver.

L. SMITH, Regional Consumer Consultant, Bureau of Consumer Affairs, Vancouver.

R. J. THOMPSON, Manager, Sales Administration, Crown Zellerbach Co. Ltd., Vancouver.

TRAFFIC AND TRANSPORTATION MANAGEMENT ADVISORY COMMITTEE

Chairman:

W. E. MCKINNEY, Vice-President, Sales, Johnston Terminals Ltd., Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.

R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.

G. H. ABBOTT, Department Head, Marketing Management Technology, British Columbia Institute of Technology, Burnaby.

E. M. IANNACONE, Chief Instructor, Marketing Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

H. L. ANDERSON, Manager, Purchasing and Traffic, Dow Chemical of Canada Ltd., Delta, and Past National Director of Education, Canadian Industrial Traffic League.

C. N. ARMSTRONG, Industrial Engineer, Plywood Division, MacMillan Bloedel Ltd., Vancouver, and Past Educational Chairman, B.C. Chapter, International Materials Management Society.

S. J. BOGGIS, Traffic Manager, Woodward Stores Ltd., Vancouver.

F. BUCHANAN, Manager, Steamship Department, Balfour Guthrie (Canada) Ltd., Vancouver.

J. CAMPBELL, Manager, Canadian Consolidated Freightways, Burnaby.

DR. T. D. HEAVER, Lecturer, Faculty of Commerce and Business Administration, University of British Columbia, Vancouver.

E. Y. MAITLAND (Faculty Rep.), Instructor, Traffic and Transportation Management Option, Marketing Management Technology, British Columbia Institute of Technology, Burnaby.

B. L. O'MALLEY, Supervisor, Customs Clearance Division, Leith & Dyke Ltd., Vancouver.

MRS. E. V. PORT, Freight Sales Analyst, Canadian National Railways; and Past President, Vancouver Women's Transportation Club, Vancouver.

A. D. RUSSELL, Cargo Sales and Service Regional Manager, Air Canada, Vancouver.

R. E. SEIDELMAN (Alumni Rep.), Operations and Transportation Division, Standard Oil Co. of B.C. Ltd., Vancouver.

ED SKODA (Student Rep.), 2nd-year Student, Traffic and Transportation Management Option, Marketing Management Technology, British Columbia Institute of Technology, Burnaby.

OPERATIONS MANAGEMENT ADVISORY COMMITTEE

Chairman:

R. JENS (Alumni Rep.), Systems Analyst, Finning Tractor & Equipment Co. Ltd., Vancouver.

Ex Officio:

E. W. H. BROWN, Acting Executive Director, Technological Education, British Columbia Institute of Technology, Burnaby.

R. A. CRADOCK, Acting Director, Business Management Division, British Columbia Institute of Technology, Burnaby.

R. G. SMYLIE, Department Head, Operations Management Technology, British Columbia Institute of Technology, Burnaby.

Members:

F. L. GRUEN (Faculty Rep.), Senior Instructor, Operations Management Technology, British Columbia Institute of Technology, Burnaby.

CARL GUNG (Student Rep.), 2nd-year Student, Operations Management Technology, British Columbia Institute of Technology, Burnaby.

P. R. HARRISON, Director of Operations Services, Western Postal Region, Vancouver.

D. H. JAMIESON, Chief Engineer, Canron Ltd., Western Bridge Division, Vancouver.

D. A. KING, Industrial Engineer, British Columbia Research Council, Vancouver.

C. N. MACKEOWN, Manager, Administrative Systems, British Columbia Institute of Technology, Burnaby.

E. H. MCCAFFERY, Secretary-Manager, British Columbia Branch, Canadian Plumbing and Mechanical Contractors' Association, Vancouver.

MRS. W. MCDONALD, President, B.C. Bearing Engineers Ltd., Burnaby.

K. MILLER, Manager of Industrial Engineering, Crown Zellerbach, Vancouver.

B. R. M. MORROW (Faculty Rep.), Senior Instructor, Operations Management Technology, British Columbia Institute of Technology, Burnaby.

J. PATTERSON, Vice-President, Peter Kiewit Sons Co. Ltd., Vancouver.

Business Division Programs

BUSINESS MANAGEMENT DIVISION

The Business Management Division offers a two-year full-time program in a number of important areas of business. The division graduates approximately 350 students each year and has an enviable placement record. Most technologies achieve a 100-per-cent placement of their graduates and in recent years the placement of graduates seeking employment by the September following graduation has not been below 90 per cent for any technology.

The business programs are set up with the expert guidance of advisory committees broadly representative of the field the technology seeks to serve. The programs are well established and relevant to the needs of the students and the business community.

Business today is not a simple matter. In former times it was considered satisfactory for a high school graduate to start "at the bottom rung of the ladder!" Nowadays the entrant into the business world must have basic skills, problem-solving ability, a willingness to adjust appropriately to change, specialized knowledge, and a direction in which to go. You are invited to examine the various programs offered in the following pages. One program, Public Administration, will graduate its first class in 1977. For your convenience, a summary of the Business Management Division technologies is given below:

Administrative Management
- Administration Option
- Personnel and Industrial Relations Administration Option
- Public Administration Option

Broadcast Communications
- Radio Elective
- TV Elective
- Broadcast Journalism

Computer Programming and Systems
- Business Systems Option
- Management Science Option

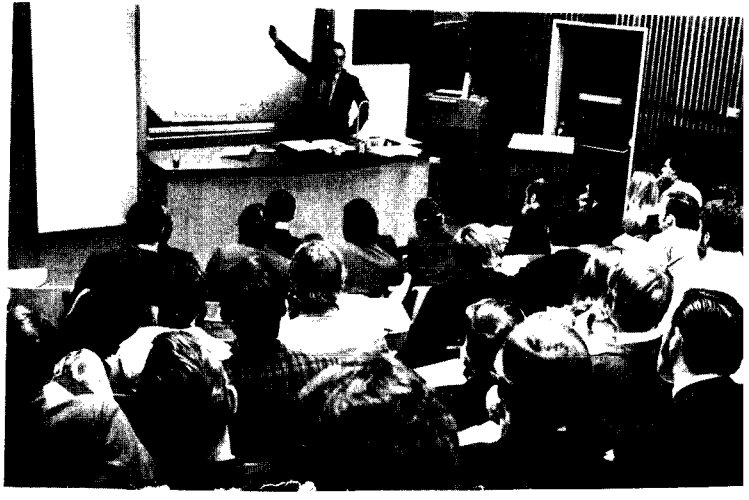
Financial Management
- Accounting Option
- Finance Option

Hotel, Motel, and Food Service Management

Marketing Management
- Marketing Management Option
- Traffic and Transportation Management Option

Operations Management

(Agri-Management: *See* Biological Sciences, Engineering Division)



Administrative Management Technology

The Administrative Management Technology is designed to give a broad yet thorough understanding of modern business practices and to fit the student for effective managerial roles.

The first year of the program is used to build an understanding of the general subject areas of business organization. In the second year, students may pursue their career goals by selecting one of three options. The options available are Administration, Personnel and Industrial Relations Administration, and Public Administration.

Administration Option

This option is broad in scope and gives the student a foundation in a variety of administrative subjects useful in entering a wide selection of business enterprises.

Administrative positions that a graduate can attain in this area involve such functions as planning, banking and finance, production, marketing, real estate, and small business operation. A number of students select this option because it gives the best preparation for starting and running their own business or that of their family.

After appropriate job experience, opportunities to progress to higher management positions are limited only to the graduate's own ability and ambition.

Personnel and Industrial Relations Administration Option

It is increasingly recognized that productivity in business, industry, and Government depends to a great extent on the development and utilization of human resources.

This option emphasizes those areas which are important to this purpose. The selection and placement of manpower, principles of psychology applied to administration, relations between management and labour, the training and development of manpower on the job are areas of study which are unique to the option.

Students electing to enter the Personnel and Industrial Relations Administration Option should have a strong desire to take part in the management of people and should be prepared to examine and evaluate objectively the results of recent research developments in this field. Positions in this area will involve the many aspects of human resource management such as training, employee development, personnel selection, job evaluation, industrial relations, and organization renewal and development.

Public Administration Option

The rapidly expanding Governments at the municipal, Provincial, and Federal levels over the past few years have opened up many job opportunities for students wishing to pursue rewarding careers in the public service. The Public Administration Option has been designed to prepare graduates with the training and expertise to handle responsible positions such as General Administrators, Office Managers, Benefits Managers, Planning Assistants, Assessors, Tax Administrators, Resource Managers, Budget Administrators, to mention only a few. Government jobs are no longer the low-paid humdrum variety of yesteryear, but well-paid rewarding and challenging roles with potential for advancement.

This program is the only one of its kind in the Province and has been implemented at the urging of the various Governmental levels which have identified the need for more well-trained people to enter the public service.

Students electing this option should have the desire to apply the principles of good management to the whole area of public administration.

BUSINESS MANAGEMENT DIVISION

ADMINISTRATIVE MANAGEMENT TECHNOLOGY

	YEAR 1 *Term 1*	Classroom Hrs. per Wk.
10.131	Management in Industry	3
10.135	Economics	3
14.050	Introduction to Data Processing	4
14.196	Office Systems and Procedures	3
16.140	Accounting	5
20.191	Marketing	3
22.110	Business Mathematics	4
31.102	Communication	4
	Library and Research	6
		35

	YEAR 1 *Term 2*	
10.221	Psychology in Management I	3
10.231	Administrative Practices	4
10.235	Economics	3
10.240	Government and Business	3
16.240	Accounting	5
20.291	Marketing	3
22.210	Business Statistics	4
31.202	Communication	4
	Library and Research	6
		35

	YEAR 2 *Term 3*	Admin.	Personnel	Public Admin.
10.321	Psychology in Management II		3	
10.325	Industrial Relations	4	4	4
10.327	Organization Renewal and Development		3	
10.329	Real Estate Management	3		
10.333	Industry Analysis	4		4*
10.340	Government and Politics in Canada			3
10.360	Business Law	3	3	3
10.370	Personnel Administration		3	
14.052	Computers in Business	4	4	4
16.344	Management Accounting	3		
16.350	Public Financial Administration			3
16.362	Finance	4	4	4
22.310	Management Engineering I	3	3	3
	Library and Research	7	8	7
		35	35	35

	YEAR 2 *Term 4*			
10.425	Industrial Relations		3	
10.427	Training and Development		3	3†
10.428	Directed Studies		6	6
10.429	Real Estate Management	3		
10.434	Managerial Policy	3	3	3
10.440	Government and Politics in Canada			3
10.460	Business Law	3	3	3
10.470	Personnel Administration	3	4	3
16.445	Credit and Collections	4		
16.462	Finance	4	4	4
20.484	Transportation and Distribution Management	3‡		
22.410	Management Engineering II	4	3	3
	Library and Research	8	6	7
		35	35	35

* *Alternative Elective* (Public Admin. only)
10.321 Psychology in Management II
10.327 Organization Renewal and Development
10.907 Discussion Leadership

† *Alternative Elective* (Public Admin. only)
10.907 Discussion Leadership
16.450 Taxation
20.484 Transportation and Distribution Management

‡ *Alternative Elective* (Admin. Option only)
16.450 Taxation

General Prerequisite: Graduation from the Selected or Combined Studies Program.
Special Prerequisite: Mathematics 11.
Please refer to page 82 *re* preparatory courses.

Business Management Division

Broadcast Communications Technology

The Broadcast Communications program was initiated through the combined efforts of the private sector of the industry and the Canadian Broadcasting Corporation in this Province. The need for trained personnel continues to grow in Broadcast journalism, radio, and television production. The program is such that persons desirous of entering fields other than mass communications through broadcasting (i.e., Audio Visual, Public Relations, or Cablecasting) will find much of the basic technical background included.

The educational emphasis is upon versatility, so that a graduate may find employment in a variety of occupations within the broadcast industry. Students will enrol in ONE of the three electives provided in the calendar. Radio Production, Television Production, Broadcast Journalism. The first of the four terms in the course is designed to provide a general background, with the remainder of the time free for concentrated effort in all aspects of the chosen elective. A brief description of each follows:

TELEVISION PRODUCTION—The students selecting this elective will concentrate efforts in all of the production tools of a modern television broadcast station. Full use of colour, and experience in producing all types of modern television productions is provided so that the student may work his or her way through most of the occupational positions in the television hierarchy.

RADIO PRODUCTION—Is similar to television in its terms of reference at the Institute. The objectives are the same to provide as detailed a background as is possible, with the addition of as much practical experience as can be achieved in the time available.

BROADCAST JOURNALISM—Technically this elective bridges both radio and television. The students work in three main areas, Radio News, Television News, and Investigative and Research Reporting. Considerable time is spent as well working in the area of documentary, information, and research presentations in both television and radio.

In each of the electives students are graded against industry and professional standards and must achieve such within their period of study.

Applicants are reminded that the Institute can accept only a limited number of students in this technology, and they should, therefore, be certain to include with their applications full details as to related experience and extra-curricular courses or aptitude for the field. Wherever possible, the applicant should apply for an interview with the Institute Counselling Service and, following that, with departmental personnel of Broadcast Communications. If such an interview is not possible, write to the Department Head, and an interview in the field may be arranged. Early application to this technology is highly recommended. Regular introductory meetings are held Mondays at 5 p.m. in Room 129.

The prospective student is expected to have a thorough knowledge of English. Previous studies in the areas of Civics and Current Events will also prove of value. Typing is essential.

The communications industry offers graduates interesting, challenging, and rewarding work, with good opportunities for advancement in many varied areas.

BCIT

BUSINESS MANAGEMENT DIVISION
BROADCAST COMMUNICATIONS TECHNOLOGY

YEAR 1 — *Term 1*

All subjects taken by all students of the technology.

No	Subject	Classroom Hours per Week
12.101	Introduction to Radio	17
12.102	Introduction to Television	
12.101/102	Introduction to Radio and Television	
12.103	Introduction to Broadcast Journalism	2
12.105	Industry Organization	2
12.107	Production Techniques	2
20.190	Writing and Sales	3
31.105	Communication for Broadcasters	4
	Library and Research	5
		35

Term 2

No.	Subject	RADIO ELECTIVE Classroom Hours per Week	TELEVISION ELECTIVE Classroom Hours per Week	JOURNALISM ELECTIVE Classroom Hours per Week
12.201	Introduction to Radio	14	....	....
12.202	Introduction to Television	....	14	....
12.203	Broadcast Journalism	....	....	14
12.205	Industry Organization	2	2	2
12.206	History and Current Events	3	3	3
12.207	Production Techniques (Announcing)	3	....	....
12.208	Production Techniques (Staging)	....	3	....
12.209	Production Techniques (Photography)	....	....	3
20.290	Writing and Sales	3	3	3
31.205	Communication for Broadcasters	4	4	4
	Library and Research	6	6	6
		35	35	35

YEAR 2 — *Term 3*

10.381	Organizational Behaviour	3	3	3
12.301	Radio Production	22	....	....
12.302	Television Production	....	22	....
12.303	Broadcast Journalism	....	....	22
12.307	Production Techniques (Radio News)	3	....	....
12.308	Production Techniques (Photography)	....	3	....
12.309	Production Techniques (Announcing)	....	....	3
31.305	Communication for Broadcasters	4	4	4
	Library and Research	3	3	3
		35	35	35

Term 4

12.401	Radio Production	22	....	....
12.402	Television Production	....	22	....
12.403	Broadcast Journalism	....	....	22
12.406	History and Current Events	3	3	3
12.407	Production Techniques (Announcing)	3	....	....
12.408	Production Techniques (Public Affairs)	....	3	....
12.409	Production Techniques (Editorial)	....	....	3
31.405	Communication for Broadcasters	3	3	3
	Library and Research	4	4	4
		35	35	35

NOTE—All second-year students will serve a one month industry practicum.

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisite: All students *will* be expected to be able to type by the mid point of Term 1; therefore a typing course is recommended.

Students in Radio and Journalism will require a portable cassette recorder.

Recommended Subjects: English Literature 12, History 12, and subjects relating to Civics, Economics, and Law.

Please refer to page 82 *re* preparatory courses.

Business Management Division

Computer Programming and Systems Technology

The development in the last few years of the electronic computer has resulted in what has been called a "second industrial revolution." Almost every field of human endeavour has been affected by this development, and computers are now used in such diversified areas as banking, libraries, business accounting, air-line ticket reservations, space flight, controlling railroads, predicting weather, calculating statistics for insurance companies, scientific research, and automatic control of factories, refineries, and power plants.

These applications of the electronic computer cannot be successfully established without an enormous amount of human planning and preparation. The computer is an extremely fast and reliable calculating device, but it must be given completely detailed instructions for every step in the calculation. This involves three main steps in the application of a computer to a problem. First, a complete analysis must be made of the problem, taking into account every conceivable situation that can arise. Next, an approach to the solution must be formulated showing the action to be taken in each different circumstance. Finally, the solution must be expressed in the form of a set of instructions to the computer.

The Computer Programming and Systems Technology is designed to train students to meet the demand for programmers and systems analysts. In the first year, basic business subjects such as accounting, economics, office equipment, etc., are studied, as well as the introductory courses in programming and systems. In the second year, students have the choice of concentrating either on business data processing systems or on the application of mathematical techniques to managerial, engineering, or medical problems.

They should be interested in the practical application of equipment to solving problems in an industrial environment. This will involve an appreciation of human factors as well as a mere interest in machines.

Students wishing to enter this program should have an analytical mind with a strong aptitude for logical reasoning, as well as a capacity for painstaking attention to detail.

Some experience in business is also an asset.

NOTE—A program of studies leading to an Advanced Diploma of Technology is being prepared for students who have completed the two-year National Diploma or equivalent. Courses covering the latest developments in the technology will be offered in the evening, so that they can be taken over an extended period by working graduates or during a one-year period with full time study.

BUSINESS MANAGEMENT DIVISION
COMPUTER PROGRAMMING AND SYSTEMS TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
10.132	Management in Industry	3
14.160	Computer Programming I	4
14.170	Computer Systems I	2
14.182	Office Equipment	3
16.140	Accounting	5
20.090	Marketing	4
22.114	Applied Mathematics	5
31.102	Communication	4
	Common Tutorial	1
	Library and Research	4
		35

Term 2

10.236	Economics	3
14.260	Computer Programming II	6
14.270	Computer Systems II	5
14.296	Office Systems and Procedures	3
16.240	Accounting	5
22.214	Statistics in Business and Industry	3
31.202	Communication	4
	Common Tutorial	1
	Library and Research	5
		35

YEAR 2 — *Term 3*

No.	Subject	BUSINESS SYSTEMS OPTION Classroom Hours per Week	MANAGEMENT SCIENCE OPTION Classroom Hours per Week
10.382	Organizational Behaviour	3	
14.306	Probability and Simulation		8
14.360	Computer Programming III	8	8
14.370	Computer Systems III	8	8
14.380	Operating Systems	2	2
16.341	Cost and Managerial Accounting	4	
16.343	Cost Accounting		4
22.314	Introduction to Operations Research	3	
22.334	Management Engineering I	3	
	Library and Research	4	5
		35	35

Term 4

10.432	Business and Administrative Practices	3	3
14.409	Operations Research Techniques		8
14.460	Computer Programming IV	8	8
14.470	Computer Systems IV	8	8
14.480	Operating Systems	2	2
16.441	Cost and Managerial Accounting	4	
22.434	Management Engineering II	4	
	Library and Research	6	6
		35	35

General Prerequisite: Graduation from the Selected or Combined Studies Program.
Special Prerequisite: Mathematics 11.

Please refer to page 82 *re* preparatory courses.

Business Management Division

Financial Management Technology

Financial management is a vital aspect of business life and continues to grow in importance as modern management techniques are developed and applied. The Financial Management Technology will enable students to train in this field by taking a general course of studies in their first year followed in the second by specialized training in either Accounting or Finance.

Accounting Option

Accounting, which has frequently been called the "language of business," can be broken down into three parts—accounting systems, financial reporting, and auditing. The Accounting Option is concerned with all three aspects of accounting. They are introduced in the first-year courses in accounting, data processing, and systems. More specialization is provided in financial and cost accounting in the second year.

Large organizations maintain departments to perform the accounting functions of financial accounting, cost accounting, internal audit, and budget preparation. Many jobs are open in these departments at the middle management level. That the graduate can enter accounting positions upon leaving the British Columbia Institute of Technology does not mean that his/her training should be considered at an end. The faculty of the option maintain active and close liaison with the professional accounting associations in British Columbia, and the graduate who wants to undertake the training they offer is in an advantageous position as a result of the courses he/she has taken at the Institute.

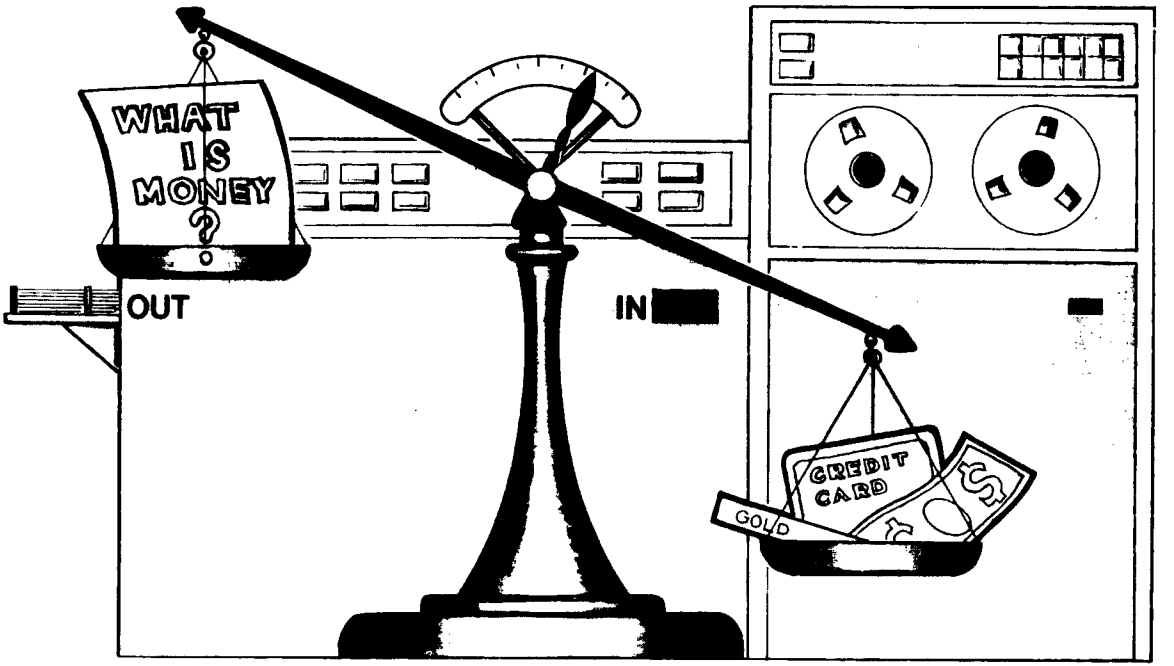
Finance Option

Finance is an essential part of business management. No undertaking can begin or continue unless it has financing. Finance is the concern of business firms as they seek funds for existing and new operations. Finance is the concern of financial institutions, as they provide funds for the business firms. Background for the study of finance is provided in the financial accounting courses. Decision-making in the finance field is dealt with in depth in the specialized second-year courses.

Many job opportunities exist for graduates in this option. Financial institutions such as banks, trust companies, insurance companies, and finance companies offer a wide range of occupations. These institutions are increasingly aware of the need for post-high-school training. Business firms also offer opportunities in their finance departments for option graduates. After appropriate job experience, opportunity for advancement to the intermediate level of branch manager and beyond would exist.

A student wishing to enter either the Accounting Option or the Finance Option should have an inquiring mind and enjoy working with people. A capacity to reason clearly and to work hard is also required. A student who comes with these qualities and a determination to succeed will be assured of employment in a field of absorbing interest and continuing challenge.

FINANCIAL MANAGEMENT



BUSINESS MANAGEMENT DIVISION

FINANCIAL MANAGEMENT TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
10.133	Management in Industry	3
10.137	Economics	3
14.182	Office Equipment	3
16.140	Accounting	5
16.145	Credit and Collections	4
20.191	Marketing	3
22.116	Business Mathematics	5
31.102	Communication	4
	Library and Research	5
		35

Term 2

10.233	Administrative Practices	3
10.237	Economics	3
14.050	Introduction to Data Processing	4
14.296	Office Systems and Procedures	3
16.240	Accounting	5
20.291	Marketing	3
22.216	Business Statistics	5
31.202	Communication	4
	Library and Research	5
		35

YEAR 2 — *Term 3*

No.	Subject	ACCOUNTING OPTION Classroom Hours per Week	FINANCE OPTION Classroom Hours per Week
10.360	Business Law	3	3
10.383	Organizational Behaviour	3	3
14.052	Computers in Business	4	4
16.341	Cost and Managerial Accounting	4	....
16.346	Auditing	4	....
16.347	Financial Accounting	5	5
16.361	Finance	4	4
16.365	Money and Banking	....	4
16.366	Security Analysis	....	4
16.370	Projects in Industry	4	4
	Library and Research	4	4
		35	35

Term 4

10.460	Business Law	3	3
14.053	Business Computer Programming	4	....
16.441	Cost and Managerial Accounting	4	....
16.446	Auditing	4	....
16.447	Financial Accounting	5	5
16.450	Taxation	3	3
16.461	Finance	4	4
16.465	Money and Banking	....	4
16.466	Security Analysis	....	4
16.470	Projects in Industry	4	6
	Library and Research	4	6
		35	35

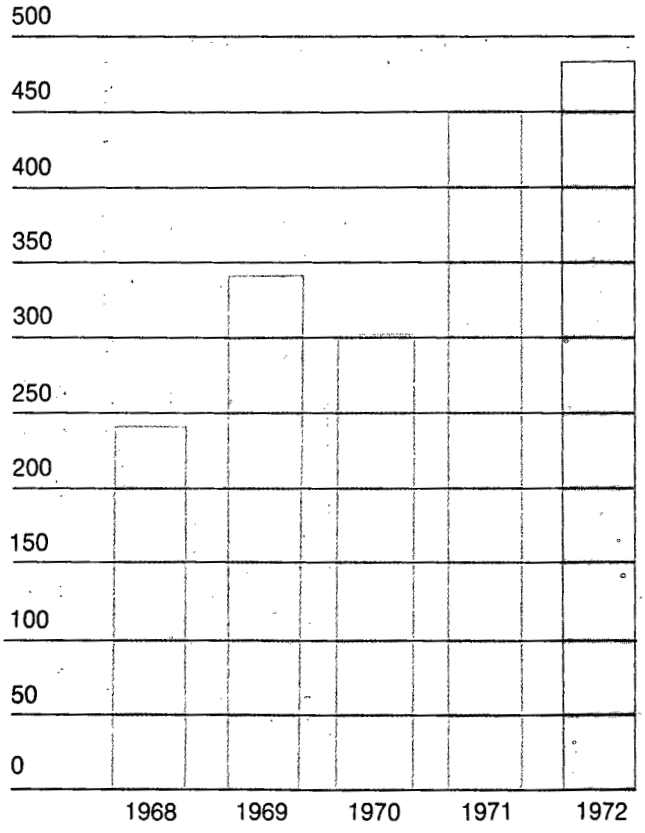
General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisite: Mathematics 11.

Please refer to page 82 *re* preparatory courses.

TOTAL PASSENGERS

(Thousands)



GROUSE MOUNTAIN RESORTS LTD.

SKYRIDE

EARNINGS PER SHARE

	$ .18
	.11
	.29

Business Management Division

Hotel, Motel, and Food Service Management Technology

The " hospitality " industry is in a state of rapid expansion. Receipts from tourists to Canada have more than doubled in the last few years. This rate of growth is expected to continue. Every tourist establishment must be staffed by trained managers and employees to serve the tourist trade and travelling public. At present the demand for qualified administrative personnel exceeds the supply, a situation likely to become even more serious in the next few years. The need is for well-trained managers with the ability to look ahead and plan, with the flexibility of mind to adapt to rapidly changing conditions.

With this training, supplemented by three months of *mandatory* practical experience in a hospitality/tourism job between the first and second years, graduates should find ample employment opportunities.

Graduates should be prepared to work irregular hours if necessary and be able to associate harmoniously with fellow employees and the public in general. Some practical experience is advisable before applying for this program.

In this program, students obtain intensive theoretical and practical training not only in general business procedures, but also in every aspect of hotel or restaurant operations. The hotel and restaurant laboratory area at the Institute is outfitted with a fully furnished lounge, and a front desk equipped with the latest automatic billing and audit machine. Students will train in the school's dining-room, and food production and research laboratory, learning the fundamentals of food operations from the purchase of food through its preparation to the serving of a top-quality meal.

Job opportunities lie not only in the field of hotels, motels, and restaurants, but also in department store, industrial, and air-line catering, and in other organizations associated with the problems of feeding and housing, such as hospitals and universities.

Other opportunities for employment lie in the general field of tourism, with travel/tour agencies, surface or air transportation companies, or with one of the Government departments active in the tourist business.

BUSINESS MANAGEMENT DIVISION

HOTEL, MOTEL, AND FOOD SERVICE MANAGEMENT TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
10.138	Economics	3
16.140	Accounting	5
16.145	Credit and Collections	4
18.102	Food and Beverage Management	5
18.103	Front Office Management	3
18.111	English Speech	2
22.118	Business Mathematics	4
31.102	Communication	4
	Library and Research	5
		35

Term 2

10.238	Economics	3
14.050	Introduction to Data Processing	3
16.240	Accounting	5
18.201	Rooms and Lounge Management	3
18.202	Food and Beverage Management	5
18.203	Front Office Machine Posting Practicum	1
22.318	Basic Management Engineering	3
31.202	Communication	4
	Library and Research	8
		35

YEAR 2 — *Term 3*

18.300	Summer Work Practicum	
18.302	Food and Beverage Management	3
18.305	Food Production and Service	6
18.313	Food and Beverage Control	4
18.316	Human Relations	2
18.325	Marketing and Sales Promotion	5
18.330*	Tourism Plant Design	4
18.331†	Introduction to Tourism	3
31.302	Communication	2
	Library and Research	6
		35

Term 4

18.402	Food and Beverage Management	4
18.405	Food Production and Service	6
18.413	Hospitality Industry Accounting	4
18.416	Human Relations	2
18.418	Front Office Accounting	3
18.425	Marketing and Sales Promotion	5
18.430‡	Tourism and Travel	3
18.450	Research Project	3
	Library and Research	5
		35

* Alternative elective, 40.307 Planning and Design.
† Alternative elective, 22.218 Business Statistics.
‡ Alternative elective, 10.417 Hospitality Industry Law.

General Prerequisite: Graduation from the Selected or Combined Studies Program.
Special Prerequisite: Nil.
Recommended Subjects: Foods 12B and subjects of commercial nature.

Please refer to page 82 *re* preparatory courses.

Business Management Division

Marketing Management Technology

Businesses across Canada are looking for people with an aptitude and flair for marketing and the ability to respond to the challenges of a dynamic society where wants and needs are continually changing.

Marketing has been a vital force and played a major role in our reaching the unprecedented standard of living we have enjoyed over the past years. The present and future unsettled and disrupted economic conditions of world, national, and regional economies is now forcing new responsibilities and new responses on marketing. Intelligent, resourceful, and trained marketing personnel are required to meet these new challenges.

Marketing personnel must be equipped with an understanding of the objectives, principles, and methods of marketing. They must be able to adapt to accelerating rates of technological innovation and to initiate dynamic marketing practices and intense cultivation of markets.

In order to meet this need, the Marketing Management programs make extensive use of the most modern methods of instruction, provide for guests from industry to lecture in their respective fields of specialization, and require active participation of the student in business settings, through field trips, group projects, seminars, and case studies.

As a consequence of growth, both in enrolments and career opportunities, provision has been made for additional specialization within the marketing field. The objective of this change is to bring the student closer to the point where he/she can make an effective contribution to society in his/her chosen field.

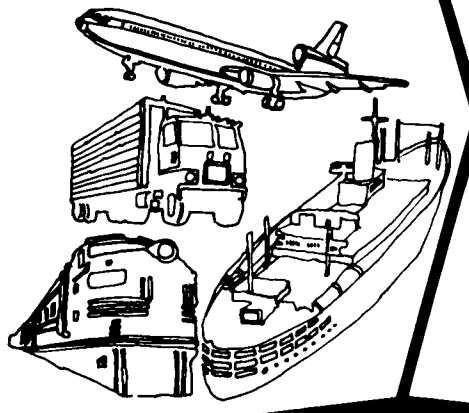
Two options are available in the Marketing program following a common first year. Both of these options lead to careers in fields where the rewards for accomplishment are prompt and substantial.

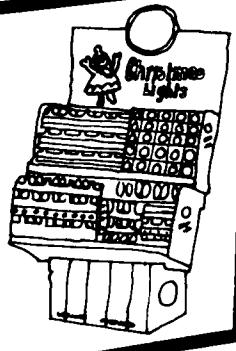
Marketing Management Option

This option prepares students for careers in retailing, which covers a broad spectrum of activities and types of business involved in selling goods to ultimate consumers; in wholesaling where the businesses and activities are concerned with serving industrial customers and retailing firms; in sales and sales management, advertising and sales promotion, product and market development, and marketing research.

Traffic and Transportation Management Option

Traffic and transportation includes both (*a*) the buying of a service for the movement of goods or people, and (*b*) the selling or supplying of transportation facilities for these movements. To achieve these objectives, a firm must employ sound marketing logistics. Students electing this option will specialize in areas that facilitate the smooth flow of traffic. Areas covered are the various transportation modes, their services and equipment; national and international shipments; materials handling; storage; and associated economic implications.





MARKETING MANAGEMENT TECHNOLOGY

BUSINESS MANAGEMENT DIVISION
MARKETING MANAGEMENT TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hrs. per Wk.
10.134	Management in Industry	3
10.139	Economics	3
14.050	Introduction to Data Processing	3
14.182	Office Equipment	3
16.140	Accounting	5
20.180	Marketing	3
22.120	Business Mathematics	4
31.102	Communication	4
	Library and Research	7
		35

Term 2

No.	Subject	MARKET. MGT. OPTION Classroom Hrs. per Wk.
10.239	Economics	3
14.296	Office Systems and Procedures	3
16.240	Accounting	5
16.245	Credit and Collections	3
20.275	Salesmanship	3
20.280	Marketing	3
22.220	Business Statistics	4
31.202	Communication	4
	Library and Research	7
		35

YEAR 2 — *Term 3*

No.	Subject	MARKET MGT. OPTION Classroom Hrs. per Wk.	TRAF. AND TRANSP. MGT. OPTION Classroom Hrs. per Wk.
10.325	Industrial Relations		4
10.360	Business Law	3	3
10.384	Organizational Behaviour		3
14.052	Computers in Business		4
16.342	Marketing Management Accounting I	4	
20.310	Retailing	4	
20.322	Marketing Management	4	
20.323	Sales Management*	4*	
20.331	Modes of Transportation		6
20.332	Transportation Economics		4
20.333	International Trade		3
20.371	Advertising and Sales Promotion	4	
20.372	Consumer Behaviour	3	
20.382	Marketing Research	4	
22.320	Management Engineering I		3
	Library and Research	5	5
		35	35

Term 4

10.460	Business Law	3	3
10.484	Management of Human Resources	4	
16.442	Marketing Management Accounting II	4	
16.443	Management Accounting		4
20.411	Merchandising	3	
20.422	Marketing Management	3	
20.432	Transportation Economics		4
20.434	Transportation Regulation		3
20.435	Distribution Management		3
20.436	Transportation Trends		5
20.437	Marketing Research for Transportation		5
20.482	Marketing Research	3	
20.484	Transportation and Distribution Management*	3*	
20.490	Directed Studies	7	
22.420	Management Engineering II		4
	Library and Research	5	4
		35	35

* Alternative elective: 10.329 and 10.429 Real Estate Management.

General Prerequisite: Graduation from the Selected or Combined Studies Program.
Special Prerequisite: Mathematics 11.
Please refer to page 82 *re* preparatory courses.

Business Management Division

Operations Management

Do you enjoy working with people?

Does solving a problem give you a glow of satisfaction?

Does the idea of changing present systems to improve future performance spark your interest?

Do you want the challenge and variety that a career which embraces both Business and Engineering can give you?

Then come to where the opportunities exist—enrol in the Operations Management Technology. Prepare for a life which will be more and more rewarding from good preparation, through an excellent starting salary, to as far as ambition and energy can take you.

A team of skilled and experienced instructors will help you get started in the combined field of business and engineering—a field which grows ever more fascinating and complex. They will prepare you for a role that is in increasing demand in the 1970's. They will instruct you in the use and application of the highly sophisticated tools and techniques which business needs to be successful. Among these is today's most powerful tool, the computer. It receives special attention in the program.

Although computer programming and its many applications are important, it is but one part of a varied and balanced program. Studies are drawn from both business and engineering subjects and emphasis is given to the human element with courses in the management of human resources and organizational behaviour.

The Engineering subjects are a part of the field of Industrial Engineering, a branch of engineering which deals with analytical techniques which are applied to problem solving. Courses in quantitative methods, work study, and systems and procedures analysis are a key part of the program. Concurrently you will be developing a keen appreciation of the business environment by studying managerial accounting, economics, and business organization. It is because Operations Management encompasses all of the factors vital to an efficiently managed operation —engineering, equipment, people, and business acumen—that the Operations Management graduate, whose studies have been firmly based on these factors, is able to make a significant contribution from the start of his/her employment.

Leaders in business, in industry, and in Government recognize the need for well-trained professionals who are capable of cutting across departmental boundaries; people who are able to speak both the language of business and the language of engineering—and you, the prospective graduate of Operations Management, can meet that need. You can meet it in the widely diverse areas of Production and Inventory Control, Systems and Procedures Design, Method Study, Planning and Scheduling, Facility Location and Layout, Feasibility Studies and Systems Analysis. These are only a sample of the many areas where graduates are employed.

These opportunities can be natural stepping stones to such management positions as Production Co-ordinator, Industrial Engineering Manager, Distribution Manager, Materials Manager, or Plant Manager.

Which will you be?

If all this interests you, if you have a lively and inquiring mind, if you are equally happy with figures, machines, people, and sophisticated techniques, you are assured of an exciting program of studies in preparation for a challenging and successful career, by enrolling in the Operations Management Technology.

BUSINESS MANAGEMENT DIVISION

OPERATIONS MANAGEMENT TECHNOLOGY

YEAR 1 — *Term 1*

		Classroom Hours per Week
14.050	Introduction to Data Processing	4
16.142	Introduction to Financial Accounting	3
22.100	Applied Mathematics and Statistics	5
22.101	Introduction to Operations Management	7
31.101	Communication	3
33.117	Basic Science for Operations Management	3
49.102	Interpretation of Engineering Drawings	2
49.106	Engineering Concepts I	3
	Library and Research	5
		35

YEAR 1 — *Term 2*

10.234	Economics	2
10.285	Organizational Behaviour	2
16.242	Introduction to Managerial Accounting	3
22.200	Applied Mathematics and Statistics	4
22.201	Method Study and Procedure Analysis	7
22.202	Computer Programming—Applied Fortran IV	3
31.201	Communication	3
33.217	Basic Science for Operations Management	3
49.206	Engineering Concepts II	3
	Library and Research	5
		35

YEAR 2 — *Term 3*

10.334	Economics	3
10.371	Management of Human Resources	2
16.348	Cost Accounting for Operations Management	3
22.300	Quantitative Methods	5
22.304	Production Control Management I	5
22.305	Management Information Systems	3
22.306	Industrial Engineering	9
	Library and Research	5
		35

YEAR 2 — *Term 4*

		Before Spring Break	After Spring Break
10.485	Industrial Relations		4
22.400	Quantitative Methods	7	2
22.401	Industrial Engineering Concepts	2	16
22.404	Production Control Management II	6	3
22.405	Management Information Systems	3	
22.406	Industrial Engineering	10	
22.407	Market Research	2	2
22.408	Supervision		3
	Library and Research	5	5
		35	35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisite: Mathematics 11.

Please refer to page 82 *re* preparatory courses.

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Mrs. E. M. S. Sinclair, A.I.M.L.T.	*Medical Laboratory*

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B. SPRUSTON, Department of Nuclear Medicine, St. Paul's Hospital.

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MISS J. WELSH, Inservice Education Co-ordinator.

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MISS D. BRENNAN, Assistant Director of Nursing, and Staff.

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MS. R. CUNNINGHAM.
MS. T. DUCK.
MS. A. JENKINS.
MS. E. LAFEK.
MS. C. LIM AND STAFF.
MS. P. M. WADSWORTH.
MS. H. WILLETTS AND STAFF.

THE WOODLANDS SCHOOL

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MISS D. CURLE, Director of Nursing, and Staff.

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A. RIDGWAY, Head, Department of Health Engineering Services, British Columbia Institute of Technology, Burnaby.

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DR. G. H. BONHAM, Medical Health Officer, City of Vancouver Health Department.

Ex Officio:

J. M. PELTON, Department Head, Department of Environmental Health Services, B.C. Institute of Technology, Burnaby.

S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

Members:

W. BAILEY, Director, Environmental Engineering Division, British Columbia Health Branch.

DR. J. BLATHERWICK, Medical Health Officer, Simon Fraser Health Unit.

L. COPELAND, Public Health Inspector, Burnaby Health Department.

D. DUCKLOW, Boundary Health Unit, British Columbia Institute of Technology Alumni.

M. EWAN, Chief Health Inspector, City of New Westminster Health Department, Representative of Board of Examiners.

C. F. HARTIGAN, Chief Public Health Inspector, Boundary Health Unit, Surrey, President, B.C. Branch, Canadian Institute of Public Health Inspectors.

J. L. HIEBERT, Chief Public Health Inspector, Fraser Valley Health Unit, Mission, Representative of British Columbia Branch, Canadian Institute of Public Health Inspectors.

C. HUTTON, Control Officer, Vancouver City Health Department, Representative of British Columbia Branch, Canadian Institute of Public Health Inspectors.

A. J. LYNCH, Chief Chemist, Chemistry Laboratory, Water Resources Service, Department of Lands, Forests, and Water Resources, Province of British Columbia.

DR. W. MEEKISON, Medical Health Officer, Boundary Health Unit.

K. REYNOLDS, Student Representative, British Columbia Institute of Technology.

DR. J. ROBINSON, Professor, Department of Health Care and Epidemiology, Faculty of Medicine, University of British Columbia.

R. G. SCOTT, Divisional Director, Public Health Inspection Branch, Parliament Buildings, Victoria, Representative of Board of Certification, CPHA.

HEALTH DATA ADVISORY COMMITTEE

Chairperson:

MRS. J. TAYLOR, Director, Medical Record Department, Vancouver General Hospital, Vancouver.

Ex Officio:

MRS. B. J. NELSON, Senior Instructor, Health Data Technology, British Columbia Institute of Technology, Burnaby.

S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

A. RIDGWAY, Head, Department of Health Engineering Services, British Columbia Institute of Technology, Burnaby.

Members:

MRS. S. BARKER, Alumni Representative, Children's Hospital, Vancouver.

MRS. J. BAUER, Health Record Association of British Columbia, Education Committee Representative.

DR. B. C. DIXON-WARREN, British Columbia Medical Association.

MISS I. E. FAIRLEY, Assistant Director of Public Health Nursing, Health Department, Vancouver.

MISS S. MCQUADE, Student Representative, British Columbia Institute of Technology.

MRS. H. MLODZIANOWSKI, Medical Records Consultant, Hospital Programs, Department of Health, Parliament Buildings, Victoria.

N. OTTEN, Lecturer/Pharmacist, Representative, Faculty of Pharmaceutical Sciences, University of British Columbia.

J. W. SHORT, Administrator, Children's Hospital, Vancouver.

MEDICAL LABORATORY ADVISORY COMMITTEE

Chairman:

DR. E. J. BOWMER, Director, Division of Laboratories, Health Branch, Department of Health Services and Hospital Insurance, Vancouver.

Ex Officio:

S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

MRS. M. J. BLAIR, Head, Department of Medical Laboratory Services, British Columbia Institute of Technology, Burnaby.

MRS. G. M. CAMDEN, Chief Instructor, Department of Medical Laboratory Services, British Columbia Institute of Technology, Burnaby.

Members:

C. F. A. CULLING, Associate Professor, Department of Pathology, Faculty of Medicine, University of British Columbia, Vancouver.

MRS. CECILE LARSSON, R.T., Royal Columbian Hospital, New Westminster; Representative of the British Columbia Society of Medical Technologists.

DR. D. B. RIX, Clinical Assistant Professor, Department of Pathology, University of British Columbia; Associate Pathologist, Department of Pathology, Vancouver General Hospital, Representative of the Canadian Medical Association.

DR. F. J. ROBERTS, Associate Microbiologist, Vancouver General Hospital, Representative of the British Columbia Association of Pathologists.

DR. E. W. SHEPHERD, Pathologist, Royal Inland Hospital, Kamloops, Representative of the British Columbia Association of Pathologists.

MEDICAL RADIOGRAPHY ADVISORY COMMITTEE

Chairman:

DR. A. SHERKAT, Department of Radiology, St. Paul's Hospital, Vancouver.

Ex Officio:

DR. W. J. KNICKERBOCKER, C.M.A., C.S.R.T. Committee on Medical Radiological Technician Training.

W. E. NOEL, Head, Department of Radiological Technical Services, British Columbia Institute of Technology, Burnaby.

S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

MISS P. M. ROGERS, Chief Instructor, Department of Radiological Technical Services, British Columbia Institute of Technology, Burnaby.

Members:

DR. J. CHETWYND, President, British Columbia Radiological Society.

A. CLIFFE, Senior X-ray Technician, Kelowna General Hospital.

MISS D. COULBOURN, Student Representative, British Columbia Institute of Technology.

B. GAGNON, Chief Technician, Department of Radiology, St. Paul's Hospital, Vancouver.

R. HARKER, Chief Technician, Department of Radiology, Royal Columbian Hospital, New Westminster.

MISS B. HOFNER, Supervising Technician, Department of Radiology, Victoria General Hospital, Victoria.

DR. E. B. KARATEEW, Acting Director, Department of Radiology, Royal Columbian Hospital, New Westminster.

D. KOCH, Chief Technician, Department of Radiology, Royal Inland Hospital, Kamloops.

J. LOGAN, Chief Technician, Department of Radiology, Lions Gate Hospital, North Vancouver.

MISS A. MCMILLEN, B.C. Division, Canadian Society of Radiological Technicians.

DR. D. K. MUIR, Director, Department of Radiology, Royal Jubilee Hospital, Victoria.

DR. A. PARAMONOFF, Director, Department of Radiology, Lions Gate Hospital, North Vancouver.

DR. R. G. PITMAN, Director, Department of Radiology, St. Paul's Hospital, Vancouver.
J. ROSS, Chief Technician, Department of Radiology, Royal Jubilee Hospital, Victoria.
DR. P. W. ROUSSEAU, Director, Department of Radiology, Kelowna General Hospital, Kelowna.
DR. G. W. RITCHIE, Director, Department of Radiology, Victoria General Hospital, Victoria.
S. M. SMITH, Technical Adviser, Radiology, Department of Health Services and Hospital Insurance, Vancouver.
D. L. THOMPSON, Representative of the British Columbia Health Association; Administrator, Peace Arch District Hospital, White Rock.
DR. G. E. TRUEMAN, Associate Professor of Radiology, University of British Columbia; Acting Director, Department of Radiology, Vancouver General Hospital.
J. WALKER, Technical Supervisor, Department of Radiology, Vancouver General Hospital, Vancouver.
DR. J. H. WRINCH, Director, Department of Radiology, Royal Inland Hospital, Kamloops.

NUCLEAR MEDICINE TECHNOLOGY ADVISORY COMMITTEE

Chairman:

DR. R. T. MORRISON, Head, Division of Nuclear Medicine; Department of Laboratory Medicine, Vancouver General Hospital.

Ex Officio:

MS. B. CLARK, Senior Instructor, Department of Radiological Technical Services, British Columbia Institute of Technology, Burnaby.
W. E. NOEL, Head, Department of Radiological Technical Services, British Columbia Institute of Technology, Burnaby.
S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

Members:

B. G. BIROVCHAK, Section of Nuclear Medicine, Department of Pathology, Shaughnessy Hospital, Vancouver.
DR. D. J. CAMPBELL, Head, Division of Clinical Chemistry, Department of Laboratory Medicine, Vancouver General Hospital.
DR. T. W. DAVIS, Director, Department of Nuclear Medicine, St. Paul's Hospital, Vancouver.
MRS. G. ESTENSEN, Head Technologist, Department of Nuclear Medicine, Royal Columbian Hospital, New Westminster.
MS. S. FISHER, Student Representative, British Columbia Institute of Technology.
DR. S. FISHMAN, Director, Department of Nuclear Medicine, Royal Columbian Hospital, New Westminster.
MRS. A. HARDER, Chief Technologist, Department of Nuclear Medicine, Vancouver General Hospital.
DR. D. M. LYSTER, Division of Nuclear Medicine, Vancouver General Hospital.
DR. E. MINCEY, Director, Radioisotope Section, Metropolitan Biomedical Laboratories.

DR. B. SCHOBER, Head, Department of Nuclear Medicine, Lions Gate Hospital, North Vancouver.

MISS ROSALIND SINCLAIR, Department of Nuclear Medicine, Lions Gate Hospital, North Vancouver.

B. SPRUSTON, Department of Nuclear Medicine, St. Paul's Hospital, Vancouver.

DR. A. E. W. TRITES, Chief of Service, Department of Pathology, Shaughnessy Hospital, Vancouver.

MS. J. WHITBY, Student Representative, British Columbia Institute of Technology.

REGISTERED NURSING ADVISORY COMMITTEE

Chairperson:

MRS. V. HUFFMAN SPLANE.

Ex Officio:

S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

MRS. B. B. KOZIER, Head, Department of Patient Care Services, British Columbia Institute of Technology, Burnaby.

MISS M. SUTHERLAND, Chief Instructor, Department of Patient Care Services, British Columbia Institute of Technology, Burnaby.

Members:

G. C. COPLEY, Student President, British Columbia Institute of Technology.

MRS. W. GORDON, British Columbia Institute of Technology, Nursing Alumnus.

MISS M. M. LONERGAN, Nursing Consultant, Mental Health Services Branch, Department of Health Services and Hospital Insurance, Vancouver.

MS. S. MCKENZIE, Senior Nurse, Simon Fraser Health Unit, Coquitlam, B.C.

MISS E. E. NORDLUND, Consultant, British Columbia Hospital Insurance Service, Victoria.

DR. H. STANSFIELD, British Columbia Medical Association, Vancouver.

REGISTERED PSYCHIATRIC NURSING PROGRAM ADVISORY COMMITTEE

Ex Officio:

S. T. RICHARDS, Director, Health Technology Division, British Columbia Institute of Technology, Burnaby.

MRS. B. B. KOZIER, Head, Department of Patient Care Services, British Columbia Institute of Technology, Burnaby.

MISS S. ERICKSON, Chief Instructor, Mental Health Nursing.

Members:

Miss D. Curle, Director of Nursing, The Woodlands School, New Westminster.

Miss M. Lonergan, Nursing Consultant, Mental Health Services Branch, Department of Health Services and Hospital Insurance, Victoria.

Two representatives of the Registered Psychiatric Nurses Association of British Columbia to be appointed.

Health Division Programs

Health Division

The demand for health services, together with the increasingly complex scientific and social aspects of such services, is opening up new and challenging employment opportunities for a wide range of specialist health technologists.

The Health Technology training programs, developed with the advice and counsel of leaders in the health sciences, and operated in conjunction with health facilities within the community, aim to produce technologists at a level of education and training suited to the need in the health field.

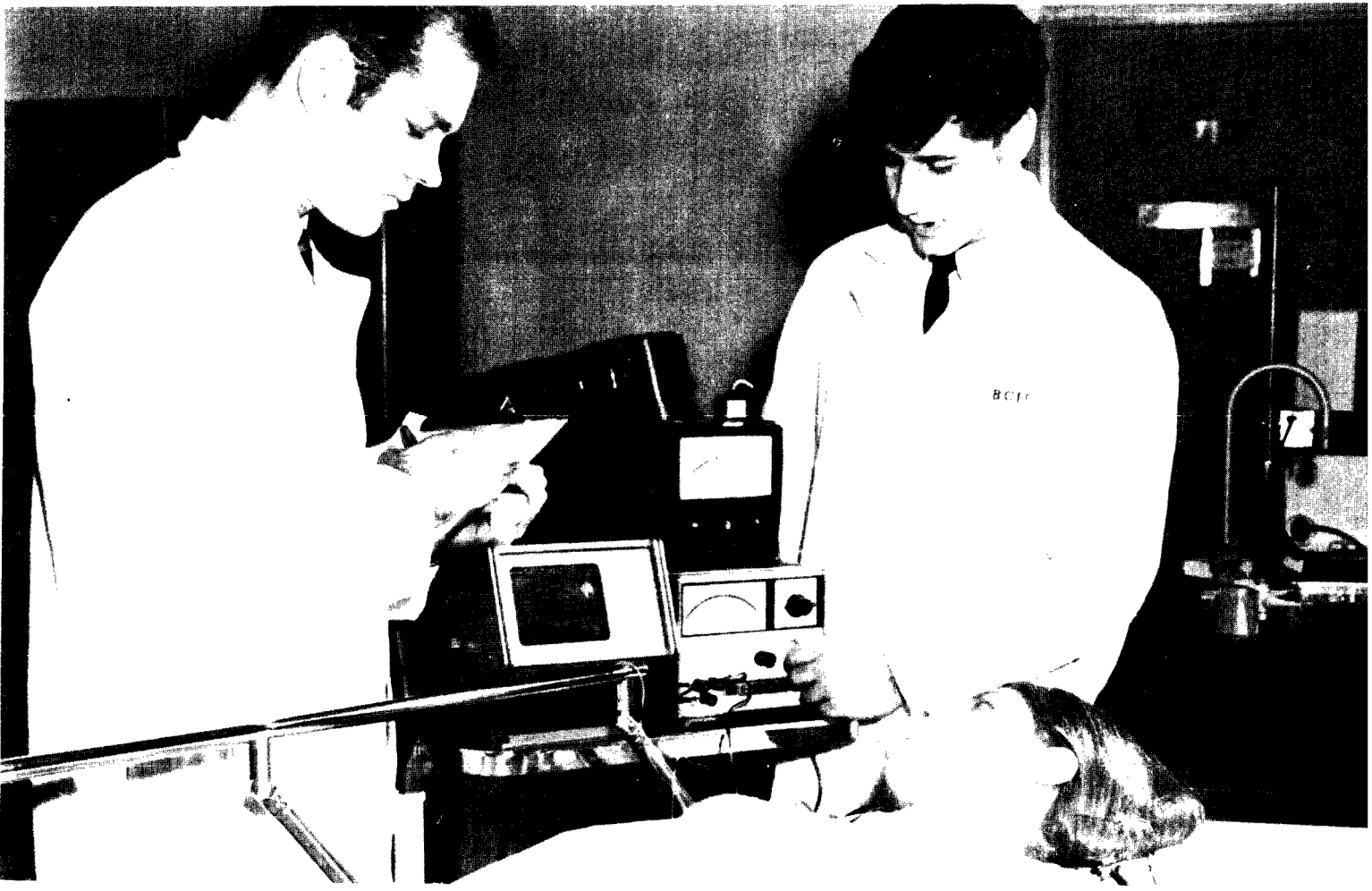
It is intended that the education provided will develop in the graduate a general understanding of the cultural and health environment in which he or she is to work. The training in the specific areas of choice will be sufficiently detailed to provide the skills necessary to the specialty.

It is expected that the health technologist will work at a level between the professional and vocational worker, acting as a junior colleague or in immediate support of the professional whose responsibilities in the field of health have to do with prevention, diagnosis and treatment, or research.

The training of the technologist in the Health Division consists of a combination of study and practice among students of the same specialty, with other student groups at BCIT, and in related practical experience areas of local health agencies, research institutions, and private companies, as appropriate.

Eight training programs, open to male or female applicants, are offered in Health Technology. Details of the programs listed below will be found in the succeeding pages:

Biomedical Electronics.
Environmental Health Technology.
Health Data Technology.
Medical Laboratory Technology.
Medical Radiography.
Nuclear Medicine Technology.
Registered Nursing (R.N.).
Registered Psychiatric Nursing (R.P.N.).



DEPARTMENT OF HEALTH ENGINEERING SERVICES

Biomedical Electronics Technology

In recent years there has been a growing demand for skilled professionals who have been trained in both medicine and engineering. The development of artificial kidneys, hearts, blood vessels, and many other complicated structures for service in the human body has called for a unique combination of interests and aptitudes on the part of those responsible for their design and servicing. The widespread use of medical electronic apparatus for the measurements of blood flow, pulse rate, respiration, nerve activity, and other bodily functions has further increased this demand. This trend will accelerate in the future.

In order to meet the need for technologists in this field, the British Columbia Institute of Technology has developed the Biomedical Electronics Program. The Biomedical Electronics Program, a course of two years' duration, provides the education and training required for the technologist who works in close association with the medical engineers and physicians engaged in operating, maintaining, and designing scientific medical equipment.

In both years of study the student will learn the fundamentals necessary to the understanding of the medical and technical aspects of the specialty. Mathematics and electronics play a large part in the training, as does detailed study of the processes which take place in the human body. During the second year each student spends part of his/her training time working under supervision in a local hospital, research agency, or private company.

Many opportunities are open to the graduate with a Diploma of Technology in Biomedical Electronics. Employment will be found in the fields of research, development and production, sales, installation, operation, and servicing. The technologist may work in a hospital, a university, or for a private company. His/her work and studies bring him/her into close contact with a wide range of workers in the health field.

Persons wishing to enter this new and growing field should be interested in the welfare of people and have an aptitude for things mechanical and electrical.

HEALTH DIVISION

DEPARTMENT OF HEALTH ENGINEERING SERVICES

BIOMEDICAL ELECTRONICS TECHNOLOGY

YEAR 1

Quarter A

No.	Subject	Classroom Hours per Week
30.A03	General Chemistry for Health Technologists	6
31.A01	Technical Writing	3
32.A78	Mathematics (Biomedical Electronics)	8
78.A71	Electronics Principles and Practice	9
98.A03	Human Anatomy and Physiology	4
	Library and Research	5
		35

Quarter B

30.B03	General Chemistry for Health Technologists	6
31.B01	Technical Writing	3
32.B78	Mathematics (Biomedical Electronics)	8
78.B71	Electronics Principles and Practice	9
98.B03	Human Anatomy and Physiology	4
	Library and Research	5
		35

Quarter C

30.C03	General Chemistry for Health Technologists	6
31.C01	Technical Writing	3
32.C78	Mathematics (Biomedical Electronics)	5
32.C79	Numerical Methods and Computing	4
78.C71	Electronics Principles and Practice	9
98.C46	Introductory Microbiology	2
	Tutorial	1
	Library and Research	5
		35

Quarter D

(No classes)

YEAR 2

Quarter E

32.E78	Mathematics (Biomedical Electronics)	5
33.E30	Biophysics	3*
41.E91	Medical Materials	4
43.E75	Methods of Electrical Measurement	4
48.E60	Medical Instrumentation	3
78.E01	Biomedical Electronics	5
78.E71	Electronics Principles and Practice	6
98.E02	Physiology	3*
	Library and Research	5
		35

Quarter F

33.F30	Biophysics	3*
41.F91	Laboratory Workshop	4
43.F76	Digital Principles and Techniques I	7
48.F60	Medical Instrumentation	3
78.F02	Biomedical Electronics	9
78.F71	Electronics Principles and Practice	4
98.F02	Physiology	3*
	Library and Research	5
		35

* Alternate weeks.

Quarter G

No.	Subject	Classroom Hours per Week
33.G30	Biophysics	2
43.G76	Digital Principles and Techniques II	8
48.G60	Medical Instrumentation	4
78.G03	Biomedical Electronics	14
78.G05	Practical Experience in Biomedical Electronics	(4 weeks)
98.G02	Physiology	2
	Library and Research	5
		35

Quarter H

(No classes)

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11, Chemistry 11.

DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES

Environmental Health Technology
(Public Health Inspector Training)

In general, the graduate from this technology will be a specialist in measuring, evaluating, and recommending controls for those elements of our man-modified environment that have unwanted effects on the health of individuals in our modern society. As a specialist, he/she will be a member of a team of environmental and public health workers.

Specifically, the Public Health Inspector will work toward improvement of the environment through education, consultation, persuasion, and, if necessary, the enforcement of health legislation. Clearly, he/she is now expected to deal with more than the control of infectious disease and simple environmental hazards as was the case in the past. In addition, his/her widened scope of activities must be forward-looking, and he/she must provide leadership which will aid the community in realizing long-range plans for the development of an environment leading to optimum health for the community.

To meet the demand for such highly skilled personnel, the Environmental Health Technology offers a balanced curriculum of lecture, laboratory, and field experience. In the program, students will examine the nature of pollution of air, land, and water and the characteristics of societies, both rural and urban, agricultural, and industrial, to become familiar with the many health and safety hazards so produced. In addition, the student will study public accommodation and communicable disease control, insect and rodent control, food-processing control, and recreation and community planning.

To meet these requirements, the candidate entering the program will need a sound understanding of mathematics, chemistry, and physics at the university entrance level. He/she will also have to be a mature, practical person who communicates effectively.

The successful student will receive a diploma of technology. To become a Public Health Inspector he/she must have completed six months' field work in a recognized health unit under the direction of a Medical Officer of Health and a Public Health Inspector. If the candidate meets the requirements of the regulations of the Board of Certification of the Canadian Public Health Association, he/she will become eligible to write the national examination to qualify for a Certificate in Public Health Inspection (Canada). This certificate is recognized by all health organizations in Canada.

Employment may be found in municipal, provincial, and national health departments; in environmental and pollution control departments; in industry; in sewage and water treatment plants; or in any of the agencies interested in industrial health and hygiene or food sanitation.

DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES

ENVIRONMENTAL HEALTH TECHNOLOGY

Quarter A

No.	Subject	Classroom Hours per Week
30.A03	General Chemistry for Health Technologists	6
31.A06	Communication (Public Health)	4
32.A82	Basic Mathematics (Health)	5
33.A12	Physics for Environmental Technology	5
82.A01	Public Health Inspection	5
98.A42	Public Health and Pollution Control Microbiology	5
	Library and Research	5
		35

Quarter B

30.B03	General Chemistry for Health Technologists	5
32.B82	Mathematics (Health)	5
33.B12	Physics for Environmental Technology	5
82.B01	Public Health Inspection	6
82.B02	Food Sanitation	5
98.B42	Public Health and Pollution Control Microbiology	4
	Library and Research	5
		35

Quarter C

30.C03	General Chemistry for Health Technologists	6
32.C82	Statistics (Health)	5
33.C12	Physics for Environmental Technology	5
82.C10	Draughting and Blueprint Reading	4
82.C11	Private Water Supplies and Waste-disposal Systems	6
98.C04	Basic Anatomy and Physiology	4
	Library and Research	5
		35

Quarter D

(No classes)

Quarter E

30.303	Instrumental Analytical Methods	4
82.E02	Food Hygiene	5
82.E04	Public Health Administration	5
82.E11	Hydraulics, Hydrology, Surveying	5
82.E14	Environmental Health and Engineering	5
82.E15	Industrial Hygiene and Toxicology	6
	Library and Research	5
		35

Quarter F

30.303	Instrumental Analytical Methods	4
32.F82	Introduction to Computers	5
82.F05	Environmental Health Relations	6
82.F07	Industrial Chemical Processes	6
82.F08	Public Health Law	6
82.F15	Industrial Hygiene and Toxicology	4
	Library and Research	4
		35

Quarter G

No.	Subject	Classroom Hours per Week
31.G06	Communication (Public Health)	4
41.413	Environmental Analytical Methods	3
82.G06	Applied Environmental Health Personnel Administration	5
82.G11	Municipal Water and Sewage Treatment Systems	5
82.G15	Air Pollution Control	8
98.G48	Communicable Disease Control	5
	Library and Research	5
		35

Quarter H

(No Classes)

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Chemistry 12, Physics 11.

DEPARMENT OF HEALTH ENGINEERING SERVICES

Health Data Technology

(Medical Records)

The importance of documentation in health care is increasing rapidly. Health records are an important tool in providing high quality patient care and in evaluating, on a current and retrospective basis, the standards of care given. In addition to the traditional use by hospitals, other health facilities such as community health centres and physicians' offices are using health record personnel to develop their record-keeping systems. Computerization is becoming an important consideration both as a means of recording data and of linking records. The increasing amount of health information and its use as a means of analysis and a source of valuable statistics, have produced a demand for a specialist in health records—the Health Data Technologist.

To meet this demand, the British Columbia Institute of Technology, in collaboration with the Health Record Association of British Columbia and several affiliated hospitals, has designed the Health Data Technology Program.

Graduates of this program will be granted a diploma of technology. The student will subsequently possess the skills required to meet today's demand for a technologist trained in health record procedures while introducing him/her to the needs of the future.

Health Data Technologists work in the Medical Record Department of a hospital, clinic, or other health agency. They are responsible for encouraging the use of records and preparing, analysing, and preserving the health information required by the hospital or agency, the patient, and the public. In addition, they may be expected to perform medical transcription.

In large hospitals, technologists work under the direction of the Director of Medical Records. However, in small hospitals, they may be called upon to perform all the functions of the department.

The Health Data Technology Program provides two years of instruction in the form of lectures, laboratory exercises and practical experience. In the first year, the student concentrates on the basic health sciences and will become acquainted with a fundamental knowledge of health record science. In the second year, the classroom and laboratory instruction at the Institute will be supplemented by experience in the Medical Record Departments of local hosptials and community health agencies.

A mature personality and a strong sense of responsibility are prerequisites to a successful career in this field. The work involved demands attention to detail, accuracy, and initiative.

HEALTH DIVISION

DEPARTMENT OF HEALTH ENGINEERING SERVICES

HEALTH DATA TECHNOLOGY

YEAR 1 — *Quarter A*

No.	Subject	Classroom Hours per Week
14.A82	Office Equipment	3
31.A02	Communication	3
32.A80	Basic Mathematics (Health)	5
80.A01	Health Record Science	6
80.A22	Concepts of Disease Processes	5
98.A07	Human Anatomy and Physiology	4
98.A45	Microbiology and Epidemiology	4
	Library and Research	5
		35

Quarter B

31.B02	Communication	3
32.B80	Introductory Statistics (Health)	5
76.B02	Introduction to Pharmacology	2
80.B01	Health Record Science	9
80.B22	Concepts of Disease Processes	5
98.B07	Human Anatomy and Physiology	4
98.B45	Microbiology and Epidemiology	2
	Library and Research	5
		35

Quarter C

14.C50	Introduction to Data Processing	5
31.C02	Communication	3
32.C80	Further Statistics (Health)	5
80.C01	Health Record Science	10
80.C04	Medical and Surgical Transcription	3
98.C07	Human Anatomy and Physiology	4
	Library and Research	5
		35

Quarter D

(No classes)

YEAR 2 — *Quarter E*

14.E80	Computer Applications I	4
22.E01	Management Engineering I	4
70.E08	Introduction to Clinical Laboratory Procedures	2
80.E01	Health Record Science	4
80.E02	Health Information Processing	9
80.E04	Medical and Surgical Transcription	4
98.A23	Organizational Psychology	3
	Library and Research	5
		35

Quarter F

14.F80	Computer Applications II	4
22.F01	Management Engineering II	4
40.F80	Building Renovation and Planning Procedures	4
80.F01	Health Record Science	4
80.F02	Health Information Processing	5
80.F04	Medical and Surgical Transcription	4
98.A15	Genetics	2
98.B23	Organizational Psychology	3
	Library and Research	5
		35

Quarter G

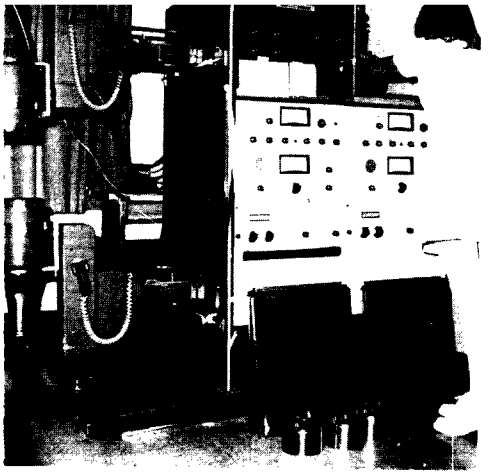
No.	Subject	Classroom Hours per Week
80.G01	Health Data Practicum	30
	Library and Research	5
		35

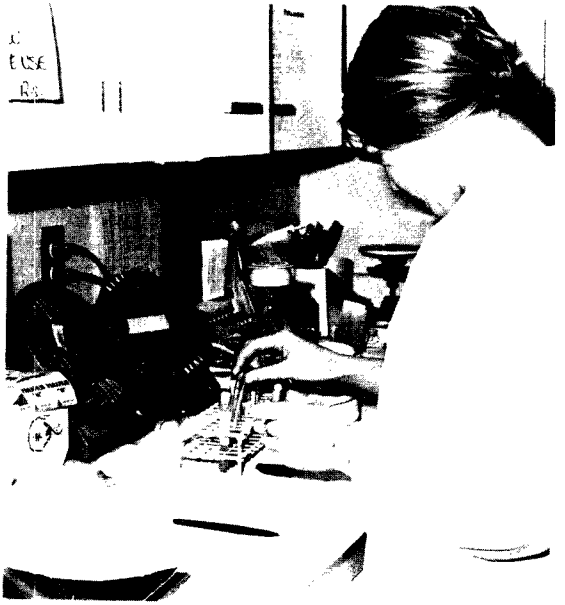
Quarter H

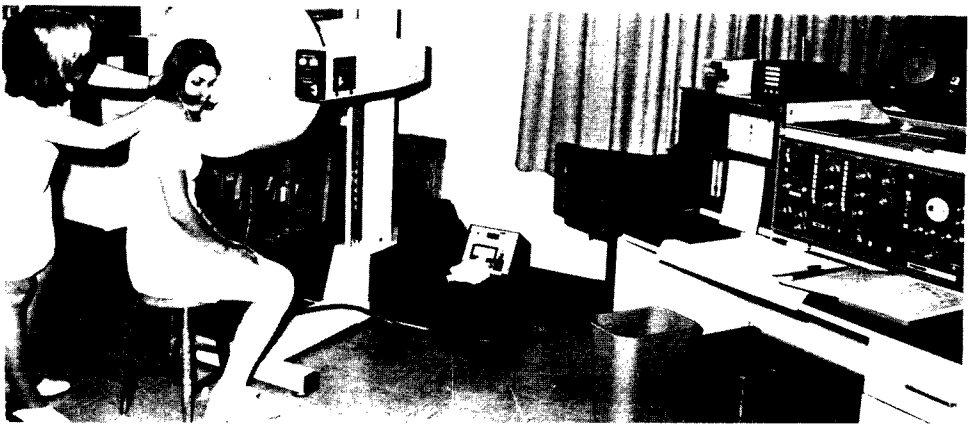
(No classes)

General Prerequisite: Graduation from the Selected or Combined Studies Program

Special Prerequisites: Mathematics 12, Typing 11.







DEPARTMENT OF MEDICAL LABORATORY SERVICES

Medical Laboratory Technology

The medical laboratory technologist, as a member of the health team, performs the many and varied laboratory procedures, the results of which are used by physicians as important aids to the diagnosis and treatment of the patient.

Laboratory screening programs are being developed to alert the physician to disease processes which, though not yet clinically evident, are nevertheless present in the patient. Automation, instead of decreasing the need for the medical laboratory technologist, has created a demand for more highly trained technologists. The increasing use of sophisticated laboratory procedures and the rising demand generally for health services assure a wide range of opportunities for employment.

Medical Laboratory Technology offers a variety of scientific pursuits within the modern hospital, the private clinical laboratory, and the research laboratory. These fields include histopathology, clinical chemistry, hæmatology, microbiology, and immuno-hæmatology. The trained technologist may pursue any one or a combination of these fields after completion of training.

Applicants should have a strong interest in science and be meticulous in their work and habits.

Colour blindness precludes admission to the Medical Laboratory Technology program.

Students spend two years at the Institute. Applicants must have graduated on the Selected or Combined Studies Program or the equivalent with the special prerequisites shown on page 82.

After successful completion of the second year at BCIT, a diploma of technology is granted. The third and final year of training is spent in a hospital laboratory approved by the Canadian Medical Association and the Canadian Society of Laboratory Technologists. At the end of the hospital year the student is eligible to sit the Canadian Society of Laboratory Technologists Examination which leads to the Registered Technologist (the recognized qualification for working as a technologist in a medical laboratory).

HEALTH DIVISION

DEPARTMENT OF MEDICAL LABORATORY SERVICES

MEDICAL LABORATORY TECHNOLOGY

Quarter A

YEAR 1

No.	Subject	Classroom Hours per Week
30.A03	General Chemistry for Health Technologists	6
32.A70	Basic Mathematics (Health)	5
33.A10	Physics for Medical Laboratory Technology	5
70.A01	Medical Laboratory Orientation	3
98.A01	Human Anatomy and Physiology	4
98.A21	Behavioural Sciences	4
	Tutorials	3
	Library and Research	5
		35

Quarter B

14.B50	Introduction to Data Processing	5
30.B03	General Chemistry for Health Technologists	6
32.B70	Calculus (Health)	5
33.B10	Physics for Medical Laboratory Technology	5
70.B01	Medical Laboratory Orientation	3
98.B01	Human Anatomy and Physiology	4
98.B43	Introductory Principles of Immunology	3
	Library and Research	4
		35

Quarter C

30.C03	General Chemistry for Health Technologists	6
31.C08	Communication	4
32.C70	Statistics (Health)	5
33.C10	Physics for Medical Laboratory Technology	5
70.C01	Medical Laboratory Orientation	4
98.C01	Human Anatomy and Physiology	4
98.C43	Introductory Principles of Immunology	3
	Library and Research	4
		35

Quarter D

(No classes)

Quarter E

YEAR 2

70.E02	Instrumental Analysis in Clinical Chemistry	9
70.E03	Hæmatology	4
70.E04	Histology	9
70.E05	Microbiology	9
	Library and Research	4
		35

Quarter F

70.F03	Hæmatology	5
70.F05	Microbiology	9
70.F07	Blood Banking	8
70.F12	Clinical Chemistry	10
	Library and Research	3
		35

Quarter G

No.	Subject	Classroom Hours per Week
70.G03	Hæmatology	5
70.G05	Microbiology	9
70.G07	Blood Banking	8
70.G12	Clinical Chemistry	9
	Library and Research	4
		35

Quarter H

(No classes)

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Chemistry 12, and one other Science 11 or 12.


BC


BCIT

DEPARTMENT OF RADIOLOGICAL TECHNICAL SERVICES

Medical Radiography (X-ray)

Medical Radiography may be defined as "the art of recording an image of the inner structures of the human organism." The chief concerns of the X-ray technician are the taking of X-rays and assisting the radiologist during the various X-ray procedures. Workers in this field must be interested in the welfare of others and possess a strong sense of responsibility.

Medical radiographers are essential members of the health team.

Advances in science and technology are bringing about marked changes in radiology and medical radiography. This course is intended to qualify radiographers who will be in step with the latest developments in this aspect of patient care.

It is emphasized that this occupation is not considered to present any hazard to health. The dangers of radiation are well recognized and rigidly controlled.

The student is required to undergo a two-week period of "orientation" in a hospital X-ray department prior to the commencement of classes at the Institute. Arrangements for this orientation will be made by the Institute.

During the first year, most courses relate directly to radiography but at the same time there are included some subjects selected for their usefulness to the student generally as a health technologist. Time is also spent in affiliated X-ray departments to further familiarize the student with the hospital environment.

In the second year, emphasis is placed solely on the subjects related to the specialty. During this time, students gain experience in the clinical application of medical radiography in hospitals and clinics affiliated with the Institute. While at the hospital the student is under the supervision of the Institute instructional staff. Considerable laboratory work is a feature of both years.

Graduates are required to complete a further year of clinical experience in a hospital X-ray department, approved by the Canadian Medical Association, prior to sitting the certification examination of the Canadian Society of Radiological Technicians. During this year the graduate receives remuneration.

Certification resulting from this program is recognized and accepted in all provinces, the United States, Great Britain, Australia, Switzerland, and many other countries.

Registered technicians may expect to be employed in hospitals and private X-ray clinics. There are also opportunities in the sales division of X-ray equipment and film companies.

HEALTH DIVISION

DEPARTMENT OF RADIOLOGICAL TECHNICAL SERVICES

MEDICAL RADIOGRAPHY TECHNOLOGY

YEAR 1

Quarter A

No.	Subject	Classroom Hours per Week
31.A08	Communication	4
33.A09	Physics of Medical Radiography	5
72.A01	Introduction to Medical Radiography	3
72.A02	Apparatus and Image Recording	5
98.A05	Basic Anatomy and Physiology	5
	Tutorial	6
	Library and Research	7
		35

Quarter B

31.B08	Communication	4
32.B72	Basic Mathematics (Health)	5
33.B09	Physics of Medical Radiography	5
72.B01	Basic Medical Radiography	6
72.B03	Radiographic Anatomy and Physiology	5
98.B05	Basic Anatomy and Physiology	4
	Tutorial	1
	Library and Research	5
		35

Quarter C

33.C09	Physics of Medical Radiography	5
72.C01	Basic Medical Radiography and Clinical Orientation	10
72.C02	Apparatus and Image Recording	4
72.C03	Radiographic Anatomy and Physiology	5
98.A22	Behavioural Sciences	6
	Library and Research	3
	Tutorial	2
		35

Quarter D

(No classes)

YEAR 2

Quarter E

72.E01	Radiographic Technique	8
72.E02	Apparatus and Image Recording	8
72.E05	Radiobiology and Protection	4
76.E01	Fundamentals of Patient Care	6
	Library and Research	4
72.E06	Clinical Experience in Medical Radiography (Hospital)	35*

Quarter F

72.F01	Radiographic Technique	8
72.F02	Apparatus	6
72.F05	Radiobiology and Protection	4
72.F07	Pathology for Medical Radiographers	4
	Library and Research	5
	Tutorial	3
72.F06	Clinical Experience in Medical Radiography (Hospital)	35*

* Alternate weeks.

Quarter G

No.	Subject	Classroom Hours per Week	
72.G01	Radiographic Technique	12	
72.G07	Pathology for Medical Radiographers	4	
98.C41	Microbiology and Epidemiology	6	*
	Tutorial	3	
	Library and Research	5	
72.G06	Clinical Experience in Medical Radiography (Hospital)	35*	

Quarter H

(No classes)

* Alternate weeks.

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, two Science 11's, one Science 12 (Physics, Chemistry, or Biology).

DEPARTMENT OF RADIOLOGICAL TECHNICAL SERVICES

Nuclear Medicine Technology

Nuclear medicine, "the application of radioactive materials to the diagnosis and treatment of patients," is a field of medicine that is undergoing rapid growth and development. A demand exists for well-educated and properly trained technologists. To meet this demand the British Columbia Institute of Technology offers a two-year course which prepares graduates to function as technologists in a Nuclear Medicine department.

Radioactive species of atoms, referred to as radionuclides, emit radiation which permits their detection and measurement by utilization of special equipment. Radionuclides can be introduced into the chemical structure of a large variety of compounds. This provides a means of investigating normal and abnormal functions of specific chemical and physical processes in the human body. Many of these sensitive and specific tests are unique and greatly facilitate the diagnosis of disease.

In the first year, the student studies some subjects specific to the field and others intended to broaden his/her general cultural and technological background. These studies prepare him/her for the specialization to follow.

During the second year, emphasis is placed on subjects relevant to Nuclear Medicine Technology. The Institute is equipped with a laboratory containing facilities and equipment commonly used in Nuclear Medicine. Clinical applications are studied in the laboratory and Nuclear Medicine facilities in the hospitals affiliated with the Institute.

On completion of the course, the graduate is granted a diploma of technology. Graduates are eligible to sit the certification examination in Nuclear Medicine Technology of The Canadian Society of Radiological Technicians. This certification is recognized in all provinces. Employment will be found in hospitals, private laboratories, and institutions involved in research.

Nuclear Medicine Technologists should have a liking for work of a technical nature. They must be meticulous in habits and possess a strong sense of responsibility. A desire to be of service to others is essential.

HEALTH DIVISION

DEPARTMENT OF RADIOLOGICAL TECHNICAL SERVICES

NUCLEAR MEDICINE TECHNOLOGY

YEAR 1 — *Quarter A*

No.	Subject	Classroom Hours per Week
30.A03	General Chemistry for Health Technologists	6
31.A08	Communication	4
32.A74	Basic Mathematics (Health)	5
33.A05	Basic Physics for Nuclear Medicine	5
70.A09	*Clinical Laboratory Orientation*	3
98.A01	Human Anatomy and Physiology	6
	Tutorial	3
	Library and Research	3
		35

Quarter B

30.B03	General Chemistry for Health Technologists	6
32.B74	Statistics (Health)	5
33.B05	Radioactivity	5
70.B09	Clinical Laboratory Orientation	3
74.B07	Introduction to Nuclear Medicine	3
98.B01	Human Anatomy and Physiology	6
	Tutorial	3
	Library and Research	4
		35

Quarter C

30.C03	General Chemistry for Health Technologists	6
32.C74	Calculus (Health)	5
33.C05	Measurement of Radioactivity	5
74.C07	Introduction to Nuclear Medicine	3
76.C02	*Fundamentals of Patient Care*	4
98.C41	Microbiology and Epidemiology	3
	Tutorial	4
	Library and Research	5
		35

Quarter D

(No classes)

YEAR 2 — *Quarter E*

33.E05	Measurement of Radioactivity	6
74.E04	Applied Physiology in Diagnosis and Therapy	14
74.E06	Pathology for Nuclear Medicine Technologists	4
74.E08	Imaging	5 *
	Tutorial	2
	Library and Research	4
74.E05	Clinical Experience in Diagnostic and Therapeutic Procedures	35*

Quarter F

74.F02	Radiobiology and Protection	4
74.F04	Applied Physiology in Diagnosis and Therapy	17
74.F06	Pathology for Nuclear Medicine Technologists	2
98.A24	Behavioural Sciences	6 *
	Tutorial	1
	Library and Research	5
74.F05	Clinical Experience in Diagnostic and Therapeutic Procedures	35*

* Alternate weeks.

Quarter G

No.	Subject	Classroom Hours per Week
14.G51	Computer Applications	6
74.G02	Radiobiology and Protection	4
74.G04	Applied Physiology in Diagnosis and Therapy	14
98.B24	Behavioural Sciences	3*
	Tutorial	3
	Library and Research	5
74.G05	Clinical Experience in Diagnostic and Therapeutic Procedures	35*

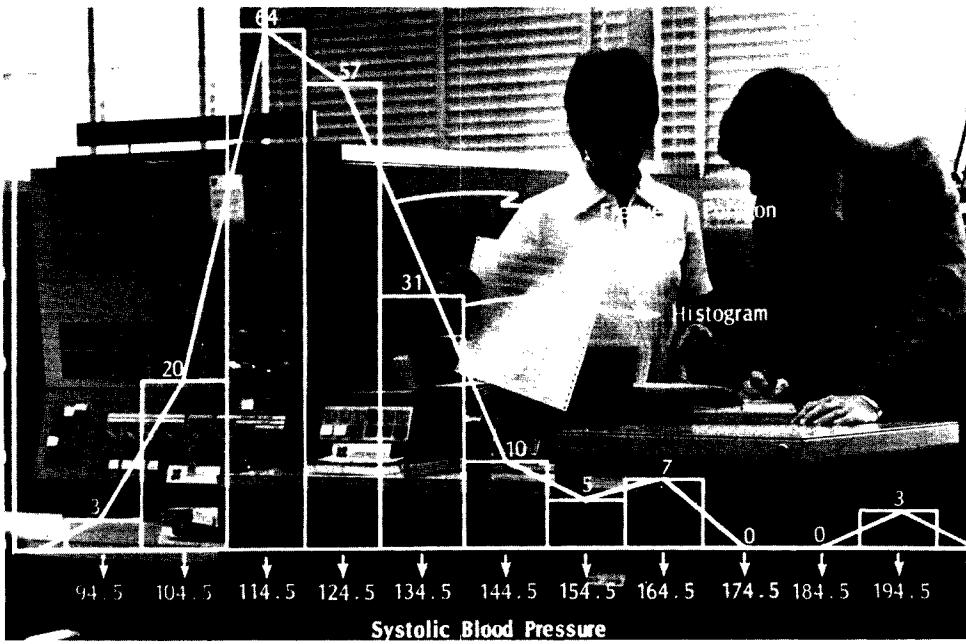
Quarter H

74.H05	Clinical Experience in Diagnostic and Therapeutic Procedures	35

* Alternate weeks.

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, two Science 11's, Chemistry 12.


64
57
31
20
10
7
5
3
0
0
3
Histogram
94.5
104.5
114.5
124.5
134.5
144.5
154.5
164.5
174.5
184.5
194.5
Systolic Blood Pressure

DEPARTMENT OF PATIENT CARE SERVICES

Registered Nursing

The Registered Nursing Program offers a student a two-year course of studies, including hospital and community experience which leads to graduation as a qualified nurse and the eligibility to write the professional nursing examinations in order to obtain an R.N. If an applicant has reason to believe that the Registered Nurses Association of British Columbia will not admit him/her because for example, he/she may have a criminal record, the applicant should check with the Registered Nurses Association before beginning studies in the nursing program. The program is open to men and women and neither age nor marital status are primary factors in the selection of candidates.

Two classes are enrolled each year, one in the spring and one in the fall. Advised date of application, January 2 to May 31 for September; August 1 to December 31 for March. Applicants are advised to apply as early as possible within the stated time period. Applications are considered for the current year only. Therefore, unsuccessful applicants must reapply. A personal interview is mandatory prior to final acceptance.

The curriculum includes biological, sociological, and applied sciences. Nursing theory and clinical practice is concurrent and nursing instructors accompany students for selective learning experiences in hospitals and community agencies.

During the two calendar years, the students receive eight quarters of instruction and two vacation periods.

The nursing courses include study and experience in Maintenance of Health (Quarters A and B), Promotion of Health (Quarters C and D), Restoration of Health (Quarters E, F, and G), and Integration of Health (Quarter H). Specific knowledge and skills in areas such as pharmacology, dietetics, and rehabilitation are integrated throughout the curriculum. Modern trends in nursing all age-levels in acute-care settings, extended-care facilities, and community facilities are reflected throughout the curriculum.

Successful candidates in the Nursing Program will be well equipped to function as beginning practitioners in hospitals and analogous facilities in the community.

HEALTH DIVISION

DEPARTMENT OF PATIENT CARE SERVICES

REGISTERED NURSING

Quarter A

YEAR 1

No.	Subject	Classroom Hours per Week
76.A20	Nursing I	8
76.A25	Clinical Experience for Nursing I	10
98.A06	Anatomy and Physiology	4
98.A30	Human Development	4
98.A44	Microbiology	4
	Library and Research	5
		35

Quarter B

76.B20	Nursing II	8
76.B25	Clinical Experience for Nursing II	10
98.B06	Physiology	4
98.B16	Medical Genetics	4
98.B30	Human Behaviour I	4
	Library and Research	5
		35

Quarter C

76.C30	Nursing III	8
76.C35	Clinical Experience for Nursing III	10
98.C06	Pathophysiology	4
98.C30	Human Behaviour II	4
98.C44	Principles of Immunology and Hypersensitivity	4
	Library and Research	5
		35

Quarter D

76.D26	Physical Fitness	2
76.D30	Nursing IV	12
76.D35	Clinical Experience for Nursing IV	14
	Library and Research	5
		33

Quarter E

YEAR 2

31.E04	Modern Literature	4
76.E30	The Childbearing Family	10
76.E35	Experience with the Childbearing Family	16
	Or	
76.E39	Ambulatory Care	5
76.E40	Mental Health Nursing	5
76.E44	Clinical Experience for Ambulatory Care	8
76.E45	Experience for Mental Health Nursing	8
	Or	
76.E50	Medical-Surgical Nursing	10
76.E55	Experience for Medical-Surgical Nursing	16
	Library and Research	5
		35

Quarter F

No.	Subject	Classroom Hours per Week
31.F04	Modern Literature	4
76.E30	The Childbearing Family	10
76.E35	Experience with the Childbearing Family	16
	Or	
76.E39	Ambulatory Care	5
76.E40	Mental Health Nursing	5
76.E44	Clinical Experience for Ambulatory Care	8
76.E45	Experience for Mental Health Nursing	8
	Or	
76.E50	Medical-Surgical Nursing	10
76.E55	Experience for Medical-Surgical Nursing	16
	Library and Research	5
		35

Quarter G

	Elective	3
	And	
76.E30	The Childbearing Family	10
76.E35	Experience with the Childbearing Family	16
	Or	
76.E39	Ambulatory Care	5
76.E40	Mental Health Nursing	5
76.E44	Clinical Experience for Ambulatory Care	8
76.E45	Experience for Mental Health Nursing	8
	Or	
76.E50	Medical-Surgical Nursing	10
76.E55	Experience for Medical-Surgical Nursing	16
	Library and Research	5
		34

Quarter H

76.H70	Advanced Nursing	6
76.H75	Experience for Advanced Nursing	24
		30

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisite: Chemistry 11, Chemistry 12, or Biology 12.

FIRST FLOOR

DEPARTMENT OF PATIENT CARE SERVICES

Registered Psychiatric Nursing

The Registered Psychiatric Nursing Program offers the student a two-year course of studies and selected clinical experiences which lead to graduation as a psychiatric nurse. Graduates are eligible for registration as a psychiatric nurse in the Province of British Columbia.

The program is open to men and women. Age and marital status are not primary factors in the selection process. A physical examination and an interview are required prior to acceptance into the program. A limited number of registered nurses who wish increased skill in psychiatric nursing will be considered as applicants to the second year of the program.

Two classes a year are enrolled, one in September and one in March. Advised date of application, January 2 to May 31 for September; August 1 to December 31 for March. Applicants are advised to apply as early as possible within the stated time period. Applications are considered for the current year only. Therefore, unsuccessful applicants must reapply. A personal interview is mandatory prior to final acceptance.

Throughout the two years of the curriculum, both theoretical and clinical nursing courses are given concurrently, supported by core courses from the various physical and behavioural sciences. Studies in Quarters A, B, C, and D are taken with the students in the Registered Nursing Program. Classes are given at the Institute and at the Education Centre at Riverview Hospital. Clinical experience is provided in a variety of health centres, hospitals, and community agencies.

The program aims at preparing graduates with effective interpersonal skill, enabling them to work with people of all ages who have mental health problems or who are mentally retarded.

The graduate is prepared to give direct patient care to people with common health problems. The second year emphasizes the development of effective interpersonal skills. The students learn to observe and to assess immediate behaviour and life situations which are problematic for patients. They develop skills in assisting the individual to solve life problems more effectively.

The graduate will be prepared to practise direct patient care in a variety of community, hospital, and mental health facilities. In more complex situations, he/she will work with guidance from more experienced practitioners.

HEALTH DIVISION

DEPARTMENT OF PATIENT CARE SERVICES

REGISTERED PSYCHIATRIC NURSING

Quarter A

YEAR 1

No.	Subject	Classroom Hours per Week
76.A20	Nursing I	8
76.A25	Clinical Experience for Nursing I	10
98.A06	Anatomy and Physiology	4
98.A30	Human Development	4
98.A44	Microbiology	4
	Library and Research	5
		35

Quarter B

76.B20	Nursing II	8
76.B25	Clinical Experience for Nursing II	10
98.B06	Physiology	4
98.B16	Medical Genetics	4
98.B30	Human Behaviour I	4
	Library and Research	5
		35

Quarter C

76.C30	Nursing III	8
76.C35	Clinical Experience for Nursing III	10
98.C06	Pathophysiology	4
98.C30	Human Behaviour II	4
98.C44	Principles of Immunology and Hypersensitivity	4
	Library and Research	5
		35

Quarter D

76.D26	Physical Fitness	2
76.D30	Nursing IV	12
76.D35	Clinical Experience for Nursing IV	14
	Library and Research	5
		33

Quarter E

YEAR 2

76.E41	Psychiatric Nursing I	7
76.E46	Experience for Psychiatric Nursing I	18
76.E47	Psychology I	2
	Library and Research	5
		32

Quarter F

76.F41	Psychiatric Nursing II	7
76.F46	Experience for Psychiatric Nursing II	18
76.F47	Psychology II	2
98.F29	Sociology of Mental Health	2
	Library and Research	5
		34

Quarter G

No.	Subject	Classroom Hours per Week
31.G04	Modern Literature	4
76.G11	Theatre Techniques	2
	Or	
76.G26	Recreation and Activity—Nursing Tools	2
	Or	
76.G30	Self Awareness	2
	And	
76.G41	Psychiatric Nursing III	5
76.G46	Experience for Psychiatric Nursing III	18
	Library and Research	5
		34

Quarter H

31.H04	Modern Literature	4
76.H41	Advanced Psychiatric Nursing	6
76.H46	Experience for Advanced Psychiatric Nursing	24
		34

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Registered nurses may apply to enter the second year of the program.

Engineering Division
Instructional Staff

ENGINEERING DIVISION

D. K. BANNERMAN, B.A.Sc., S.M., P.ENG., *Director.*

BIOLOGICAL SCIENCES TECHNOLOGY

R. B. HYDE, B.S.A., M.S., P.AG., *Department Head.*

S. B. J. ANDERSEN, B.A., *Senior Instructor.*
R. S. BERRY, B.S.A., P.AG.
R. N. E. HARGREAVES, DIPL.T.
R. N. HITCHMAN, B.S.A., P.AG.
V. J. MARTENS, B.S.A., M.SC., P.AG.
J. H. MUIR, B.S.A., P.AG., *Senior Instructor.*
G. B. SCHEIBE, B.SC., M.L.A., B.C.S.L.A., C.S.L.A.
J. K. SOUTTER, H.D.F.T.
MISS J. F. WYLIE, B.SC.(HONS.).

BUILDING TECHNOLOGY

K. B. DAVISON, B.ARCH., F.R.A.I.C., *Department Head* (on leave of absence).
J. Y. JOHNSTONE, B.ARCH., DES.R.C.A., M.R.A.I.C., *Acting Department Head*

G. BERKENPAS, *Senior Instructor*
K. F. COLLIER, F.R.I.C.S., R.C. (B.C.) (on leave).
P. FAILES, M.B.A., F.R.I.C.S.
M. E. GUSLITS, B.ARCH., M.R.A.I.C.
G. M. HARDIE, F.R.I.C.S., R.I. (B.C.).
H. E. KUCKEIN, M.R.A.I.C.
J. P. SULLIVAN, B.SC., P.ENG.

CHEMICAL AND METALLURGICAL TECHNOLOGY

R. C. MASON, B.A.SC., P.ENG., B.C.L.ASS., *Department Head*

W. J. BOYGO, B.C.L.ASS.
J. M. CURRIE, B.A.SC., P.ENG., *Senior Instructor.*
J. T. DENLEY, B.SC., P.ENG.(ALTA.).
W. R. IRVINE, B.A., M.SC., P.ENG., *Senior Instructor.*
D. MCKINNON, B.SC.A.(HONS.).
D. J. MCLEOD, A.R.M.T.C., A.I.M.
W. F. ROBERTS, B.A., B.A.SC., P.ENG.

CIVIL AND STRUCTURAL TECHNOLOGY

G. Q. LAKE, B.A.SC., P.ENG., *Department Head.*

A. R. BARREN, B.SC., PH.D., P.ENG.
R. BUTLER, C.ENG., P.ENG., M.I.C.E., M.I.STRUCT.E.
C. L. DOYLEND.
A. J. ELSTON, B.E., P.ENG.
F. R. HOLE, B.A.SC., P.ENG.
F. G. KATZEL, B.SC., M.SC., P.ENG.
W. N. QUARRY, DIPL.T.
R. B. ROBINS, C.ENG., M.I.C.E., P.ENG.
W. V. RUDD, B.E., B.SC., M.I.C.E., P.ENG.
R. C. STARR, B.ENG., M.A.SC., P.ENG., *Chief Instructor.*

ELECTRICAL AND ELECTRONICS TECHNOLOGY

R. E. RIDSDALE, P.ENG., *Department Head*

J. H. CASIMIR, B.A.SC., P.ENG.
R. CHADWICK.
E. I. GASPARD, C.E.T., *Chief Instructor*
T. J. GLAVE, B.SC.(ENG.)., P.ENG.
C. F. GLAZIER, B.SC.(ENG.), P.ENG.
R. W. GUY.
E. G. HANCOCK, DIPL.T., C.E.T. (on leave).
J. A. HOPKINS, *Chief Instructor.*
S. D. HUGHES, B.A.SC., P.ENG., *Chief Instructor.*
K. KAJIWARA, C.E.T.
J. LEIBEL.
E. E. MCCONECHY, B.SC.(ENG.), P.ENG., *Chief Instructor.*
W. F. MIKLAS, DIPL.T., C.E.T.
B. H. MULDER, M.SC.(DELFT), P.ENG.
A. R. MURDOCH, B.A.SC., P.ENG.
R. T. RUSSELL.
E. W. SCRATCHLEY, B.A.SC., M.A.SC., P.ENG., *Chief Instructor.*
J. N. TOMPKIN, B.SC.(ENG.)., P.ENG.
J. E. WARKENTIN, DIPL.ADULTED., C.E.T.

FOREST RESOURCE TECHNOLOGY

V. HEATH, B.S.F., R.P.F., *Department Head.*

G. R. HARRIS, B.A., M.A., *Chief Instructor.*

Forestry Program

D. C. HOLMES, B.A.Sc., M.F., R.P.F., P.ENG., *Chief Instructor.*

N. E. ALEXANDER (on leave).
M. R. ANGELO, B.S.F., M.F.
D. CAMPBELL, DIPL.T.
W. R. CANNON, B.A.
F. CASSETTA, B.Sc.F., R.P.F.
C. W. CHESTNUT, B.A., PH.D.
T. D. CHISHOLM, B.ED.
E. C. CROSSIN, B.S.F., R.P.F., *Senior Instructor.*
J. A. CUTHBERT, B.S.F., R.P.F., *Senior Instructor.*
G. DAYKIN, B.A.Sc., P.ENG.
C. J. DIEBOLD, C.A.M.
S. DROSDEVECH, DIPL.T.
L. HANSEN, DIPL.T.
E. W. HOWARD, M.F.
A. G. JAKOY, B.S.F., M.F., R.P.F. (on leave).
R. J. KERR.
E. KOZIER.
H. LENKO, B.S.F., R.P.F.
H. LYNUM, B.Sc.F., R.P.F.
W. D. MCLAREN, B.Sc., M.Sc.
W. REIMER, DIPL.F.
R. W. REISEN, E.T.I.
J. SIMPSON, B.Sc.F., M.Sc.
E. SIVAK, PH.D.
D. VINK, B.S.F.

Forest Products Program

G. R. HARRIS, B.A., M.A., *Chief Instructor.*

S. BERGHOLD.
H. KETTNER.
B. R. LESLIE.
J. T. NEILSON, B.A.Sc., P.ENG.
G. A. SMOOK, B.S., P.ENG.

INSTRUMENTATION TECHNOLOGY

J. O. HULBERT, M.I.C.E., P.ENG., *Department Head.*

E. H. V. BACK, DIPL.T., C.E.T.
T. W. COGHLAN, DIPL.T., C.E.T.
E. J. KEMP.
J. G. KENYON, P.ENG., *Senior Instructor.*
J. W. SCHOONOVER, DIPL.T., C.E.T.
E. A. UPWARD, DIPL.T., C.E.T.
A. R. WALKER, B.Sc.

MECHANICAL TECHNOLOGY

Department Head to be appointed.

A. P. ADAMO (on leave).
G. T. BENSON.
R. M. BROWN.
E. J. CAIRNS, B.Sc., P.ENG., A.F.R.Ae.S., F.I.Mech.E., M.A.I.I.E.
WM. COOPER, A.S.T.M.E., DIPL. EXC. MAN.
R. O. DARLING, B.Sc., P.ENG.
D. GERLITZ, B.Sc., M.S., P.ENG.
E. GRAHAM, C.E.T.
R. G. GRAHAM, B.Sc., M.A.S.G.R.A.E., P.ENG.
B. E. HORLACHER, DIPL.T., *Senior Instructor.*
J. H. IRVINE, C.E.T.
G. D. JOHNSON, P.ENG., M.I.Prod.E., M.I.Mech.E., C.ENG., *Chief Instructor, Acting Department Head.*
K. JOHNSON, A.S.T.M.E.
W. D. MASON, C.E.T.
R. B. PENNINGTON, C.E.T.
J. R. RABY, B.E., M.S.E., P.ENG., A.M.B.I.M.
S. C. TODD, P.ENG., C.ENG., M.I.Mech.E., F.I.E.D.

MINING TECHNOLOGY

A. H. MANIFOLD, B.Sc., M.A.Sc., P.ENG., *Department Head.*

D. J. HARDIE, H.N.C.

NATURAL GAS AND PETROLEUM TECHNOLOGY

I. M. ANDERSON, M.I.GasE., C.ENG., *Acting Department Head.*
D. A. CAMPBELL, B.A.(Hons.).

SURVEYING TECHNOLOGY

R. I. MCNEIL, B.SURV., B.C.L.S., D.L.S., DIP.A.ED., P.ENG., *Department Head*

G. E. ANDERSON, DIPL.ADULT ED.
G. T. BEDWELL.
J. S. CALDWELL.
D. C. DEANS.
K. ERRINGTON, B.C.L.S., CERT. MIN. SURV.
J. F. FAIRLEY, B.A.SC., P.ENG.
K. FRANKICH, DIPL.ING., M.A.SC.
K. GYSLER, B.ENG., M.ENG., D.L.S., P.ENG., *Senior Instructor.*
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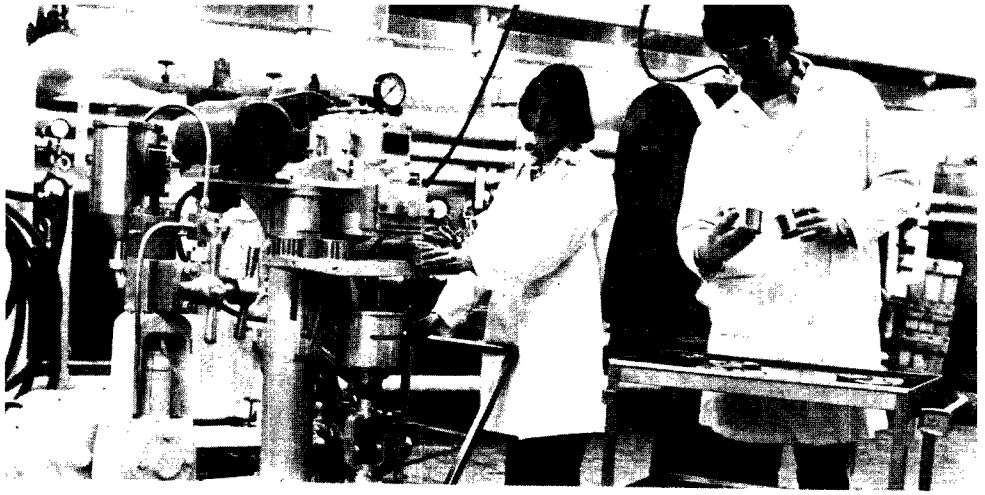
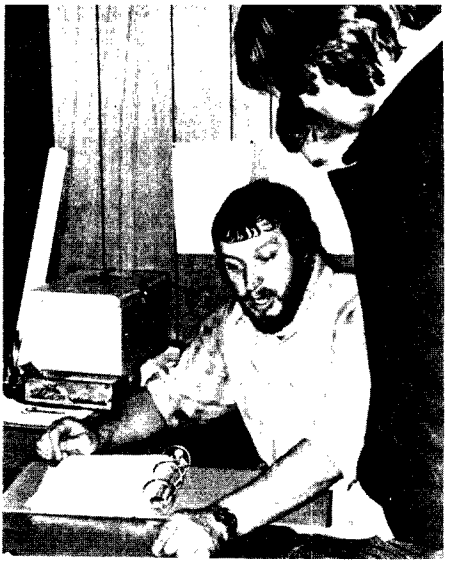
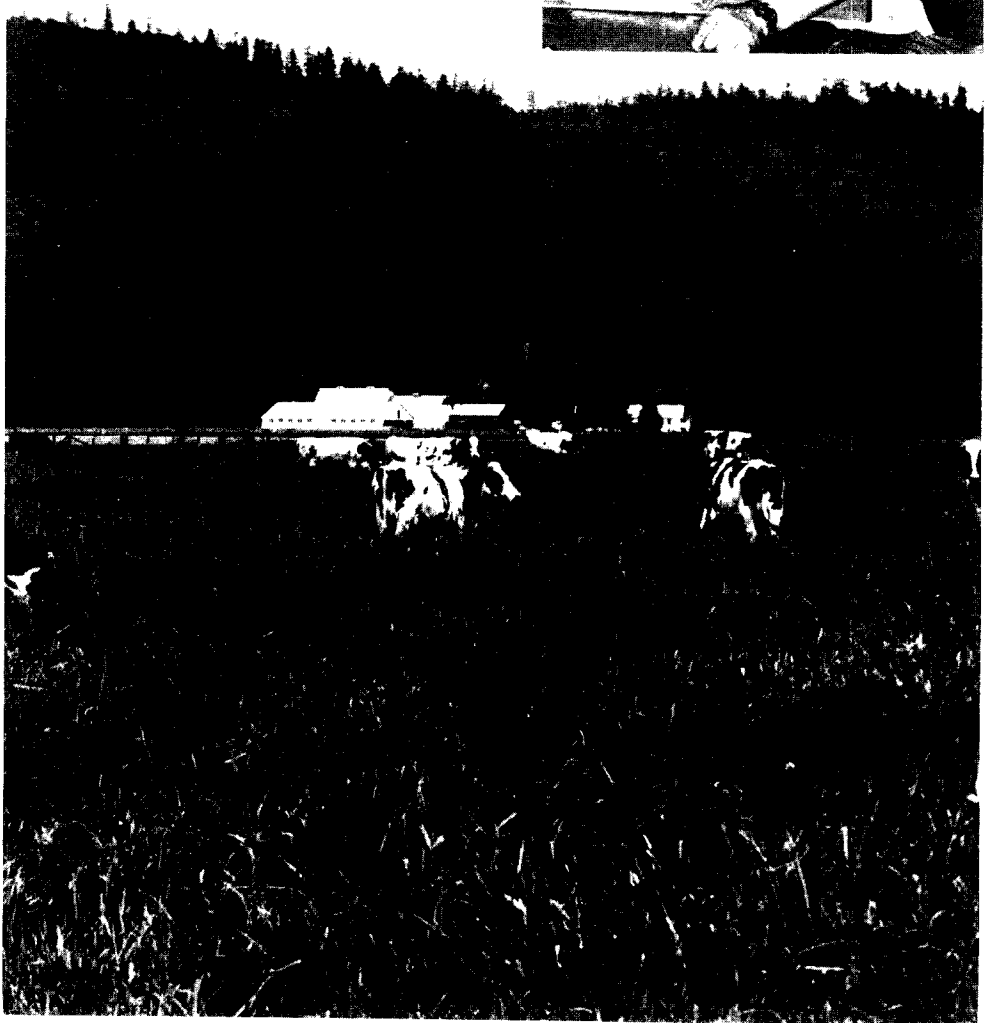


Engineering Division

The ever-broadening and increasingly complex technological base of our society creates a large and continuing demand for competent, highly trained specialists in many technical fields. Involved across the spectrum of activities are theoretical scientists, professionals, technologists, and vocational craftsmen. In this team, technologists play an essential role and find challenging, interesting, and rewarding careers. As listed below, the Institute offers technologist training in traditional engineering fields and several other scientific areas. In certain fields, graduation from the Institute enables one to be certified as an Engineering Technologist with the British Columbia Society of Engineering Technologists upon completion of two years of suitable industrial experience. Students will follow a prescribed course in one of the following technologies:

- Biological Sciences Technology
  - Biological Sciences Program
  - Food Processing Option
  - Food Production Option
  - Landscape Horticulture Option
  - Management in Agriculture (Agri-Management) Program
- Building Technology
  - Architectural Option
  - Economics Option
  - Services Option
- Chemical and Metallurgical Technology
  - Industrial Chemistry Option
  - Physical Metallurgy Option
  - Extractive Metallurgy Option
  - Pollution Treatment Option
- Civil and Structural Technology
  - Civil Elective
  - Traffic Elective
  - Structural Elective
- Electrical and Electronics Technology
  - Electrical Option
  - Telecommunications Option
  - Control Electronics Option
- Forest Resource Technology
  - Forestry Program
    - Forestry Option
    - Fish, Wildlife, and Recreation Option
  - Forest Products Program
    - Pulp and Paper Option
    - Wood Products Option
- Instrumentation and Systems Technology
- Mechanical Technology
  - Production Option
  - Design Option
- Mining Technology
- Natural Gas and Petroleum Technology
- Surveying Technology
  - Survey Option
  - Photogrammetry Option





Biological Sciences Technology

The Biological Sciences Technology prepares men and women for rewarding careers in several applied fields which are directly related to our biological resources. The technology consists of two separate programs: The Biological Sciences Program and the Management in Agriculture (Agri-Management) Program.

Biological Sciences Program

This program is involved with the production and processing of our vital food supply from plant and animal sources and also with the ornamental plants that beautify our landscapes. Thus, the program is divided into three options: Food Processing, Food Production, and Landscape Horticulture.

Food Processing Option

The Food Processing Option provides a thorough knowledge of the basic sciences which leads to more advanced technical subjects related to the effective preservation of food. The student learns to apply knowledge of subjects such as microbiology, food chemistry, and food technology to processes such as canning, freezing, dehydrating, and fermenting.

The graduate in the Food Processing Option is well qualified for employment in the food manufacturing industry; for example, trained technologists are required to perform chemical, physical, and bacteriological tests on food materials during processing, and on the finished packaged goods. The graduate is qualified also to supervise processes within the food manufacturing plant itself. Further employment opportunities exist in government laboratories and inspection services.

Food Production Option

This option offers a thorough grounding in the sciences that are of importance in the production of food from agricultural sources. The student learns to apply knowledge of subjects such as botany, zoology, microbiology, genetics, entomology, and biochemistry to the production of food. In addition to studying plant, animal, and soil sciences, the student becomes acquainted with the analytical and mechanical aspects of modern agricultural production.

The graduate in the Food Production Option has many employment avenues open to him/her. For example, trained technologists are required for the laboratory control of agricultural chemicals, feeds, and fertilizers, and also in the field operations of food-manufacturing concerns. Additional job opportunities exist in inspection services and in government and ndustry research laboratories.

Landscape Horticulture Option

An option that deals with the ornamental plantings that are an important part of residential, commercial, industrial, and park developments. The option includes a basic study of the natural sciences that apply to the fields of floriculture, arboriculture, nursery production, turf management, and landscaping. It includes, also, the techniques of plan production for landscape architectural projects.

The graduates in the Landscape Horticulture Option are prepared for employment as technologists with landscape contractors, horticultural nurseries, and parks and recreation systems, or with landscape architects and associated professionals such as planners.

ENGINEERING DIVISION

BIOLOGICAL SCIENCES TECHNOLOGY

Biological Sciences Program

No.	Year 1 — Term 1 — Subject	Classroom Hrs. per Wk.
30.101	Applied Chemical Principles	6
31.101	Communication	3
32.101	Basic Technical Mathematics	5
33.102	Physics for Biological Sciences	5
44.121	Introductory Microbiology	6
44.122	Biology	5
	Library and Research	5
		35

Term 2

		Food Processing Option Classroom Hrs. per Wk.	Food Production Option Classroom Hrs. per Wk.	Landscape Horticulture Option Classroom Hrs. per Wk.
30.201	Applied Chemical Principles	6	6	6
31.201	Communication	3	3	3
32.246	Statistics I and II	5	5	
33.202	Physics for Biological Sciences	5	5	5
40.208	Landscape Draughting			3
44.201	Food Processing	6		
44.221	Microbiology for Food Processing	5		
44.223	Microbiology for Food Production		5	
44.251	Food Production		6	
44.253	Introductory Botany and Soils			6
44.263	Applied Horticulture			4
51.205	Introduction to Surveying			3
	Library and Research	5	5	5
		35	35	35

	Year 2 — Term 3			
10.730	Industrial Management	3		3
30.303	Instrumental Analytical Methods	5	5	
31.301	Industrial Communication	2	2	2
40.308	Landscape Draughting			3
44.301	Food Processing	5		
44.303	Nutrition for Food Processing	2		
44.311	Quality Control	4		
44.312	Introductory Food Analysis	5	5	
44.341	Mechanics of Machines	4	4	
44.343	Landscape Mechanics			5
44.352	Applied Genetics		4	
44.361	Plant Technology		6	
44.363	Applied Horticulture			6
44.364	Nursery Crop Production			6
44.366	Landscape Structural Detail			5
44.371	Animal Technology		4	
	Library and Research	5	5	5
		35	35	35

Term 4

20.700	Agricultural Business		3	
22.444	Basic Operations Management	2		
32.444	Introduction to Computing	2	2	
42.410	Land Engineering			3
44.401	Food Processing	5		

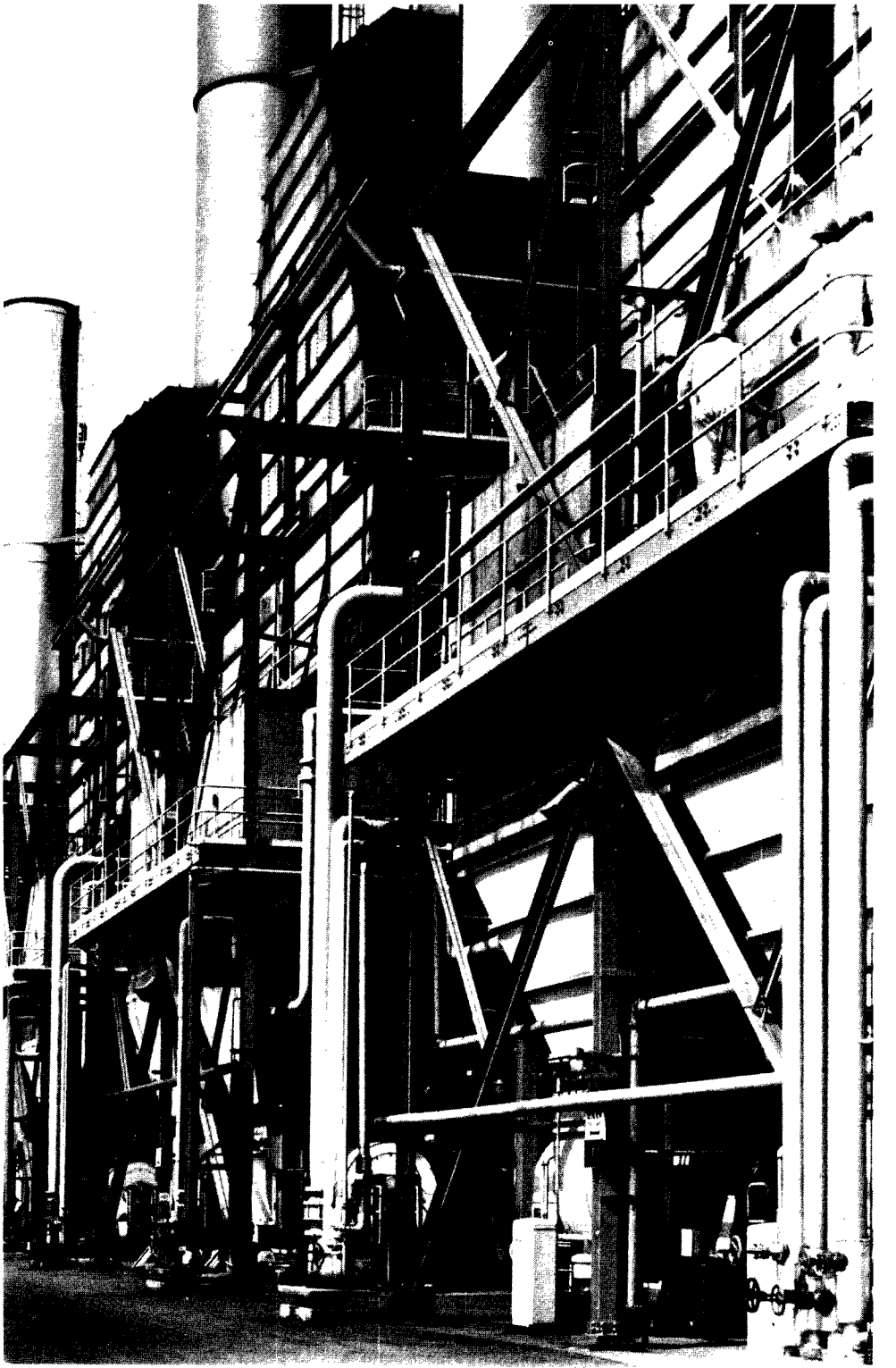
Term 4—Continued

		Food Processing Option	Food Production Option	Landscape Horticulture Option
		Classroom Hrs. per Wk.	Classroom Hrs. per Wk.	Classroom Hrs. per Wk.
44.402	Process Analysis	5	....	....
44.411	Quality Control	4	....	....
44.412	Food Analysis	5	....	....
44.413	Agricultural Analysis	....	5	....
44.414	Experimental Techniques	....	4	....
44.431	Sanitation	4	....	....
44.442	Agricultural Mechanics	....	5	....
44.462	Plant Protection	....	6	6
44.465	Landscape Field Practice	....	....	6
44.466	Landscape Structural Detail	....	....	6
44.467	Advanced Plant Indentification	....	....	2
44.468	Supervisory Practices	....	....	2
44.481	Soil Technology	....	5	5
48.450	Instrumentation	3	....	....
	Library and Research	5	5	5
		35	35	35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Chemistry 11.

Please refer to page 82 *re* preparatory courses.



Biological Sciences Technology

Management in Agriculture (Agri-Management) Program

The agriculture of today is large-scale business. It requires specially trained managers. The Agri-Management Program is designed to provide this training.

Agri-Management involves the effective use of the land, capital, and labour employed in the production and distribution of farm products. Also, it involves the efficient operation of farm-related businesses such as feed, fertilizer, agricultural chemical, and agricultural machinery enterprises.

The program offers a judicious blending of technical agriculture and applied business subjects. For example, it provides a grounding in those basic science subjects which lead to an understanding of the more advanced courses in plant, animal, and soil sciences and agricultural mechanics. Also, it includes those business subjects which provide a sound basis for management decision-making and which lead to specialized courses such as Agricultural Marketing, Agricultural Business Organization and Management, Agricultural Business Law and Taxes, and Agricultural Business Finance and Appraisal.

A summer practicum of supervised on-farm experience is required for all students in the program. This occurs between the first and second years.

The graduate in the Agri-Management Program has broad employment opportunities available to him/her. For example, some graduates will return to the family farm with a greatly broadened understanding of management principles and operational practices. Others will be employed on larger farms, particularly multi-unit operations, as trainees for senior management positions. Still others will find ready employment at the middle-management level in farm-related business firms.

ENGINEERING DIVISION
BIOLOGICAL SCIENCES TECHNOLOGY

Management in Agriculture (Agri-Management) Program

YEAR 1

Term 1

		Classroom Hours per Week
10.131	Management in Industry	3
10.135	Economics	3
16.140	Accounting	5
22.110	Business Mathematics	4
31.101	Communication	3
33.102	Physics for Biological Sciences	5
44.122	Biology	5
44.150	Agricultural Concepts	2
	Library and Research	5
		35

Term 2

10.235	Economics	3
16.240	Accounting	5
22.210	Business Statistics	4
31.201	Communication	3
33.202	Physics for Biological Sciences	5
44.251	Food Production	6
44.290	Agricultural Marketing	3
	Tutorial on Agricultural Concepts	1
	Library and Research	5
		35

A technical report on a summer practicum of on-farm experience will be required for students continuing into second year.

Term 3

44.341	Mechanics of Machines	4
44.352	Applied Genetics	4
44.361	Plant Technology	6
44.371	Animal Technology	4
44.391	Agricultural Business Organization and Management	5
44.392	Agricultural Business Law and Taxes	3
44.393	Agricultural Business Finance and Appraisal	3
44.394	Summer Technical Report	1
	Library and Research	5
		35

Term 4

10.484	Management of Human Resources	4
22.444	Basic Operations Management	2
44.442	Agricultural Mechanics	5
44.462	Plant Protection	6
44.481	Soil Technology	5
44.491	Agricultural Business Organization and Management	5
44.495	Crop and Livestock Management	3
	Library and Research	5
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisite: Mathematics 11.

Please refer to page 82 *re* preparatory courses.

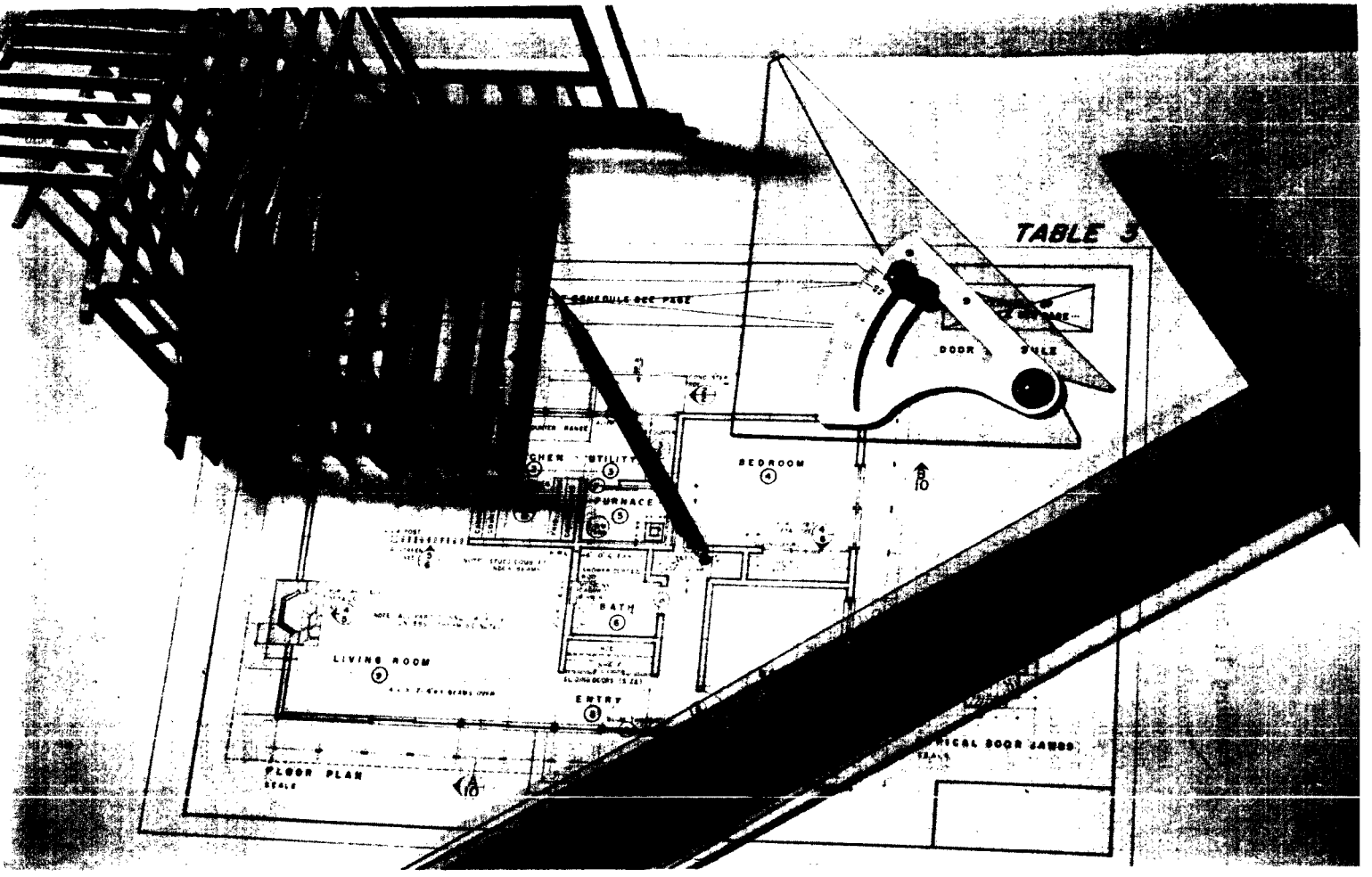


TABLE 3
BEDROOM
4
FURNACE
5
BATH
6
LIVING ROOM
9
ENTRY
8
FLOOR PLAN

Building Technology

Throughout the world, rapidly expanding populations have enormously increased the demand for building operations of all kinds, and the course in Building Technology is designed to give both men and women as sound a preparation for this work as time allows.

First year is common to all students, and in addition to English, mathematics, and physics contains various basic technology subjects. Many of the technological subjects contain both lecture instruction and draughting-room practice, so some students are able to further their education during the summer through jobs with architects and engineers, with construction firms, or doing inspection work for public and private agencies.

In the second year, students may, subject to demonstrated ability in the area of their interest, be given the opportunity to choose one of three options. The Architectural Option is intended for those students who are motivated to work in draughting and design offices. Subjects such as draughting, rendering techniques, model-making, and graphics are organized to enhance expertise in this area.

The Economics Option will be of primary interest to students who wish to concern themselves with costing and evaluation of property and construction, either in the drawing stage or already built. Many of the graduates will become estimators with general and subtrade contractors, preparing bids and checking job costs and progress. Also, in co-operation with the Provincial Government, instruction is given in appraisal and assessment, leading to possible employment in these areas, with public and private agencies.

The Services Option offers subjects designed to extend expertise in the area of Heating, Ventilating, and Air Conditioning. It is an enormous, and growing field. There are opportunities in consulting offices assisting in design, specification writing, and inspection; with contractors doing estimating, shop drawings, and supervision; with suppliers explaining the capabilities and application of equipment and systems; and as technicians with agencies doing testing and balancing of mechanical installations.

Fundamentally, all graduates will understand buildings three-dimensionally, with their architectural, structural, mechanical, and cost implications, and will be able to fill positions which lie between the professional architect, engineer, and contractor on the one hand, and vocationally trained people on the other.

With experience, we envision graduates becoming senior draughting personnel, specification writers, estimators, building inspectors, officials in property management departments, appraisers and assessors, partners in construction organizations, agents for building supplies and equipment, to name the more obvious possibilities.

To students who wish to become registered architects by the apprenticeship system, the Royal Architectural Institute of Canada offers graduates credit for about half the examinations otherwise required.

Similarly, for those wishing to become quantity surveyors, the Canadian Institute of Quantity Surveyors will accept graduates as Probationer Members and give credit in a like manner.

ENGINEERING DIVISION

BUILDING TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
31.101	Communication	3
32.101	Basic Technical Mathematics	5
33.104	Physics for Building Technology	3
40.101	Draughting and Design	3
40.102	Building Construction	7
40.103	Building Services	3
40.104	Construction Specifications and Estimating	2
42.107	Building Structures	4
	Library and Research	5
		35

Term 2

31.201	Communication	3
32.226	Calculus I & Analytic Geometry	5
33.204	Physics for Building Technology	3
40.201	Draughting and Design	4
40.202	Building Construction	6
40.203	Building Services	3
40.204	Construction Specifications and Estimating	2
42.207	Building Structures	4
	Library and Research	5
		35

YEAR 2 — *Term 3*

No.	Subject	ARCHITECTURAL OPTION Classroom Hours per Week	ECONOMICS OPTION Classroom Hours per Week	SERVICES OPTION Classroom Hours per Week
10.731	Industrial Management	3	3	3
40.301	Design	6	----	----
40.302	Building Construction	7	7	7
40.303	Building Services	4	4	4
40.304	Construction Specifications and Estimating	6	6	6
40.305	Building Services Systems	----	----	10
40.306	Land and Construction Economics	----	6	----
42.307	Building Structures	4	4	----
	Library and Research	5	5	5
		35	35	35

Term 4

22.440	Basic Operations Management	2	2	2
40.401	Design	6	----	----
40.402	Building Construction	7	7	7
40.403	Building Services	5	5	5
40.404	Construction Specifications and Estimating	6	6	6
40.405	Building Services Systems	----	----	10
40.406	Land and Construction Economics	----	6	----
42.407	Building Structures	4	4	----
	Library and Research	5	5	5
		35	35	35
51.206	Introduction to Survey (Time taken from other subjects for partial term)	3	3	3

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: English 12, Mathematics 12, Physics 11.

It is recommended that applicants to this technology have some related work experience in, and (or) skills related to, the building construction industry.

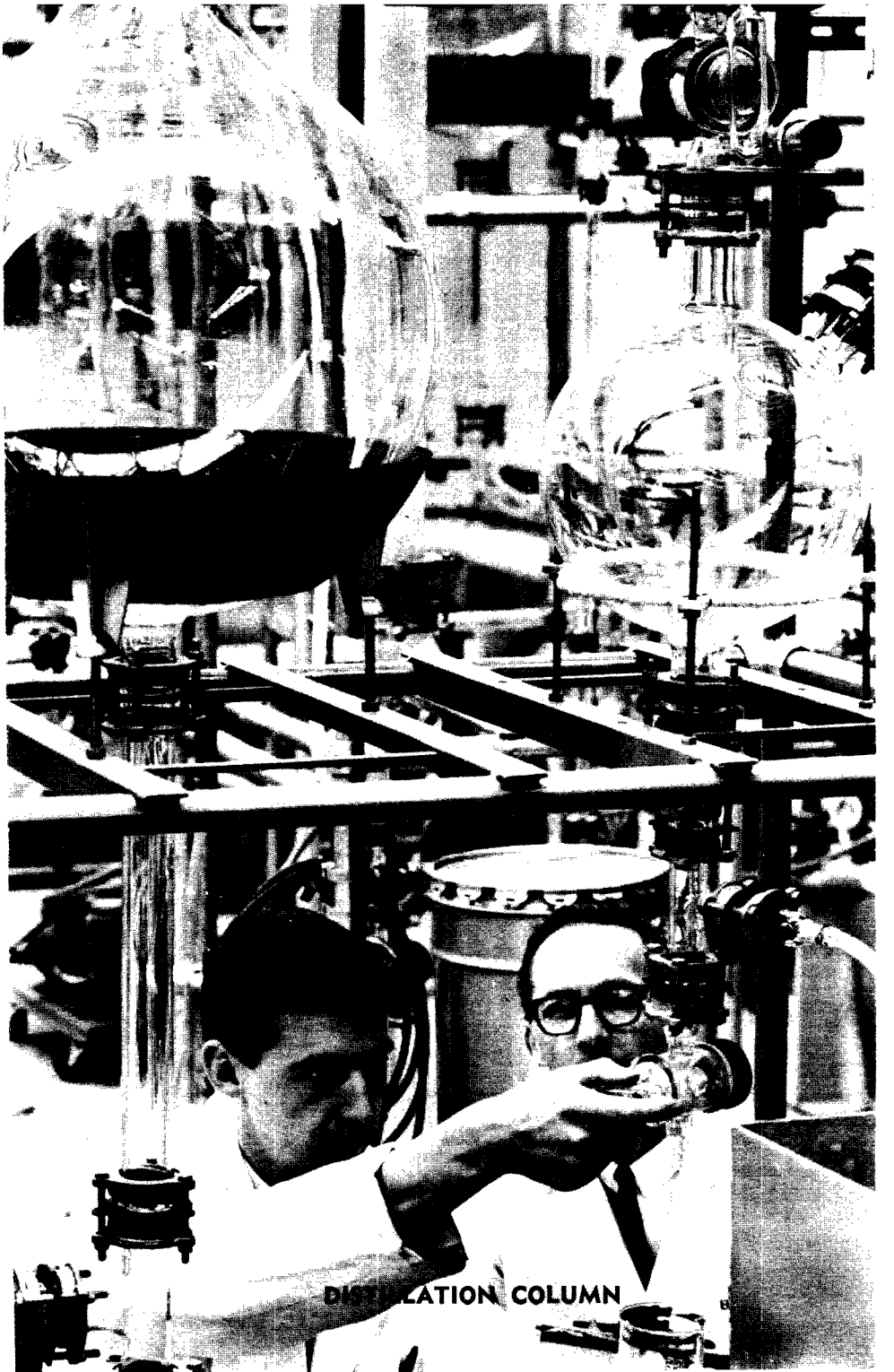
Please refer to page 82 *re* preparatory courses.

Chemical and Metallurgical Technology

The program in Chemical and Metallurgical Technology provides instruction to those men and women wishing to enter the process industries—either in the laboratory, in the production department, in the engineering department, or in the technical sales department. As the technology encompasses a broad range of industries and sciences, the training emphasizes mathematics, physics, and chemistry, and their application to general problems recurring in the chemical process industries, rather than to specific problems peculiar to a single industry. Consequently, the first year is general, but a Unit Processes course and a workshop course are unique to this program.

In the second year the curriculum provides considerable analytical laboratory practice, together with such production and engineering training as unit operations, process dynamics, and unit projects. In addition, the student is given the choice of one of the following options: Industrial Chemistry, Physical Metallurgy, Extractive Metallurgy, or Pollution Treatment. Thus, a graduate will be able to enter the industry of his/her choice in either the sales, production, engineering, laboratory, or waste-management department.

Typical of the chemical process industries that will engage graduates from the program are oil refineries, chlorine and caustic soda producers, beet and cane sugar refiners, cement producers, lime and gypsum producers, plastic and resin producers; copper, lead, zinc, and other metal smelters; aluminum, iron and steel, magnesium, and bronze smelters; metal fabricators and heat treaters; pulp and paper mills, and cellulose chemical producers; and mining companies engaged in both exploration and production. Typical of the positions graduates would seek upon entering industry would be as chemists and analysts in research, commercial, and industrial laboratories, as engineering assistants in engineering departments of industrial and consulting companies, as production supervisor trainees in production plants, as technical sales trainees in the sales departments of chemical process industries or equipment manufacturers, or as specialists in waste disposal and pollution treatment.



DISTILLATION COLUMN

ENGINEERING DIVISION

CHEMICAL AND METALLURGICAL TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
10.730	Industrial Management	3
30.101	Applied Chemical Principles	6
31.101	Communication	3
32.101	Basic Technical Mathematics	5
33.114	Physics for Chemical and Metallurgical Technology	6
41.102	Laboratory Workshop	1½
41.103	Engineering Materials	3½
49.101	Draughting	2
	Library and Research	5
		35

Term 2

30.201	Applied Chemical Principles	6
30.204	Chemical Laboratory Techniques	3
31.201	Communication	3
32.223	Calculus I and II	5
33.214	Physics for Chemical and Metallurgical Technology	6
41.203	Engineering Materials	3½
41.210	Unit Processes	1½
49.204	Draughting	2
	Library and Research	5
		35

YEAR 2 — *Term 3*

No.	Subject	Classroom Hours per Week
30.302	Physical Chemistry	5
30.306	Analytical Chemistry	6
32.306	Calculus III	5
41.341	Unit Operations	6
	Library and Research	5

Plus one of the following options:

INDUSTRIAL CHEMISTRY OPTION

30.301	Organic Chemistry	6
41.320	Unit Project	2

PHYSICAL METALLURGY OPTION

41.304	Physical Metallurgy	6
41.320	Unit Project	2

EXTRACTIVE METALLURGY OPTION

41.307	Extractive Metallurgy	6
41.320	Unit Project	2

POLLUTION TREATMENT OPTION

41.311	Pollution Science	6
48.360	Instrumentation for Chemical and Metallurgical Technology	2

YEAR 2 — *Term 4*

30.406	Analytical Chemistry	6
32.454	Numerical Methods I and Statistics I	5
41.420	Unit Project	2
41.441	Unit Operations	6
	Library and Research	5

Plus a continuation of the third term option.

INDUSTRIAL CHEMISTRY OPTION

22.441	Basic Operations Management	2
30.401	Organic Chemistry	6
47.409	Process Dynamics	3

PHYSICAL METALLURGY OPTION

No.	Subject	Classroom Hours per Week
41.404	Physical Metallurgy	6
41.425	Nondestructive Testing	2
47.409	Process Dynamics	3

EXTRACTIVE METALLURGY OPTION

41.407	Extractive Metallurgy	6
41.408	Ore Analysis	3
47.409	Process Dynamics	2

POLLUTION TREATMENT OPTION

41.411	Pollution Science	6
41.412	Wastewater Treatment	3
41.413	Environmental Analytical Methods	2

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Chemistry 11.

Please refer to page 82 *re* preparatory courses.

Civil and Structural Technology

Civil and Structural Technology, which creates the physical facilities for the civilized environment, is concerned with the design and construction of bridges, highways, railways, airports, dams, power developments, canals, docks, harbours, and buildings of all kinds.

The program is to train technologists who will be immediately capable of playing an effective role in public works, structural design, and heavy construction industry as well as a host of related activities. Much of the training simulates industrial practice which makes the students quite self-reliant in many ways before graduation.

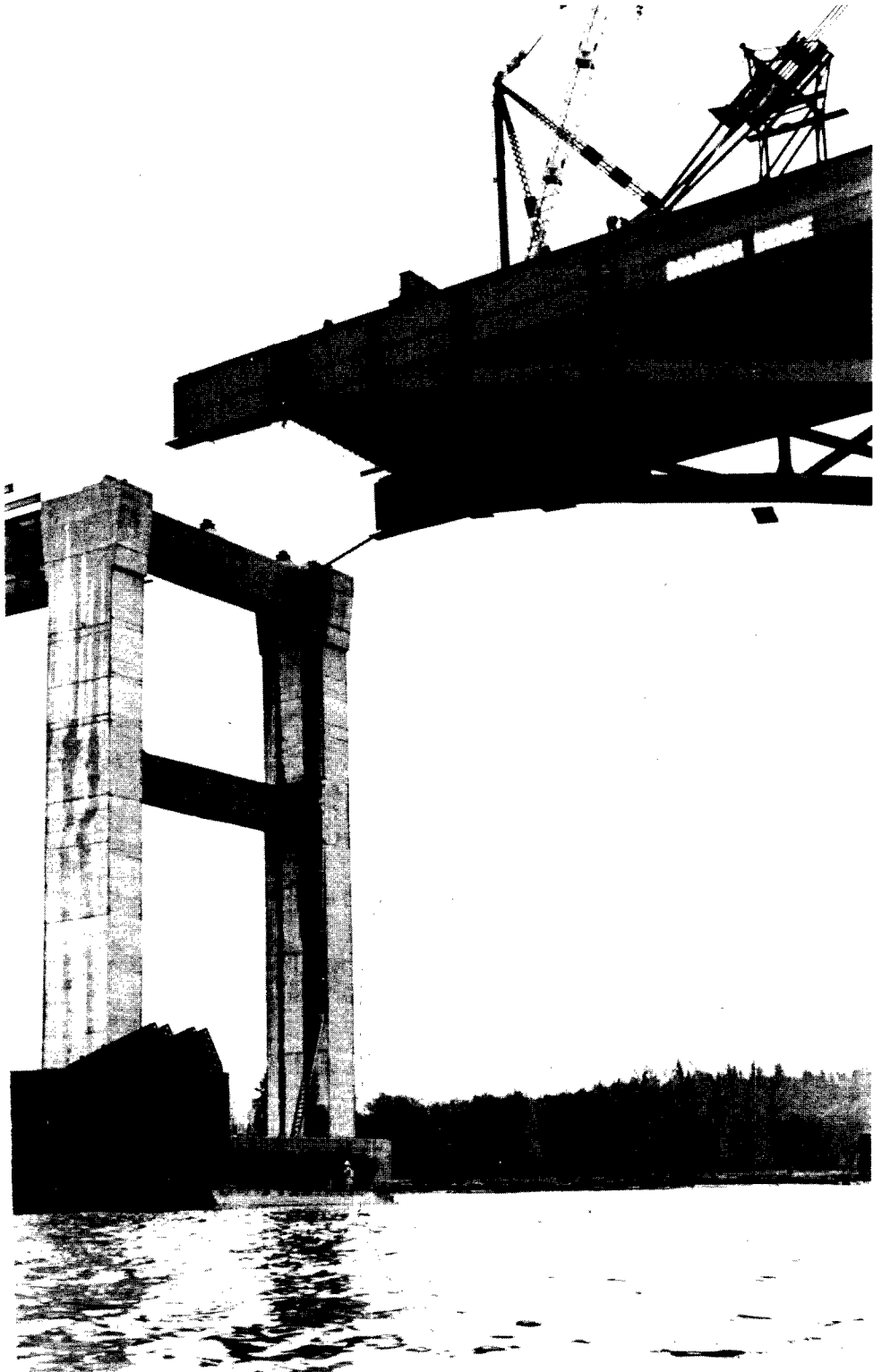
Communications subjects such as Engineering Graphics, Mathematics, written and spoken English, are not only given instructionally but are extensively employed in engineering projects. Projects are often set by specifying objectives alone, leaving the student to explore, with professional consultation, effective ways to successful completion.

Field trips place the student where the action is. The trips are often exploited by instructors to sharpen students' ingenuity and increase critical analysis capabilities. It is important that students seek summer work in the industry.

Graduates have been employed as inspectors, construction supervisors, testing laboratory technicians, design detailers, investigation and construction technologists by municipal, Provincial and Federal departments and by private industry. Many found their own consulting or construction businesses. They have been eagerly sought by engineers, contractors, surveyors, architects, to manage or control projects in the field and accomplish design and analysis in the office. It is common to find a balance of indoor-outdoor work in the civil engineering field which, for the most part, puts the graduate outdoors in the most attractive seasons.

Candidates should be capable in their Mathematics. They should be interested in the development and applications of the physical sciences. They should be articulate and even skilled in the use of the English language. Talents in sketching or drawing can be very useful.

Nothing bars women from this interesting field. Construction sites, design offices, survey parties, management teams, all contain increasing numbers of women in essential roles.



ENGINEERING DIVISION

CIVIL AND STRUCTURAL TECHNOLOGY

YEAR 1 *Term 1*

No.	Subject	Classroom Hours per Week
31.101	Communication	3
32.101	Basic Technical Mathematics	5
33.107	Physics for Civil and Structural Technology	5
42.101	Civil Engineering	12
49.101	Draughting	2
51.109	Surveying	3
	Independent Study and Research	5
		35

Term 2

31.201	Communication	3
32.223	Calculus I and II	5
33.207	Physics for Civil and Structural Technology	5
42.101	Civil Engineering	12
49.202	Draughting	2
51.209	Surveying	3
	Independent Study and Research	5
		35

YEAR 2 *Term 3*

31.301	Industrial Communications	2
32.306	Calculus III	4
42.301	Civil Engineering Design	21
51.309	Surveying	3
	Independent Study and Research	5
		35

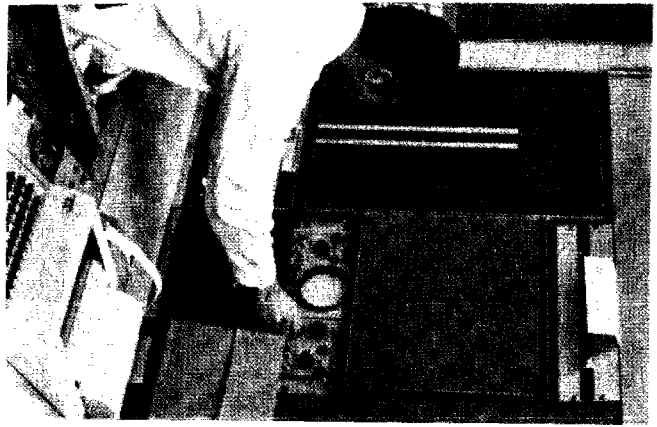
Term 4

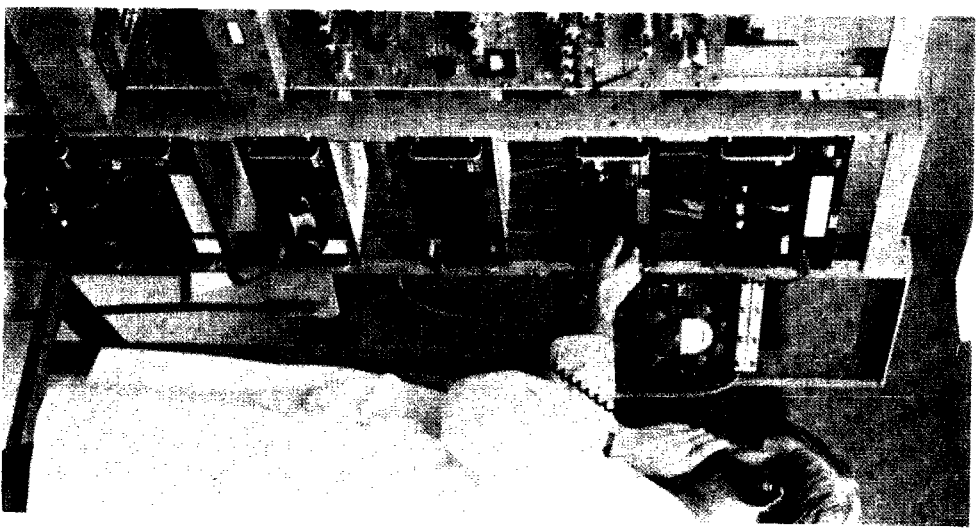
31.401	Industrial Communications	2
32.454	Numerical Methods and Statistics	4
42.301	Civil Engineering Design	21
51.409	Surveying	3
	Independent Study and Research	5
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11.

Please refer to page 82 *re* preparatory courses.





Electrical and Electronics Technology

Society today is dependent upon electrical energy, electronic communications, and electronic controls. The use of electrical and electronic equipment is evident in the factory, office, store, hospital, or home. Travel by airplane or ship could not exist on today's scale without electronic navigational aids.

There is a need for persons trained in the principles and applications of electrical and electronic systems to take their places in the technical team which designs, produces, sells, installs, and maintains these systems. The technologist graduate of the Electrical and Electronics Technology is the anchor-man of this team.

Three options are offered:

1. *Electrical Option*—This is concerned with the generation, transmission, distribution, utilization, and control of electrical energy.

2. *Telecommunications Option*—This deals with the application of electronics to commercial communications and navigational systems.

3. *Control Electronics*—A general electronics program with emphasis placed upon industrial control systems.

The Electrical and Electronics Program has six quarters, three in each of the two years.

The first-year program is common for all options. It should be noted by prospective students that they may be required to attend some of their first-year classes in the evening.

The second-year program for all three options is practically oriented, the last quarter being entirely related to industrial practices.

Throughout the entire two-year period, students spend a good portion of their time in the laboratories and workshops carrying out practical assignments.

Graduates from the Electrical and Electronics Technology are employed in research and development, system design, production, sales, installation, and maintenance in commercial companies, government agencies, and educational institutions.

ENGINEERING DIVISION

ELECTRICAL AND ELECTRONICS TECHNOLOGY

YEAR 1 (common to all three options)

Quarter A

		Classroom Hours per Week
31.A01	Technical Writing	4
32.A90	Basic Mathematics	7
33.A06	Physics for Electrical and Electronics Technology	4
43.A01	Circuit Devices and Techniques	4
43.A02	Circuit Analysis I	6
43.A03	Shop Practice I	5
	Library and Research	5
		35

Quarter B

31.B01	Technical Writing	4
32.B90	Calculus I	7
33.B06	Physics for Electrical and Electronics Technology	4
43.B01	Electronic Circuits I	6
43.B02	Circuit Analysis II	6
43.B03	Shop Practice II	3
	Library and Research	5
		35

Quarter C

31.C01	Technical Writing	4
32.C90	Calculus II	7
33.C06	Physics for Electrical and Electronics Technology	4
43.C01	Electronic Circuits II	5
43.C02	Circuit Analysis III	6
43.C03	Electrical Measurements	4
	Library and Research	5
		35

Quarter D

(No classes)

YEAR 2 Electrical Option

Quarter E

10.E30	Industrial Management	3
32.E90	Transform Calculus	4
43.E04	Digital Techniques I	6
43.E11	Industrial Electronics	5
43.E12	Three Phase Power Circuits	6
43.E13	Electrical Equipment I	6
	Library and Research	5
		35

Quarter F

43.F11	Industrial Controls	6
43.F12	Power Systems Analysis I	5
43.F13	Electrical Equipment II	6
43.F14	Protective Systems	5
43.F15	Electrical Draughting	4
43.F16	Lighting Systems	4
	Library and Research	5
		35

Quarter G

		Classroom Hours per Week
43.G11	Control Systems	8
43.G12	Power Systems Analysis II	6
43.G13	Utility Systems	8
43.G14	Industrial Systems	8
	Library and Research	5
		35

YEAR 2 Telecommunications Option

Quarter E

10.E30	Industrial Management	3
32.E35	Introduction Probability for Telecommunications	4
43.E04	Digital Techniques I	6
43.E21	Electronic Circuits III	5
43.E22	Pulse Circuits	6
43.E35	Telecommunications Principles I	6
	Library and Research	5
		35

Quarter F

43.F24	Digital Techniques II	7
43.F31	Antennas and Transmission Lines	6
43.F33	Telephone Systems I	6
43.F34	High Frequency Techniques	5
43.F35	Telecommunications Principles II	6
	Library and Research	5
		35

Quarter G

43.G31	Navigation Aids	7
43.G32	Radio Systems	9
43.G33	Telephone Systems II	9
43.G34	Electronic Equipment Fabrication	5
	Library and Research	5
		35

YEAR 2 Control Electronics Option

Quarter E

10.E30	Industrial Management	3
32.E90	Transform Calculus	4
43.E04	Digital Techniques I	6
43.E21	Electronic Circuits III	5
43.E22	Pulse Circuits	6
43.E23	Telecommunications Principles	6
	Library and Research	5
		35

Quarter F

43.F24	Digital Techniques II	7
43.F41	Industrial Electronics I	6
43.F42	Feedback Theory	6
43.F43	Electrical Equipment	6
43.F44	Electronic Equipment Fabrication	5
	Library and Research	5
		35

Quarter G

		Classroom Hours per Week
43.G41	Industrial Audio Systems	6
43.G42	Active Filters	6
43.G43	Industrial Control Systems	9
43.G44	Digital Systems	9
	Library and Research	5
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11.

Please refer to page 82 *re* preparatory courses.

Forest Resource Technology

The forest lands of British Columbia constitute the most valuable natural resource, and their utilization provides the greatest single source of income to the Province, supporting almost one-half of our population. The tremendous expansion, both in the forest industry and in the Province's population, is creating demands for more integrated land, forest, and water resource management.

The function of the Forest Resource Technology is to provide technical training in the skills and techniques required for a career in resource management, forest harvesting, and forest utilization. With this purpose in mind, the technology has two separate programs—the Forestry Program, which contains a Forestry Option and a Fish, Wildlife, and Recreation Option; and the Forest Products Program, which contains a Pulp and Paper Option and a Wood Products Option.

A candidate for this technology will enter one of the two programs and can plan to graduate in one of the options offered. The candidate is required to work under conditions that require initiative, efficiency, and good leadership qualities. As technologists, they will be expected to work with a minimum of supervision and ultimately to accept some managerial responsibilities.

Prospective applicants should have completed Grade XII graduation from the Selected or Combined Studies Program, and industrial experience is also considered important. Report writing and a good grounding in basic maths, i.e., arithmetic, algebra, geometry, and trigonometry are very important in all options and candidates should make an effort to upgrade their qualifications in these subjects prior to enrolment. For the prerequisite courses required, please see the curriculum outline for each option on the following pages.

FORESTRY PROGRAM

This program provides training in the skills and techniques required in the harvesting of the forests and in resource management. Required field-trip expenditures may exceed $200.

Forestry—Option I

Candidates have the opportunity to study and qualify for several categories of employment. The main emphasis in the courses offered will be on forest engineering, where he/she will study the organization and supervision of log production, costs, accounting, and logging systems and their applications in British Columbia. The candidate will become knowledgeable in sampling methods for inventory and logging development; in forest protection he/she will learn the basis of fire protection and suppression and of the losses due to insects and disease; in forest science he/she will learn the botanical characteristics of trees and wood and the growth and ecological characteristics of commercial species; in silviculture he/she will study regeneration surveys, planting or seeding, and nursery programs. The course of study includes scaling, forest management, and visits to logging and milling operations.

A further year of fish, wildlife and recreation subjects is available for selected applicants.

Fish, Wildlife, and Recreation—Option II

The management of the fish, wildlife, and recreational resources of the Province is closely associated with that of the forest resources. The integration of these resources and their recreational values into a sound economic managerial program is becoming increasingly important. Government agencies offer a limited number of employment opportunities. For this reason the number of students registered in this option will be restricted and subject to review on a year-to-year basis.

IMPORTANT—*See* page 23 for changed registration dates.

ENGINEERING DIVISION
FOREST RESOURCE TECHNOLOGY
FORESTRY PROGRAM
Forestry and Fish, Wildlife, Recreation Options

YEAR 1 — *Term 1*

No.	Subject	FORESTRY OPTION Classroom Hours per Week	F.W.R. OPTION Classroom Hours per Week
31.101	Commmunication	3	2
32.101	Basic Technical Mathematics	5	5
45.101	Introduction to Forest Land Management	4	4
45.102	Forest Measurement I	6½	7
45.103	Elementary Wood Technology	3½	---
45.106	Photo Interpretation and Mapping	4	4
45.110	Fire Control I	4	---
45.111	Fire Science	---	2
45.120	Forest and Range Botany (A)	---	5
45.125	Public Information Techniques	---	2
	Tutorial	1	1
	Library and Research	4	3
		35	35

Term 2

31.201	Communication	3	4
32.246	Statistics I and II	6	6
44.224	Zoology	---	5
45.202	Forest Measurement II	8	---
45.206	Photo Interpretation and Mapping	4	4
45.220	Forest and Range Botany (B)	6	---
45.224	Public Administration	---	3
45.226	Ecology	3	3
45.227	Geology and Soils	---	5
	Tutorial (and Field Skills)	2	2
	Library and Research	3	3
		35	35

A summer technical report will be required for students continuing into second year.

YEAR 2 — *Term 3*

10.381	Organizational Behaviour	3	3
31.301	Industrial Communication	2	2
45.302	Forest Measurement III	6	---
45.305	Timber Harvesting	5	---
45.308	Roads and Transportation I	6	---
45.313	Forest Pestology I	4	---
45.316	Forest Management	4	---
45.321	Recreational Land Management I	---	5
45.322	Wildlife Management I	---	5
45.323	Fish Management I	---	6
45.326	Community and Habitat Ecology	---	5
45.327	Projects	---	6
45.328	Summer Technical Report	1	2
	Library and Research	4	1
		35	35

Term 4

31.401	Industrial Communication	2	2
45.402	Forest Measurement IV	4	---
45.405	Log Production and Cost Control	5	---
45.408	Roads and Transportation II	5	---
45.410	Fire Control II	4	---
45.413	Forest Pestology II	3½	---
45.416	Forest Management	6½	---
45.421	Recreational Land Management II	---	6
45.422	Wildlife Management II	---	6
45.423	Fish Management II	---	6
45.427	Projects	---	5
45.429	Environmental Inventory Techniques	---	4
45.430	Law Enforcement	---	3
	Library and Research	5	3
		35	35

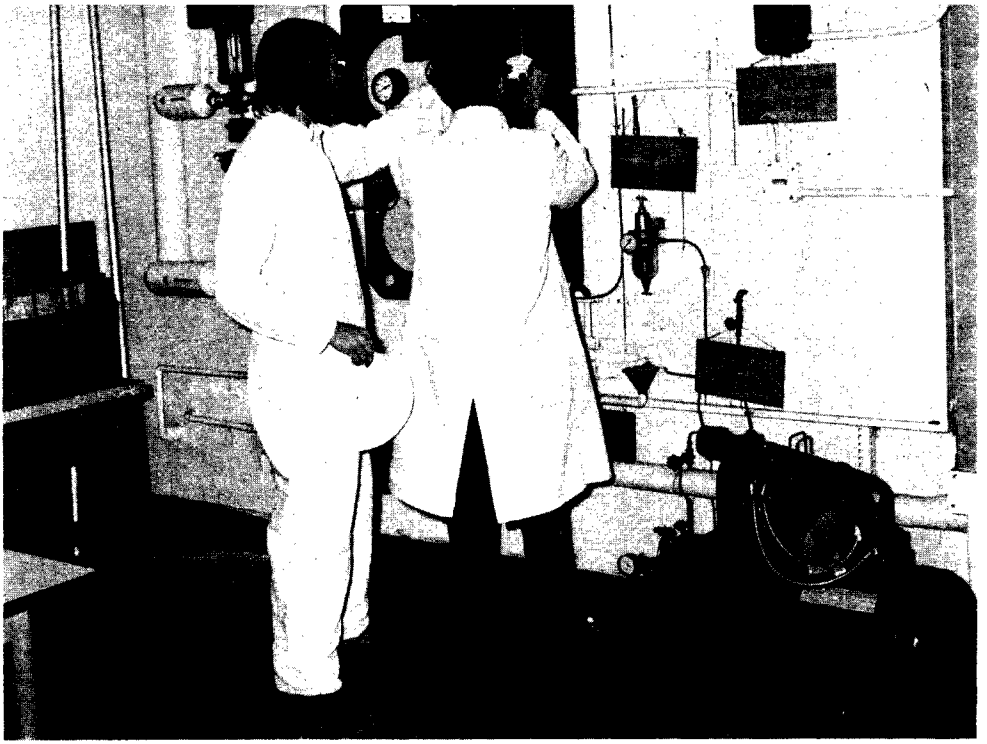
General Prerequisite: Graduation from the Selected or Combined Studies Program.

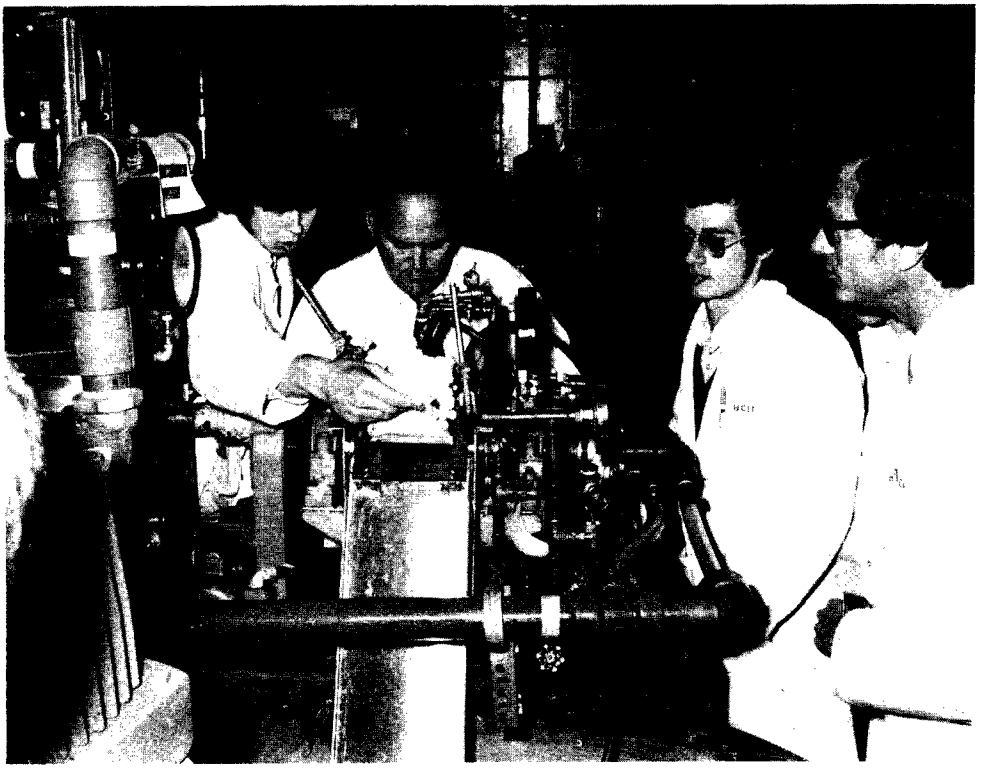
Special Prerequisites:

Fish, Wildlife, and Recreation—Mathematics 12, Biology 11.

Forestry—Mathematics 12 plus a Science 11 (Biology preferred).

Please refer to page 82 *re* preparatory courses.





Forest Resource Technology

FOREST PRODUCTS PROGRAMS

The modern forest industry of British Columbia offers challenging and rewarding employment for conscientious young people of ability and training. The demands of the industry increase yearly as the application of new technology continues in the pulp, newsprint, plywood, sawmill, and particle-board industries.

The objectives of the Forest Products Programs are to qualify technologists for the various manufacturing operations and to prepare them for responsible positions in British Columbia's largest industry. For example, young men and women with a good knowledge of technological advances and their application are needed in plant process operations, plant management, research and development, technical services, and sales.

The two programs of study, wood products and pulp and paper, relate directly to the major manufacturing aspects of the forest products industry. In addition to the basic sciences, the specialized first-term subjects include an introduction to forest science, wood technology, sawmilling, plywood, and pulp and paper manufacture. This is followed by an increasing emphasis on specialization within the student's chosen option.

Summer employment in the industry between the first and second years is considered a valuable adjunct to the training program. Through the co-operation of industry, this is generally available for those students who successfully complete the first year. Prior employment opportunities may be made available to those considering entry into the first year of the program.

Woods Products Option

The Wood Products Option includes the techniques and economics involved in harvesting wood and converting it to usable products such as lumber, laminated beams, plywood, and particle-board. Wood seasoning, wood preservation, and fire-retardant treatments are also covered, as well as the integration of the forest industries for maximum utilization.

Wood Products Option students receive training in wood processing, wood properties, log utilization, wood-products marketing, tallying, quality control leading to a certificate in lumber grading, work study, computer applications, statistics, mechanical and electrical equipment, and kiln-drying. This option is designed to lead to employment in the sawmilling or plywood industry in such areas as management trainee in production, production control, quality control, or sales. Field trips and mill assignments are an essential part of the course.

Pulp and Paper Option

The Pulp and Paper Option students are concerned with the theory and application of technology in mechanical and chemical pulping processes, the bleaching of various pulp types, and the conversion of pulp to end-products such as newsprint, paper, paperboard, and textiles.

The Pulp and Paper Option students receive training in pulp and paper technology and quality control, unit operations, instrumentation, wood chemistry, chemical laboratory techniques, and computer applications.

Pollution abatement technology and techniques constitute an integral portion of the program.

Plant operation and process-control procedures are covered extensively by projects in a well-equipped pilot plant and laboratory facility. This facility is recognized by the Technical Section, Canadian Pulp & Paper Association, as a member mill. Field trips to various related industrial operations are undertaken to augment classroom and laboratory instruction.

To graduates, the industry offers interesting, challenging, and rewarding work, with ample opportunity for advancement in such areas as pulp production, process control, pulp and paper quality control, pollution abatement and control, and research.

Scholarships

Industry-sponsored, two-year, combined scholarship-mill employment awards are now available to selected students entering both the Pulp and Paper and Wood Products Options.

These awards vary in amounts up to $1,200 per student. Information may be obtained from your high school or by contacting the Forest Products staff of the British Columbia Institute of Technology.

ENGINEERING DIVISION

FOREST RESOURCE TECHNOLOGY

FOREST PRODUCTS PROGRAM

No.	Subject	PULP AND PAPER OPTION Classroom Hours per Week	WOOD PRODUCTS OPTION Classroom Hours per Week
	YEAR 1 *Term 1*		
30.101	Applied Chemical Principles	6	....
31.101	Communication	3	3
32.101	Basic Technical Mathematics	5	5
33.118	Applied Physics	5	5
41.107	Engineering Materials	2	2
46.101	Forest Utilization	7	7
46.198	Lumber Tallying	....	2
46.199	Log Utilization	....	4
49.101	Draughting	2	2
	Tutorial	1	1
	Library and Research	4	4
		35	35
	Term 2		
30.201	Applied Chemical Principles	6	....
31.201	Communication	3	3
32.223	Calculus I and II	5	....
32.246	Statistics I and II	....	5
33.218	Applied Physics	5	5
41.207	Engineering Materials	2	2
46.212	Pulp and Paper Technology I	7	....
46.214	Lumber Manufacturing and Grading*	....	13
49.204	Draughting	2	2
	Library and Research	5	5
		35	35

A summer technical report will be required for students continuing into second year.

	YEAR 2 *Term 3*		
14.351	Computer Applications	....	3
22.346	Operations Management I	....	3
30.303	Instrumental Analytical Methods	2	....
31.301	Industrial Communication	2	2
32.304	Statistics I	4	....
41.341	Unit Operations	6	....
43.374	Electrical Equipment Applications	....	4
46.301	Pulp and Paper Technology II	9	....
46.305	Pulp and Paper Testing I	8	....
46.315	Wood Processing I	....	10
46.370	Mill Services I	....	8
	Library and Research	4	5
		35	35
	Term 4		
14.351	Computer Applications	3	....
14.408	Linear Programming	....	3
20.701	Wood Products Marketing	....	4
22.446	Operations Management II	....	4
30.303	Instrumental Analytical Methods	2	....
31.401	Industrial Communication	2	2
46.401	Pulp and Paper Technology III	9	....
32.406	Statistics II	3	....
41.441	Unit Operations	6	....
46.405	Pulp and Paper Testing II	5	....
46.415	Wood Processing II	....	9
46.470	Mill Services II	....	6
49.471	Mechanical Equipment	....	3
	Library and Research	5	4
		35	35

* The attainment of a recognized industrial certificate in lumber grading is required as a condition of graduation.

General Prerequisite: Graduation from the Selected or Combined Studies Program.
Special Prerequisites:
Pulp and Paper Option—Mathematics 12, Chemistry 11.
Wood Products Option—Mathematics 12 and one other Science 11.
Please refer to page 82 *re* preparatory courses.


GRADE 328
WIDTH 168 9
REEL 0 761
TIME 1849
MONTH 12
DAY 12
YEAR 75
INSTRUMENTATION
AUTOMATION
AND
CONTROL
SYSTEMS

Instrumentation Technology
Automation and Control Systems

Automation has been portrayed both as an evil and as a blessing. The rapid growth of this technology over recent years has made many jobs obsolete . . . but has generated far more new jobs in replacement. As a result of automation our material assets have increased and so have our leisure hours. This in turn has created new social patterns and right in the middle of these changes is *Instrumentation*—for instrumentation is the means by which automation is carried out. However, our course in Instrumentation is not concerned with the impact of technology on society. As the following details show, it is devoted entirely to understanding and using the handware involved.

Measurements—Before controls can be applied anywhere, it is first essential to have reliable measurements showing what action is necessary. So students begin with simple measurements such as pressure, temperature, and flow (they are often surprised to find how many different devices can be used). With this firm grounding in basic hardware, studies continue with more advanced measurements as for example pH, gas composition, colour, and so on.

Control—The principle of *negative feedback* is used to convert a measurement signal to a control signal. This involves three separate operations—first the *measurement* is sent to the controller; second this signal is *compared* with the desired value stored in the controller; and third, if an error exists a signal is sent back to the process to make a *correction*. The term negative feedback is used because the correction is always in the opposite direction to the error. An important section of the course is devoted to control loops and control elements.

Computers—Most people associate computers with their hydro bill or their bank statement. In the instrumentation field such machines are sometimes humorously referred to as "number crunchers." During the last decade a new breed of *minicomputer* has been developed for use in plant operation. They are programmed to receive measurements and to send out control signals. They can also be programmed to optimize plant efficiency through power and inventory control, give timely instructions to operators, and provide many other useful services. These watchdogs operate 24 hours a day correcting trouble the very instant it occurs.

Instrumentation is an interdisciplinary science. It covers *mechanics, electronics, fluidics, optics, sonics, and chemistry*. New avenues for employment are arising continuously in design, installation, maintenance, research, and sales. And with experience, there are good opportunities in supervision.

Turn to page 305 for further details of the course material covered by this technology.

ENGINEERING DIVISION

INSTRUMENTATION TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
30.102	General Chemistry	3½
31.101	Communication	3
32.101	Basic Technical Mathemetics	4
33.111	Physics	5
41.104	Engineering Materials	3½
43.172	Electrical Fundamentals	5
48.100	Process Measurements	6
	Tutorial	1
	Reading	4
		35

Term 2

30.202	General Chemistry	3½
31.201	Communications	3
32.223	Calculus I and II	4
33.211	Physics	5
41.204	Engineering Materials	3½
43.272	Electronic Fundamentals	5
48.200	Process Measurements	6
	Tutorial	1
	Reading	4
		35

YEAR 2 — *Term 3*

32.306	Calculus III	4
41.341	Unit Operations	4½
48.300	Process Measurements	6
48.310	Process Control	6
48.320	Computer Techniques	4½
48.330	Instrumention Electronics	4½
	Reading	5½
		35

Term 4

32.454	Numerical Methods I and Statistics I	4
41.441	Unit Operations	4½
48.400	Process Measurements	6
48.410	Process Control	6
48.420	Computer Techniques	4½
48.430	Instrumentation Electronics	4½
	Reading	5½
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11, Chemistry 11.

Please refer to page 82 *re* preparatory courses.

Mechanical Technology

Mechanical Technology encompasses an extremely broad range of industrial activities involving design, construction, installation, and use of machines and mechanical devices of all types, as well as the manufacture of goods in general. It follows that persons qualified in this field can expect challenging and rewarding employment in a wide range of interesting occupations.

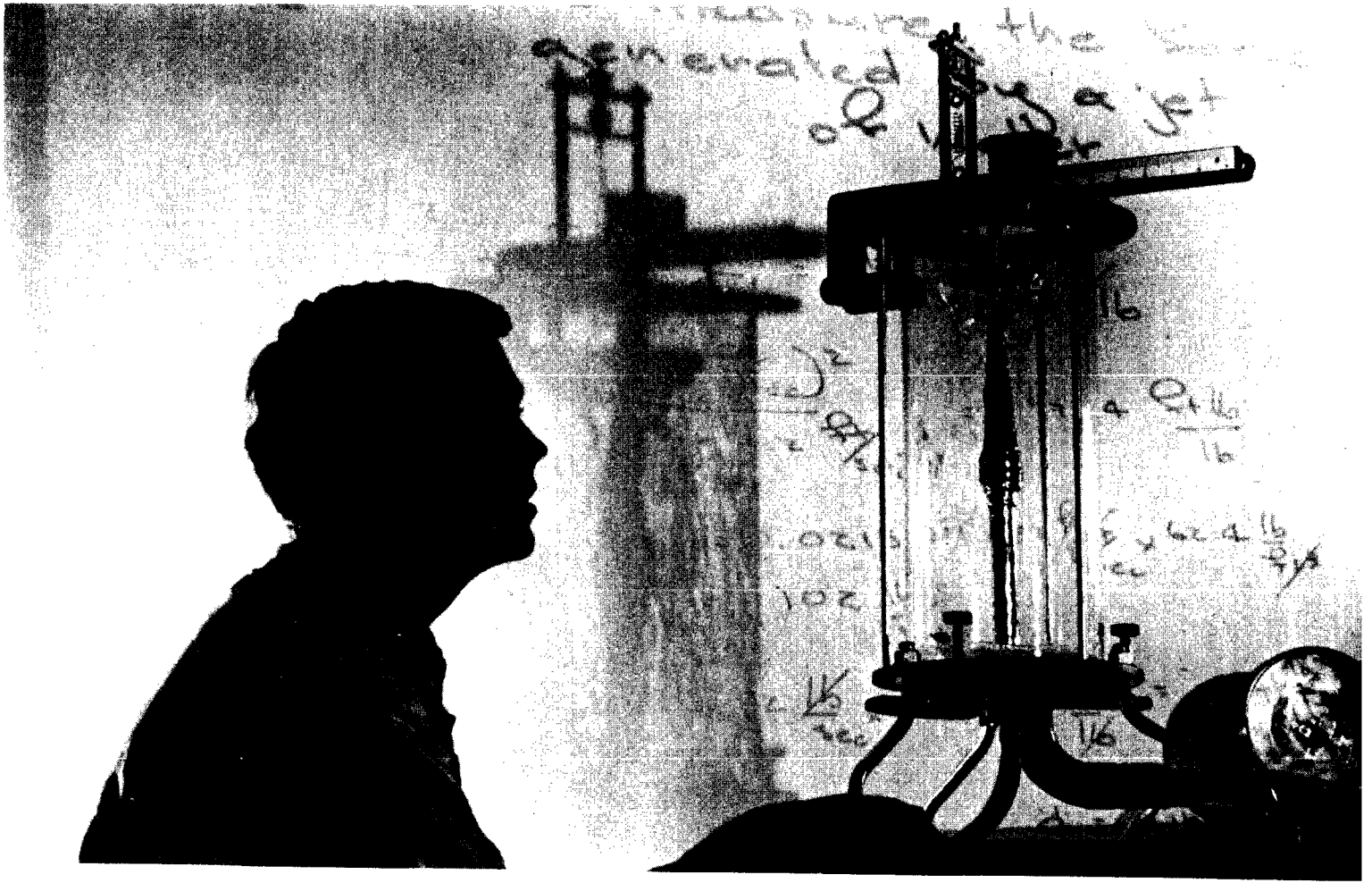
The two-year Mechanical Technology program offers intensive training leading to graduation as a mechanical technologist. Job possibilities include work in consulting engineering offices as mechanical design draughtsmen on machinery, steelwork, piping, power plants, and installation; in plant engineering offices, production departments, and estimating departments; in testing and inspection establishments; in field installation and service; and in machinery sales.

The program includes studies in mathematics and physics plus specialized subjects such as engineering materials, draughting, strength of materials, machine design, fluid mechanics, fluid power, thermal engineering, electricity, and machine tools. Theory presented in lectures is directly applied in problem periods, design drawing sessions, and laboratory assignments utilizing excellently equipped laboratories and shops. In the thermodynamics laboratory, for example, students operate and test steam boilers, air compressors, a steam turbine, gas turbine, dual-fuel engine, and other equipment, while in the machine shop they use engine lathes, milling machines, a turret lathe, jig borer, boring mill, precision grinders, N.C. drill, and other modern equipment. In the fluid mechanics laboratory, students use sets of miniaturized equipments to perform many standard hydraulics experiments. In the fluid power laboratory, industrial and training circuits are designed, constructed, and operated, utilizing standard industrial components.

To augment these studies, field trips are made to industrial plants to observe practical installations and operations. Close liaison with industry ensures that graduates are trained to meet the exacting and varying requirements of industry. Coincidentally, this liaison acquaints students with the range of opportunities available and assists them in selecting their individual areas of greatest interest.

To span the broad field of Mechanical Technology, two options are provided, subject to adequate enrolment in each—(1) Production, (2) Design. Choice of option will be made at the end of the first year.

Those best suited to take advantage of this training will be students interested in applying scientific knowledge to practical use in the mechanical field. The aspiring technologist must have a sound grounding in mathematics and physics, and should be able to apply ideas in practical situations. Because the mechanical technologist normally functions as a key member of a closely knit team of engineers, production supervisors, craftsmen, and others, his/her ability to work with people effectively and congenially is essential. Working conditions generally are attractive, and physical requirements are not demanding.



ENGINEERING DIVISION

MECHANICAL TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
31.101	Communication	4
32.101	Basic Technical Mathematics	5
41.105	Engineering Materials	3½
49.100	Mechanical Draughting I	3
49.107	Applied Mechanics	8½
49.150	Production Engineering	4
49.165	Shopwork	3
	Library and Research	4
		35

Term 2

31.201	Communication	4
32.223	Calculus I and II	4
33.216	Physics	5
41.205	Engineering Materials	3½
49.200	Mechanical Draughting II	3
49.210	Strength of Materials	4½
49.225	Applied Heat and Introduction to Fluid Processes	2
49.250	Production Engineering	4
49.265	Shopwork	3
	Library and Research	2
		35

YEAR 2 — *Term 3*

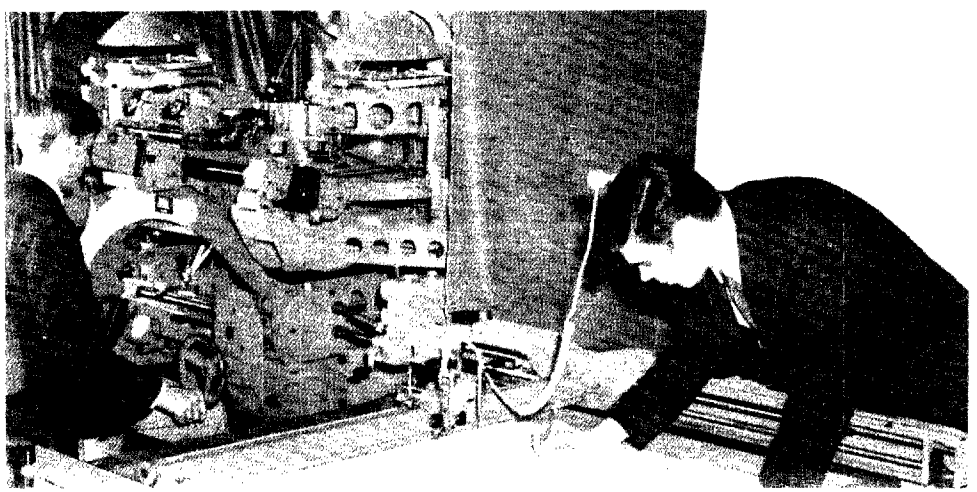
No.	Subject	PRODUCTION OPTION Classroom Hours per Week	DESIGN OPTION Classroom Hours per Week
22.349	Operations Management I	3	—
32.306	Calculus III	5	5
43.373	Electrical Equipment Applications	3	3
48.350	Instrumentation	—	3
49.300	Engineering Graphics	3	3
49.312	Machine Design	—	5
49.313	Production Mechanical Design	4	—
49.315	Fluid Mechanics	4	4
49.325	Thermal Engineering	—	5
49.350	Metrology and Quality Control	6	—
	Library and Research	7	7
		35	35

Term 4

22.439	Basic Operations Management	—	2
22.449	Operations Management II	4	—
32.454	Numerical Methods I and Statistics I	5	5
48.450	Instrumentation	—	3
49.412	Machine Design	—	5
49.425	Thermal Engineering	—	5
49.435	Fluid Power	5	5
49.445	Manufacturing Processes	4	—
49.450	Production Engineering	4	—
49.455	Tool Design	3	—
49.465	Analysis of Machining Techniques	3	3
	Library and Research	7	7
		35	35

General Prerequisite: Graduation from the Selected or Combined Studies Program.
Special Prerequisites: Mathematics 12, Physics 11.

Please refer to page 82 *re* preparatory courses.



Mining Technology

Mining has always been one of the important industries of Canada and will continue as such. Development of large tonnage deposits by open-pit methods has radically changed the mining scene in British Columbia. The Province is now a major producer of copper and molybdenum and continues to supply important quantities of lead, zinc, gold, silver, asbestos, and coal.

Because of strong international competition, the higher costs of operation in our rugged terrain, and the increasingly complex ores now being sought, the industry is becoming much more reliant upon engineering imagination and technological skill.

The program of Mining Technology is designed to serve this major industry by preparing technicians to help search for new mineral deposits, develop and operate new mines, and design and operate new mineral-processing plants. Most students who complete this program can expect to enter the industry as exploration assistants mapping structure, logging drill core, or performing geophysical and geochemical tests in the field; as engineering assistants sampling developed rock, surveying in pits or underground, or doing production control work in mines; or as test laboratory technicians, assayers, or junior operating staff in mineral-processing plants.

Opportunities for advancement in this industry are good for a person of ability and initiative, and, possibly within five years of graduation, he/she might well achieve a supervisory rank as party chief, shiftboss, or foreman.

Men and women entering the mining industry should be able to get along with people, be able to enjoy life in smaller communities, and be willing to travel. They should also have good health and be able to pass a medical examination and chest X-ray if they wish to work in or around a mine.

ENGINEERING DIVISION

MINING TECHNOLOGY

No.	Subject	Classroom Hours per Week
	YEAR 1 *Term 1*	
30.101	Applied Chemical Principles	6
31.101	Communication	3
32.101	Basic Technical Mathematics	5
33.101	General Physics	6
49.101	Draughting	2
50.101	Geology	3
50.102	Mining	2
51.110	Surveying	3
	Library and Research	5
		35
	Term 2	
30.201	Applied Chemical Principles	6
31.201	Communication	3
32.223	Calculus I and II	5
33.201	General Physics	6
49.203	Draughting	2
50.201	Geology	3
50.202	Mining	2
51.210	Surveying	3
	Library and Research	5
		35
	YEAR 2 *Term 3*	
31.301	Industrial Communication	2
32.306	Calculus III	5
33.304	Mining Geophysics	1½
41.305	Assaying	4
41.314	Mineral Processing	3½
42.103	Statics	4
50.301	Geology—Structural	3½
50.302	Mining—Operation and Equipment	3½
51.310	Surveying	3
	Library and Research	5
		35
	Term 4	
31.401	Industrial Communication	2
32.454	Numerical Methods I and Statistics I	5
41.405	Assaying	4
41.414	Mineral Processing	3½
42.202	Elementary Hydraulics	3
42.205	Strength of Materials	2
50.401	Geology—Mineral Deposits	3½
50.402	Mining—Operation and Equipment	4
51.410	Surveying	3
	Library and Research	5
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11, Chemistry 11.

Please refer to page 82 *re* preparatory courses.

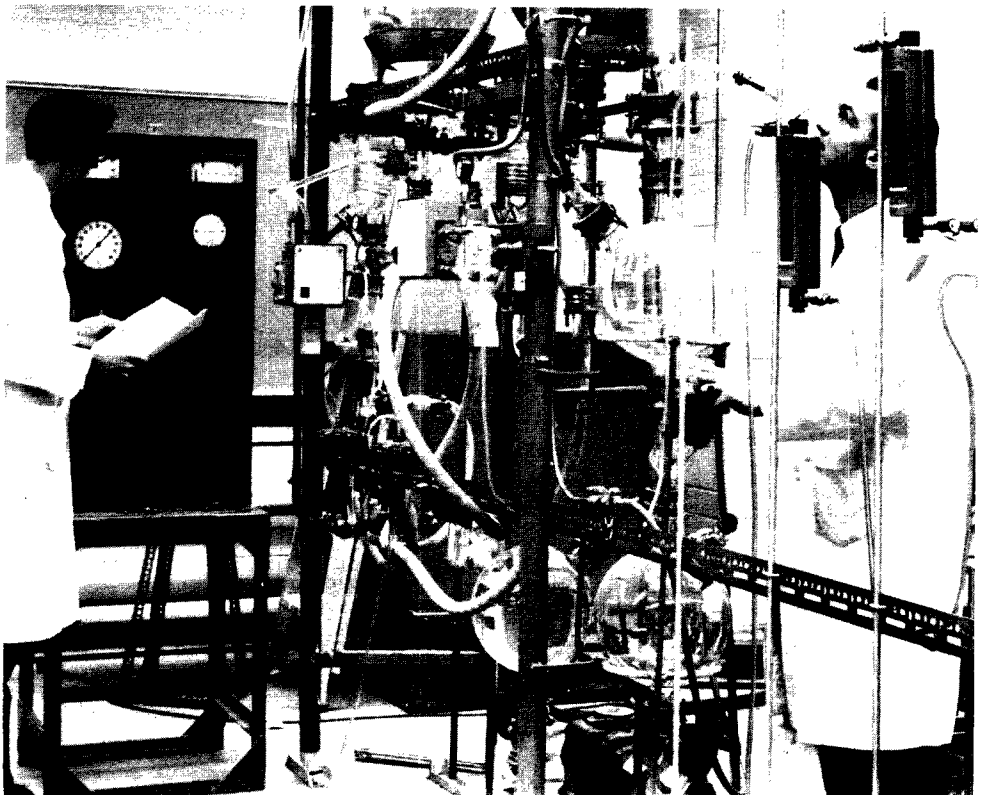
Natural Gas and Petroleum Technology

The gas and oil industry offers a wide variety of employment opportunities for a qualified technician. The transmission branch of the industry, involving the operation of pumping stations and maintenance of pipe-lines over vast areas, offers graduates opportunity for outdoor work in remote regions. On the other hand, the refining branch of the industry, usually located in more populous areas, offers a stable source of interesting work if this is preferred. Moreover, the industry as a whole is one of the most modern and up to date and is constantly introducing the latest technological improvements. Thus, there is every opportunity for a keen technician to advance in an interesting and profitable vocation.

The first year of the program offered at the Institute primarily covers basic scientific and engineering principles as a foundation for the subsequent specialized petrochemical training. Training will be provided in the distribution and utilization of gas in both industrial and domestic fields, and there will be considerable emphasis on measurement and automatic control since the trend is toward completely unmanned automatic installations. Tuition will be given in the transmission of oil and its utilization in modern automatically controlled refineries, and there will be emphasis on the chemistry of petroleum products. The course will include scientific computer programming and frequent opportunities for field trips to local installations.

Students desiring to enter this field should have a keen interest in the operation of large-scale equipment, as distinct from its maintenance and repair, and should have a good academic standing in chemistry and physics. Although in modern refineries most of the time may be spent indoors, technicians should be prepared to work outdoors for lengthy periods. They must be prepared, in the plant operations, to take great responsibility for the satisfactory and safe operation of highly complex plant equipment.

Employment opportunities for technicians include laboratory work, studies of corrosion of above-ground and buried structures, analysis of oils, gases, and petroleum products, right-of-way land work, and plant operation in pumping stations and refineries. With such a variety of opportunities, qualified technicians should have no difficulty in establishing themselves in a profitable and interesting career.



ENGINEERING DIVISION

NATURAL GAS AND PETROLEUM TECHNOLOGY

YEAR 1 — *Term 1*

No.	Subject	Classroom Hours per Week
30.101	Applied Chemical Principles	6
31.101	Communication	3
32.101	Basic Technical Mathematics	5
33.101	General Physics	6
41.105	Engineering Materials	3½
47.101	Introduction to Petroleum Hydrocarbons	3
50.101	Geology	3
	Library and Research	5½
		35

Term 2

22.247	Basic Operations Management	2
30.201	Applied Chemical Principles	6
31.201	Communication	3
32.223	Calculus I and II	5
33.201	General Physics	6
47.202	Petroleum Geology	3
49.266	Introduction to Machine Tools	2
51.204	Introduction to Surveying	3
	Library and Research	5
		35

YEAR 2 — *Term 3*

30.302	Physical Chemistry	5
32.306	Calculus III	5
41.341	Unit Operations	6
41.351	Pollution Control	3
47.221	Gas Distribution and Utilization	6
47.311	Gas and Oil Production and Transmission	6
	Library and Research	4
		35

Term 4

14.351	Computer Applications	2
30.404	Organic Chemistry	5
32.454	Numerical Methods I and Statistics I	5
33.406	Petroleum Geophysics	1
41.441	Unit Operations	6
47.409	Process Dynamics	3
47.431	Oil Refining and Utilization	8
	Library and Research	5
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11, or Chemistry 11.

Please refer to page 82 *re* preparatory courses.

Surveying Technology

Survey techniques have undergone radical changes during the last two decades, due largely to advances in the development of electronic devices which are capable of measuring distance up to 40 miles with an accuracy of three parts per million, and in the advancements made in the realm of computers.

The two-year program in the Surveying Technology has two main objectives. The first is to equip the student with the required knowledge of mathematics, physics, astronomy, photogrammetry, and theory of surveying, together with the practical skills in note-keeping, draughting, field operations, and calculating so that he/she may be employed as a surveying or engineering assistant in the various fields where survey techniques are used and thus is eligible to become a member of the Society of Engineering Technologists. The second objective is to provide students with the knowledge and skills which, with experience, will help to eventually qualify them as members of the Corporation of Land Surveys of British Columbia.

Employment opportunities in survey fields are widely varied. Surveyors, consulting engineers, the oil and gas industry, government mapping departments, government highway departments, utility companies and civic planning and engineering departments are among those that offer employment to graduates. Areas of employment in Canada range from the southern border to the Arctic regions and from the Pacific to the Atlantic Ocean and many Canadian surveyors are employed on large mapping projects throughout the world.

The student requires a good basic understanding of mathematics and physics to the University Entrance level and should also be physically and mentally suited to outdoor and office work.

In the second year the students may study in the Survey or Photogrammetry Option.

NOTE—Surveying students are expected to purchase a pocket calculator.

ENGINEERING DIVISION

SURVEYING TECHNOLOGY

YEAR 1 *Term 1*

No.	Subject	Classroom Hours per Week
31.101	Communication	3
32.151	Basic Mathematics	6
33.115	Physics for Surveying Technology	5
42.102	Elementary Hydrology	3
49.101	Draughting	2
51.101	Surveying	11
	Tutorials	1
	Library and Research	4
		35

Term 2

31.201	Communication	3
32.251	Calculus	6
33.215	Physics for Surveying Technology	5
49.203	Draughting	2
51.201	Surveying	11
51.203	Natural Sciences	3
	Tutorials	1
	Library and Research	4
		35

SURVEY OPTION

YEAR 2 *Term 3*

14.351	Computer Applications	2
32.351	Statistics	4
51.301	Plane Surveying Computations	2
51.302	Geodetic Surveying II	3
51.303	Mathematical Cartography	3
51.304	Field Surveying II	7
51.305	Draughting	3
51.306	Astronomy	2
51.307	Photogrammetry	2
51.308	Description for Deeds	2
	Library and Research	5
		35

Term 4

14.451	Computer Applications	2
32.451	Matrix Algebra and Least Squares	4
51.401	Plane Surveying Computations	2
51.402	Geodetic Surveying II	2
51.403	Adjustments of Surveying Measurements	3
51.404	Field Surveying II	9
51.406	Astronomy	3
51.407	Photogrammetry	4
51.408	Plane Surveying II	2
	Library and Research	4
		35

ENGINEERING DIVISION

SURVEYING TECHNOLOGY

PHOTOGRAMMETRY OPTION

YEAR 2 — *Term 3*

No.	Subject	Classroom Hours per Week
14.351	Computer Applications	2
32.351	Statistics	4
51.302	Geodetic Surveying II	2
51.303	Mathematical Cartography	3
51.306	Astronomy	2
51.311	Surveying	2
51.315	Cartography	2
51.317	Photogrammetry	12
	Tutorials	1
	Library and Research	5
		35

Term 4

14.451	Computer Applications	2
32.451	Matrix Algebra and Least Squares	4
51.402	Geodetic Surveying II	2
51.403	Adjustments of Surveying Measurements	3
51.415	Cartography	3
51.411	Surveying	2
51.417	Photogrammetry	14
	Library and Research	5
		35

General Prerequisite: Graduation from the Selected or Combined Studies Program.

Special Prerequisites: Mathematics 12, Physics 11.

Please refer to page 82 *re* preparatory courses.

THE SOCIETY OF ENGINEERING TECHNOLOGISTS OF BRITISH COLUMBIA

The Society of Engineering Technologists of British Columbia is a professional society registering and certifying engineering technicians and engineering technologists. Certification with the Society is dependent primarily upon academic qualifications in accord with national standards, in addition to a minimum of two years' technological experience acceptable to the Board of Examiners.

The British Columbia Institute of Technology has requested the Society accredit its engineering technology programs. In accordance with the Society's Accreditation Policy, the programs will be evaluated against the Society's standard, and where a program meets or exceeds that standard the program will be accredited as providing the full academic requirement for certification at one of the three certification levels. Where available, the Society adheres to the national standard of the Canadian Council of Engineering Technicians and Technologists, of which the Society is a member. Pending full accreditation, the Society accepts BCIT graduates as having the full academic qualifications toward certification.

Membership in the Society is available to full-time students at BCIT. The Society strongly encourages students to become members of and actively support this organization, which speaks for the engineering technologist in industry. As associate members of the Society, students receive regular issues of the *B.C. Technologist* and the *SETBC News*. They have the right to use the Employment Referral Service and make reference to the annual salary survey to assist in appreciating the salary levels for technologists in industry, and the right to become involved with the organization, which is working to enhance the professional status of engineering technicians and technologists.

The Society is incorporated under the *Societies Act* of British Columbia. Briefly, the objectives of the Society are:

- To provide formal recognition in the form of certification for engineering technicians and engineering technologists.
- To provide a controlled, qualified, and responsible body of engineering technicians and engineering technologists, thus obtaining recognition of our profession in industry.
- To act as the vehicle whereby its members may increase their knowledge and skill of respective technologies.
- To offer placement and educational services, technical literature, special group insurance, and other group benefits inherent in all such organizations.

In accordance with these objectives, the Society is actively representing all engineering technicians and technologists in British Columbia. Some of the activities include the promotion of directed study courses for engineering technologists; continuing education courses for which credit may be granted toward registration as a professional engineer; development of an Accreditation Program to aid in the maintenance of the highest possible standards in education, and, most recently, the Society has been working toward appropriate recognition in law for its members.

Any person interested in the Society of Engineering Technologists should contact:

The Registrar
The Society of Engineering Technologists of B.C.
2991 West 41st Avenue
Vancouver, B.C. V6N 3C8

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SUBJECT SUMMARIES

SUBJECT NUMBERING SYSTEM

Subjects are numbered to indicate the technology or department under which instruction is given, the term, and the subject material. The first two figures indicate the parent technology or department, the third figure indicates the term in which a subject is normally taught, the last two figures indicate the subject description. In the example 31.201, the "31" shows that the subject is offered by the English Department, the "2" shows that the subject is normally taught in the second term, the "01" stands for the subject description. (The above refers to those subjects offered on the four-term (two-year) cycle.) In those technologies on the quarterly system (Health Division and Electrical and Electronics) the third number is substituted by the letters A, B, C, D, E, F, G, H, indicating the quarter the subject is taught. The departments with their corresponding numbers are as follows.

10—Administrative Management.
12—Broadcast Communications.
14—Computer Programming and Systems.
16—Financial Management.
18—Hotel, Motel, and Food Service Management.
20—Marketing Management.
22—Operations Management.
30—Chemistry.
31—English.
32—Mathematics.
33—Physics.
40—Building.
41—Chemical and Metallurgical.
42—Civil and Structural.
43—Electrical and Electronics.
44—Biological Sciences.
45—Forestry.
46—Forest Products.
47—Natural Gas and Petroleum.
48—Instrumentation and Systems.
49—Mechanical.
50—Mining.
51—Surveying.
70—Medical Laboratory Technology.
72—Medical Radiography.
74—Nuclear Medicine Technology.
76—Nursing.
78—Biomedical Electronics Technology.
80—Health Data Technology.
82—Environmental Health Technology.
98—Basic Health Sciences.

ADMINISTRATIVE MANAGEMENT

10.131 Management in Industry

An orientation on the nature of business in the private enterprise system, embracing forms of business ownership, organization, leadership, management techniques, and business elements of production. Typical cases taken from industry are studied to encourage students to think and decide for themselves. Leads into Administrative Practices.

10.132 (for Computer Programming and Systems students). *See* 10.131.

10.133 Management in Industry (for Financial students)

An orientation on the nature of business in the free enterprise system, with an emphasis on Organization for Management. The functions of management, planning, and organizing are thoroughly examined as well as giving attention to topics like Management Information Systems, the role of the committee, and how the theory of management philosophy developed. This leads to the course Administrative Practices.

10.134 (for Marketing Management students). *See* 10.131.

10.135, 10.235 Economics

The aim is to develop an understanding of the organization and operation of the Canadian economy. Students analyse demand and supply, how production costs vary, and how prices are determined in different markets (micro-economics). The theoretical tools of the economist are used to explore the concepts of national income, employment, inflation, and growth (macro-economics). An appreciation of the relation between economic theory and economic policy is provided.

10.137, 10.237 Economics (for Financial students). *See* 10.135.

10.138, 10.238 Economics (for Hotel, Motel students). *See* 10.135.

10.139, 10.239 Economics (for Marketing students). *See* 10.135.

10.221 Psychology in Management I

This course introduces the student to a psychological approach to administration through a study of the determinants of human behaviour, personality, motivation, attitudes, perceptions, learning, and leadership, and their application to the administrative process.

10.231 Administrative Practices

An insight into the basic nature of business problems and the administrative process involved to handle them. Problems in typical business settings will be examined, with emphasis on the personnel management function. Study and discussion will be undertaken of actual business situations illustrating problems frequently met in industry requiring managerial analysis, decision, and action. A sequel course to Management in Industry.

10.233 Administrative Practices (for Financial students)

This course follows Management in Industry to give a further insight into the functions and practice of management.

A study of the function of directing in all its aspects of leadership, communication, and motivation is followed by an analysis of the control function. Additional topics such as Supervisory and Administrative Operations are covered. A brief introduction is also given to the topics of Industrial Relations.

10.234 Economics (for Operations Management students); *see* 10.135

10.235 *See* 10.135.

10.236 Economics

This is a one-term introductory course which presents basic economic theory and concepts to the student. Theoretical tools of economics are used to examine macro-economic issues in the Canadian economy. Micro-economic theory will be used to show its relevance in an analysis of the business firm, the price system, and the market system.

10.237 *See* 10.135.

10.238 *See* 10.135.

10.239 *See* 10.135.

10.240 Government and Business

An examination of the involvement of Federal, Provincial, and municipal Government in the regulation and support of business enterprise in Canada. A look at Government policy toward monopoly and combines control, the promotion of competition, and the stimulation and stabilization of Canadian business. While theories of Government intervention will be examined, the course will concentrate on the practical aspects of Government involvement with business. Examples of specific Government programs will be explored to determine their effects on the business enterprise.

10.285 Organizational Behaviour

Directed toward Operations Management students, this course is the study of man's behaviour and attitudes in an organizational setting; the organization's effect on his perceptions, feelings, and actions; and his effect on the organization, particularly how his behaviour affects the achievement of the orgnaization's purposes. It is the study of the organizers, who they are, what they do, with whom they communicate and how; in short, its focus is the interactional field between organization men, but it is also a study of the organized—how they organize to organize the organizers. Within this context such concepts as leadership, communications, power, authority, change, and conflict will be examined.

10.321 Psychology in Management II

This course examines the determinants of employee job performance and productivity within the organization; the effect of different patterns of formal organization on motivation; the effect of the different forms of informal organizations and leadership styles on organizational performance; and the satisfaction of individual needs within the organization.

10.325 Industrial Relations

An introductory analysis of the fundamental issues and facts of labour-management relations. Special emphasis is given to collective agreement content and interpretation, bargaining, and basic labour economics.

10.327 Organization Renewal and Development

This course is designed to train students in the processes and techniques of Organization Development, including the diagnosis of problems and the processes involved in solving organizational problems.

10.329, 10.429 Real Estate Management

The real estate function—land law, estates, and interests in land and the personal and business management decision process. The economic characteristics of urban real estate and the market; city growth and development—locational factors in influencing the determination of land use and ownership. Institutional lenders, the mortgage market, the functions of the real estate agent, salesman and appraiser.

10.333 Industry Analysis

This course is designed to look at the structure, performance, and conduct of various industries. It is designed to look at the problems management face in a specific industry and provide a vehicle by which students can develop practice, experience, and analytical techniques to assist in decision making. The over-all philosophy is to motivate the student to look at the industry rather than the more limited view of the firm.

10.334 Economics (for Operations Management students).

See 10.135.

10.340, 10.440 Government and Politics in Canada

The course emphasizes the process of Government and Politics. It deals with the policy-making process, the Canadian constitution, Federalism, political parties, and interest groups. A portion of the course is devoted to provincial-municipal relations.

10.360, 10.460 Business Law

A study of legal rules and principles which guide decisions involving the law of contracts, including the sale of goods and negotiable instruments, as well as the business associations of agency, partnership, and companies.

10.370, 10.470 Personnel Administration (for Administrative students)

An introduction to the fundamentals of personnel management, including organization of the personnel function; recruiting, testing, interviewing, selection; job descriptions and evaluation, salary administration, fringe benefits; training, management development and performance appraisal; constructive discipline, grievances, and morale.

10.371 Management of Human Resources (for Operations Management)

The Management of Human Resources course is designed to provide the student with an opportunity to experience and learn about cause-and-effect human relationships within a business environment. The course will involve study of individuals, groups, and organizations from a managerial and personnel administrative point of view. Heavy emphasis will be placed on involvement and simulation techniques as the key to effective understanding of management of the human resource.

10.381 Organizational Behaviour (for Broadcast and Forestry Students)

This course is the study of man's behaviour and attitudes in an organizational setting; the organization's effect on his perceptions, feelings, and actions; and his effect on the organization, particularly how his behaviour affects the achievement of the organization's purposes. It is the study of the organizers, who they are, what they do, with whom they communicate and how; in short, its focus is the interactional field between organization men, but it is also a study of the organized—how they organize to organize the organizers. Within this context such concepts as leadership, communications, power, authority, change, and conflict will be examined.

10.382 *See* 10.381. For Computer Students.

10.383 *See* 10.381. For Financial Management Students.

10.384 *See* 10.381. For Transportation Option Students.

10.417 Hospitality Industry Law

A summary of Canadian law applicable to the hospitality industry; the sources of law; constitutional law; the legislative, executive, and judicial functions.

The 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, health, and licensing.

10.425 Industrial Relations

A detailed analysis of selected labour-management problem areas with emphasis on the solution of practical existing problems in industrial relations.

10.427 Training and Development

This subject provides the student with the capability of designing and implementing a training program. Emphasis is given to practical problems of training in industry.

10.428 Directed Studies

This project enables the student to practise the principles taught in the courses of major importance in the Manpower Management Option.

10.429 *See* 10.329.

10.432 Business and Administrative Practices

See 10.231.

10.434 Managerial Policy

An analysis of business policy formulation designed to give the student practice, experience, and confidence in handling business situations, including those of a complex nature where basic policy decisions are necessary to assist in problem-solving. Comprehensive business cases will be selected covering several fields such as finance, control, personnel, production, marketing, and general management for study and discussion. The course is designed to acquaint the student with the role of top management and the inter-relationships between these fields. Determination of an acceptable course of action will be followed by the development of a proposed scheme of implementation. The course includes an opportunity, as part of a team, to run a "company" on a computerized management game.

10.437 *See* 10.135.

10.440 *See* 10.340.

10.460 *See* 10.360.

10.470 *See* 10.370.

10.471 Personnel Administration (for Operations Management)

Personnel Administration involves the study of recruitment, selection, and placement; job analysis, job descriptions, and job evaluations; compensation and appraisal plans; employee benefit programs; training and educational programs; labour relations and personnel planning and evaluation (*See* also 10.370).

10.484 Management of Human Resources (for Marketing Management students)

The Management of Human Resources course is designed to provide the student with an opportunity to experience and learn about cause-and-effect human relationships within a business environment. The course will involve study of individuals, groups, and organizations from a managerial and personnel administrative point of view. Heavy emphasis will be placed on involvement and simulation techniques as the key to effective understanding of management of the human resource.

10.485 Industrial Relations

An introductory analysis of the fundamental issues and facts of labour-management relations. Special emphasis is given to collective agreement content and interpretation, bargaining and basic labour economics.

10.730 Industrial Management (for Chemical, Metallurgical, and Biological Sciences students)

Designed to give students an understanding of business management and an opportunity to apply principles and techniques through analysis of business case-problems.

10.731 Industrial Management (for Building students). *See* 10.730.

10.E30 Industrial Management (for Electrical and Electronics students). *See* 10.730.

10.907 *See* Career Programs Calendar.

BROADCAST COMMUNICATIONS

12.101, 12.201 Introduction to Radio

An introduction to the equipment and techniques used in radio broadcasting. Starting with station organization, the student continues with a study of microphones, radio control boards, tape machines, and all broadcast accessories, and develops the manual dexterities needed in the operation of this equipment.

12.102, 12.202 Introduction to Television

An introduction to the processes of television-picture transmission and the equipment used in broadcast television. Cameras, lighting equipment, telecine equipment, video switchers, video-tape recording, and colour television. Manual dexterity is developed in the operation of this equipment in a studio and control-room situation.

12.103, 12.203 Introduction to Broadcast Journalism

The student is given a first look at the world of Broadcast journalism. The subject covers the history of news, newsroom organization, and operations in radio and television; news writing and editing, news sources and coverage; the production of newscasts and special interest features for both radio and television.

12.105, 12.205 Industry Organization

A first-term study is made of the history of broadcasting from first steps through to present-day usages, and of the rules and regulations under which

broadcasting in Canada is governed. The student is introduced to the development of programming, Copyright, Broadcast Systems, and Management.

12.107 Production Techniques

The students are given their first look at "What makes it work." This is an elementary technical introduction.

12.201 *See* 12.101.

12.202 *See* 12.102.

12.203, 12.303, 12.403 Broadcast Journalism

This program is divided equally into journalistic uses of radio, television, and investigative reporting. The students will expand their skills in the creative use of news, features, and documentaries and will be given ample opportunity for any extensive research projects which they will be required to tackle.

12.205 See 12.105.

12.206, 12.406 History and Current Events

It is essential that people in broadcasting have as broad a base of external knowledge as possible. This subject combines lectures and practical exercises, deals with present-day happenings on the local, regional, national, and international level.

12,207, 12.307, 12.407 Production Techniques

These courses are taken by students of the Radio Elective only. In second and in fourth terms announcing training is given in a weekly seminar. In third term the students are given a weekly seminar on the operation of a radio newsroom.

12.208, 12.308, 12.408 Production Techniques

These courses are taken by students in the Television Elective only. In Term 2 attention is given to Staging and Lighting, in Term 3 Filming, and in Term 4 Public Affairs.

12.209, 12.309, 12.409 Production Techniques

These courses are given to students in the Broadcast Journalism Eelective. In Term 2 a weekly seminar on Film and Cinematography, in Term 3 Announcing, and in Term 4 Editorial and Feature Writing.

12.301, 12.401 Radio Production

Putting the fundamentals of radio production to work. The elective deals with all aspects of modern radio broadcasting in which the student is given ample opportunity to expand techniques learned in the first year into modern and creative broadcasting.

12.302, 12.402 Television Production

Students engage in the production of television broadcasts, making use of full studio facilities in the production of television programs, commercials, special events coverage, the taking and editing of film material, and the carrying-out of on-the-job training projects. A complete colour studio facility with full video recording is available to the student.

12.303 *See* 12.203.

12.307 *See* 12.207.

12.308 *See* 12.208.

12.309 *See* 12.209.

12.401 *See* 12.301.

12.402 *See* 12.302.

12.403 *See* 12.203.

12.406 *See* 12.206.

12.407 *See* 12.207.

12.408 *See* 12.208.

12.409 *See* 12.209.

COMPUTER PROGRAMMING AND SYSTEMS TECHNOLOGY

Courses for Students on Term System

14.050 Introduction to Data Processing

Training in basic data processing principles to develop recognition of the possible application of these principles in industry. The principal functions of data processing will be illustrated and practised with an H.P. minicomputer operating interactively. Elementary computer programs will be written and tested on the computer. Use of flow-charting and elementary data processing systems design will illustrate the achieving of data processing objectives.

14.052 Computers in Business

For those people who are not specializing in data processing, a look is given at the types of computer systems currently in use in business. Topics include computer hardware and software development, program preparation (students will code and execute a COBOL program in this section), input/output media and devices, data centres, operating systems, controls in computer systems, installing a computer, and current trends in the computer industry.

14.053 Business Computer Programming

An introduction to problem-oriented computer programming using COBOL programming language. Standard accounting applications will be flow-charted, programmed, and tested by the student on an IBM System /370 computer.

14.160 Computer Programming I

An introduction to the principles of programming. Emphasis is on the understanding of the mode of operation of a program, practice in the flow-charting, coding, debugging, and documenting of simple business applications.

14.170 Computer Systems I

A brief introduction to Data Processing Systems using appropriate equipment for laboratory demonstration of the principles involved.

14.182 Office Equipment

A course to develop the touch method of operation for adding machines; to provide practice in solving business problems on electronic calculators; and to provide hands-on experience in using a punched tape word processing machine. The course includes an exercise to introduce business forms.

14.196 Office Systems and Procedures. *See* 14.296

14.260 Computer Programming II

Continuation of IBM/370 Assembler language introduced in 14.160. Programming techniques include file updating and multiple control breaks and processing of disk storage files. Included are register binary operations, base/displacement addressing, explicit use of base registers, table look-up, and subroutines. Students will analyse problems, organize solutions, design the report output, then code assemble and test their programs according to acceptable standards.

14.270 Computer Systems II

Introduction to computer systems design and basic systems analysis techniques. Emphasis is on computer applications to payroll, billing, and other accounting and statistical functions.

14.296 Office Systems and Procedures

An introduction to common business applications such as accounts receivable, accounts payable, payroll, etc. One-write practice sets, paper flow chart problems, and an electronic accounting machine are the devices used to teach the procedures and methods aspect.

14.306 Probability and Simulation

Probability rules, expectation, repeated trials, Bayes' Theorem with applications; probability distribution, Poisson distribution, and queueing theory; simulation; probability and Monte Carlo simulation, with Fortran applications.

14.351 Computer Applications

Applications of the computer in engineering and medical technologies; how a computer works, recognizing problems suitable for computer solution, flow-charting and communicating with computer personnel; emphasis is on the use of computers to solve problems related to the technology concerned. Where available, "package" programs will be demonstrated and used by students. FORTRAN or BASIC programming language is taught depending on the technology.

14.360 Computer Programming III

Continuation of 14.260. A detailed study of computer programming capabilities, using the full instruction set of the System/370 Assembler language, establishing detailed programming, label, flow-chart, report layout, and documentation standards; introduction to input/output control system and to the operating system. The student will write several programs employing card, printer, tape, and disk files.

14.370 Computer Systems III

Continuation of the principles of systems analysis and design as introduced in 14.270. Gathering data, system analysis, systems flow charting, documentation, forms design and accounting controls. Introduction to disk storage devices, their characteristics and uses. The use of a high-level programming language, PL/I, in solving business and statistical problems involving internal sorting and binary search.

14.380, 14.480 Operating Systems

A thorough study of the IBM S/370 Disk Operating System will be undertaken to permit the student to perform the Operating Systems Programmers tasks of: (*a*) implementing the computer manufacturer's operating systems, utilities, and programming languages; (*b*) developing standard programming routines and procedures; and (*c*) providing technical advice and assistance to application programmers and operations staff. Students will be able to perform systems generation and maintenance.

14.408 *Linear Programming*

Graphical method; algebraic method; simplex method; analysis of simplex results; LP problem formulation; use of computer to solve problems; analysis of computer solution; use of reduced costs and shadow prices; sensitivity analysis; practical applications and limitations of LP; implementation of results.

14.409 Operations Research Techniques

Linear programming theory, problem formulation, analysis of results, sensitivity analysis, practical applications and limitations; linear programming, simulation, and dynamic programming; choosing the appropriate technique. Inventory models; CPM and PERT, uses and limitations.

14.451 Computer Applications

Advanced programming techniques in FORTRAN are taught and applied to more complicated surveying applications. Packaged programs in surveying are also taught to familiarize students as users of these programs in industry.

14.460 Computer Programming IV

Continuation of 14.360. Disk and tape programming for sequential, index sequential and direct file organization, as well as advanced and efficient coding techniques in both PL/I and assembler language. Considerable time will be devoted to a rigorous study of the job-control statements, sort, and utility programs.

14.470 Computer Systems IV

Methods used in the development of business data processing systems for punched cards, disk storage, and magnetic tape. System specification; equipment appraisal, acquisition and utilization; implementation and control.

These techniques will be applied to the solution of advanced management problems. Compiler language; COBOL will be included in this course.

14.480 *See* 14.380.

Courses for Students on Quarterly System

14.A82 *See* 14.182.

14.B50 *See* 14.050.

14.C50 *See* 14.050.

14.E80 Computer Applications I

Introduction to computer concepts, input and output devices. File design consideration and proper choice of file storage medium for proper information retrieval as applied in the Health Data Technology. Record design and form design are also stressed.

14.F80 Computer Applications II

Introduction to coding structures as applied in Health Data. Real time systems vs batched systems. Case studies of converting manual systems to computer systems in medical record keeping. An overview of the problem-oriented medical record in a computerized system.

14.G51 Computer Applications

Computer applications in nuclear medicine are programmed using BASIC. Fundamentals of computer concepts, input/output devices are also taught, with emphasis on the applications in nuclear medicine.

FINANCIAL MANAGEMENT

16.140, 16.240 Accounting

Basic accounting procedures; closing the books; adjustments; working papers; merchandise operations; statement and ledger organization; special journals; forms of business organization; accounting principles; introduction to cost accounting; analysis of financial data; working capital; departmental and branch operations; consolidations.

16.142 Introduction to Financial Accounting (for Operations Management)

An introduction to financial accounting that includes a survey of the accounting process and a review of basic accounting theory. Preparation of financial statements, analysis of financial statements, and the reporting of financial information to outsiders is covered in depth. Also covered is the accounting for assets, liabilities, and owners equity.

16.145, 16.245, 16.345, 16.445 Credit and Collections

Study of various types of credit and their use by retail businesses, financial institutions, commercial enterprises, and consumers. Includes sources of information, credit policy and control, and collection techniques.

16.240 *See* 16.140.

16.242 Introduction to Managerial Accounting (for Operations Management)

An introduction to managerial accounting covers the preparation and utilization of financial information for internal management purposes.

Volume-profit analysis, capital budgeting, depreciation and return on investment, budgeting systems, common dollar accounting and funds flow analysis will also be considered.

16.245 *See* 16.145.

16.341, 16.441 Cost and Managerial Accounting

The accountant's role in the organization; major purposes of cost accounting; cost-volume-profit analysis; job order costing; process costing; standard costs; budgeting, responsibility accounting; direct costing; capital budgeting; joint and by-product costs; nonmanufacturing costs; inventory; accounting systems; payroll.

16.342 Marketing Management Accounting I

The study of planning, analysis, and control techniques, facilitating the decision-making process of marketing management. Emphasis is placed on quantitative analysis using accounting data. Techniques studied include contribution margin analysis, econometrics, linear programming, macro- and micro-forecasting techniques, and break-even analysis.

16.343 Cost Accounting

Direct costing and the contribution approach; cost-volume-profit analysis; cost analysis for managerial planning and decisions; process job-order, joint, and by-product costing; inventory planning, control, and valuation; budgeting and profit planning; standard costs; cost and price variance analysis; capital budgeting.

16.344 *See* 16.443.

16.345 *See* 16.145.

16.346, 16.446 Auditing

Basic auditing procedures. Features of the internal control system. The audit program. Statutory audits, government audits, internal audits. The audit routine as applied to cash, inventory, accounts receivable and sales, fixed and other assets, accounts payable and purchases, income and other taxes and expenses. Specialized audit routines.

16.347, 16.447 Financial Accounting

Review of accounting procedures, the accounting cycle, and the preparation of financial statements. Net income concepts, capital stock, surplus and dividends, accounting principles, assets, liabilities and reserves, analysis of working capital, application of funds. Statements from incomplete records, reorganizations, the price level problem.

16.348 Cost Accounting for Operations Management

This course will concentrate specifically on cost accounting for Operations Management. Coverage will include basic cost concepts, systems of cost accumulation, accounting for manufacturing overhead, standard cost systems, and the analysis of cost variances. Variable costing will be also dealt with.

16.350 Public Financial Administration

A course examining the administration of public funds at the municipal, provincial, and federal level. Topics covered will include revenue gathering by government and the control of government expenditure by budget and other means. The role of the auditor in public administration will be considered.

16.361, 16.461 Finance (for Financial Management students)

An in-depth study of the finance function within a corporation. The techniques which are necessary to make decisions under varying conditions and the theoretical framework upon which these techniques are built. Methods for raising and utilizing intermediate and long-term funds. Capital budgeting. Working capital management. Dividend policy. Financial institutions. Business failure. International finance.

16.362, 16.462 Finance (for Administrative Management students)

An investigation of different methods of raising funds for new and existing businesses, corporate and noncorporate. Business risk and uncertainty. Analysis of the importance of financial institutions. Business promotion. Security analysis. Capital budgeting. Decision-making analysis. Surplus, dividend, and reserve policy. Business failure.

16.365, 16.465 Money and Banking

The study of money and money substitutes, supply of currency, creation of credit; functions and uses of money; practices, policies, functions, and services of commercial banks; central banking and monetary control; objectives and techniques of monetary policy and debt management; financial assets and financial markets; money and the international economy.

16.366, 16.466 Security Analysis

Techniques and principles of security analysis; valuation of securities; analysis of risks inherent in all types of security investments. Emphasis will be placed on: the investment setting, the securities market, financial statement analysis, investment timing, and portfolio analysis of both individual investors and institutional investors.

16.370, 16.470 Projects in Industry

Students will have an opportunity to apply principles learned throughout their BCIT program to industrial situations. They will work under the supervision of faculty members with the co-operation of local firms.

16.441 *See* 16.341.

16.442 Marketing Management Accounting II

A continuation of the work begun in 16.342. Here emphasis is placed upon profit planning, pricing strategies, and control in the retail merchandising environment. Also studied are cost-accounting control concepts and applications, inventory management techniques, cash and capital planning techniques, and revenue reporting systems. The course ends with a study of the implications for managerial decision making of accounting reporting methods and policy.

16.443, 16.344 Management Accounting

The management accountant's role; income determination; decision-making; profit planning; budget; forecasting; profit margin variance analysis; corporate financial analysis; income tax; internal control; annual report; accounting aids for sales and production management; measuring managerial performance; direct costing and the contribution approach.

16.445 *See* 16.145.

16.446 *See* 16.346.

16.447 *See* 16.347.

16.450 Taxation

An introductory course dealing with all aspects of taxation in Canada. Municipal, provincial, and federal taxation will be covered. Specific topics will include income tax, sales taxes, and customs and excise taxes.

16.461 *See* 16.361.

16.462 *See* 16.362.

16.465 *See* 16.365.

16.466 *See* 16.366.

16.470 *See* 16.370.

HOTEL, MOTEL, AND FOOD SERVICE MANAGEMENT

18.102, 18.202 Food and Beverage Management

Background of industry; sanitation; meal planning and menu preparation; selection of foods; purchasing methods; principles of food preparation; equipment layout and specifications; service of foods; menu writing; administrative requirements; organization of the catering department.

18.103 Front Office Management

Front office organization and psychology. Materials, equipment, and supplies used; rooms salesmanship; reservations, registrations, and front office "accounting" for various-size hotels; handling of cash and credit transactions; the night hand-transcript, and the processing of accounts and the night audit on billing-audit equipment.

18.111 English—Speech

Speech construction; types of speeches; speaking before groups; introducing and thanking speakers, chairing meetings, and interviewing; practice in preparation and delivery of talks to groups.

18.201 Rooms and Lounge Management

Housekeeping organization and duties; control forms used; supplies and equipment used; specifications for purchasing equipment and linen; laundry operations; beer-parlour organization and control; cocktail-lounge organization, glassware, types of beverages, dispensing devices, and control systems.

18.202 *See* 18.102.

18.203 Front Office Machine Posting Practicum

To enable the student to gain practical and theoretical knowledge of equipment used in front offices of larger hotels. Upon completion of this course, the graduate will be able to handle transactions and error corrections on posting equipment.

18.300 Summer Work Practicum

Each student must work, during the four-month summer break between first and second years, for a minimum of three months full time in the hospitality/tourist industry. A report, covering this practical experience, must also be completed.

18.302, 18.402 Food and Beverage Management

Volume feeding management; menu pricing; pre-cost and control; budgeting; standards measurement; function catering; food service layout; food processing; organization of the department and staff scheduling; calculation of work loads; staff training and human relations; institution and hospital

food services; environment and atmosphere. Study of the complexities of menu planning; menu writing and terminology; merchandising in menu presentation; wine manufacturing and terminology; association of wine and food.

18.305, 18.405 Food Production and Service

Research in food preparation to balance quality preparation with cost of production; testing of new products to evaluate the possibility of their uses in a practical production situation; menu planning; development of certain manipulative skills to permit students to be in a position to eventually train and supervise others; dining-room service.

18.313 Food and Beverage Control

Fundamentals of internal controls and information systems for food and beverage operations. The course covers techniques of effective purchasing, receiving and production; sales controls; food and beverage cost calculations; and the sales mix and its effect on costing. Course emphasis is on interpretation of data for effective and profitable decision-making.

18.316, 18.416 Human Relations

Systematic approach to the personnel problems in today's business organizations, including human needs and wants, motivation process, social systems, leadership, unions, management techniques, communication problems, staff hiring and appraisal, training, incentives. Lab discussions based on real-life cases help develop ability to make decisions upon critical analysis of facts available.

18.325, 18.425 Marketing and Sales Promotion

This course serves to explore the relative positions of all components of the tourism industry—travel agent, tour operator, air or surface carrier, recreation facilities, and accommodation. How and where they depend on each other, how they buy and sell between themselves, and, finally, how they get their individual products or combined products to the market place.

18.330 Tourism Plant Design

A study of those facilities that go to make up the resort from urban continuity through to restaurant and room layout; how the hotelman can maximize his exposure to the developers and related groups; the course will also cover layout and design for ski areas, golf courses, tennis courts, marinas, and other related recreational facilities.

18.331 Introduction to Tourism

Study of the growth of tourism and why particular destinations are popular. The economic importance of tourism and government involvement. Tourism and the environment, and the direction of current trends in tourism and travel.

18.402 *See* 18.302.

18.405 *See* 18.305.

18.413 Hospitality Industry Accounting

Preparation, interpretation, and analysis of hotel balance sheets and profit and loss statements; budgeting and forecasting; feasibility studies; financing and cash flow; cost/volume/profit analysis; investment decision-making.

18.416 *See* 18.316.

18.418 Front Office Accounting

Review of front office guest accounts, using both manual and machine systems; preparation of the night transcript for smaller hotels and motels; completion of night audit for large hotels, using equipment such as the "NCR 42." This course will involve as much practical use of the equipment as is possible.

18.425 *See* 18.325.

18.430 Tourism and Travel

Methods of transportation—from campers and trailers through to luxury cruise ships. A study of how travel methods are packaged together with sleeping accommodation and entertainment, and are marketed through tour operators and (or) travel agents. The impact of tourism on real estate development and the effect that tourism has on the environment.

18.450 Research Project

Each student will select, or will be assigned, a topic related to the hospitality/tourist industry. With the guidance of an instructor, the student will then develop and submit an appropriate research report.

MARKETING MANAGEMENT

20.090 Marketing (for Computer students)

A marketing course designed for Computer Programming and Systems Program students covering the essential areas of the two-term marketing course in one term. *See* 20.180, 20.280.

20.180, 20.280 Marketing

An introduction to the marketing environment and marketing institutions; detailed study of the basic marketing functions, marketing research, product planning, selection of trade channels, merchandising, advertising, sales promotion, and salesmanship. Embraces marketing of consumer as well as industrial goods.

20.190, 20.290 Writing and Sales

The course familiarizes the students with advertising techniques, particularly in the broadcast media. Lectures and workshop sessions relate to the writing and evaluation of radio and television commercials. Basic marketing concepts, the function of advertising in society, and the economics of broadcast are related. Commercials are studied in detail. Special emphasis is placed on developing student's ability to work within a group situation. While students may not become writers, the course may lead to a position in broadcast sales, sales promotion, or advertising generally.

20.191, 20.291 Marketing (Administrative and Financial)

This course is designed to give the Administrative and Financial students a good understanding of the role of marketing in a firm. Marketing plays a critical role in any firm dealing in product or service; the decisions made by the marketing manager are reflected in the administrative and financial functions of a firm. The lab sessions will deal with typical marketing problems and students are exposed to the decision-making process in Marketing Management.

20.275 Salesmanship

Introduction to professional selling. Emphasis on practical problems of locating and qualifying prospects, use of the depth approach, and improving sales preparation and organization. Some examination also given to improving interpersonal communications in nonselling situations.

20.280 *See* 20.180.

20.290 *See* 20.190.

20.291 *See* 20.191.

20.310 Retailing

This course deals with fundamental principles of large- and small-scale retailing. The areas dealt with are principles of retail gravitation, principles of location, trading area analysis methods, assessment techniques of market and sales potentials, productivity problems in retailing, life cycle of retail institutions, retail strategies, and sales promotion.

20.322, 20.422 Marketing Management

Knowledge of how the marketing system operates as gained through the introductory marketing course is supplemented by understanding the varied responsibilities of the marketing manager—the influence of business policies; use of market research; demand, competition, cost analysis; marketing planning; and controlling the marketing program.

20.323 Sales Management

General principles of sales management. Emphasis is given to the human resource, with stress placed on selection, assimilation, training, and supervision; also examination of sales research, planning, organization, and analysis is made. The course finishes with a discussion of sales management ethics.

20.331 Modes of Transportation

This course is designed to introduce students to the various ways and means that commodities are moved. Methods employed by air, highway, pipe-line, rail, and water carriers, and the equipment utilized to achieve the aims of transportation are discussed. Students spend much of their time in the field, analysing the operations of carriers, shippers, and consignees.

20.332, 20.432 Transportation Economics

The principles underlying the economics of transportation including policies, prices, and rate structures will be studied. The relationship of economic theory and the actual practices within the transportation industry will be compared. The concept of effective utilization of transportation resources is considered along with the resultant economic consequences of the substitution of one mode for another.

20.333 International Trade

Emphasis in this course will be placed on the export and import of commodities and their importance to Canada. Studies will cover procedures, rule, and regulations necessary for international shipments. Developing techniques for the movement of goods throughout the world will be examined. The practical approach is emphasized. The intent of this course is to assist the student to understand the complexities of international trade, and the terminology of international trade, and the activities involved within international trade as it is happening on the local and foreign scenes.

20.371 Advertising and Sales Promotion

Advertising philosophy and purpose.. Organization of the advertising function. Relationship of advertising to other business divisions. Advertising planning. The business management of advertising. The creative process. Research. Media—newspaper, radio, TV, magazines, direct mail, outdoor, public relations. Copy, layout, art. Strategies and campaigns. Production and communications. Controls. Evaluating results. The course is designed to make the student a competent advertising critic.

20.372 Consumer Behaviour

An examination of consumer purchase decisions. Special emphasis will be placed on areas such as motivation and arousal, perception, attitude and attitude change, and consumer decision processes.

20.382, 20.482 Marketing Research

The purpose is to examine the basic approaches to marketing research, discuss the technique tools and relate these tools to the decision-making process. Emphasis is placed on the use of market research in the total marketing decision concept. Special applications of marketing research and simulated real-life situations will be examined.

20.411 Merchandising

While most marketing courses emphasize the selling aspects, this course deals with the other side of selling—buying. The importance of selecting the right type of merchandise assortment, techniques of buying, vendor services available, inventory planning and control methods, etc., are considered. Merchandising in four different areas are dealt with—retailing, wholesaling, international business, and industrial buying.

20.422 *See* 20.322.

20.432 *See* 20.332.

20.434 Transportation Regulation

An analysis of current transportation legislation both at the Canadian and international levels is made, with reference to duties and liabilities of carriers and those whom they serve. A study of common and statutory law relating to passengers, freight, etc., is vital to those engaged in transportation services.

20.435 Distribution Management

The wide range of storage and warehousing includes diverse matters as inventory control, palletization, unitization, containerization, packaging, locational analysis and general materials handling, and these areas form the content of this course.

20.436 Transportation Trends

The evolution taking place in transportation is of such magnitude that investigations in these areas are mandatory if the student is to be aware of what is going on now, and what is likely to occur. Advancements in rapid transit, automated passenger and freight terminals, new equipment, improvements to existing equipment, etc., merit study and analysis, if the student is to embark on a transportation career.

20.437 Marketing Research for Transportation

The purposes of the course are to provide the student with a knowledge of the procedures and applications of marketing research within the context of the business firm involved in the transportation field. Case studies and problems will be used to incorporate the practical aspects.

20.482 *See* 20.382.

20.484 Transportation and Distribution Management

The total distribution concept has undergone many rapid changes over the past few years. The Canadian transportation scene will be investigated in detail because of its importance to our economy. Included in these studies will be an analysis of the various modes of transportation, our trade patterns with foreign lands, techniques of moving goods between shippers and receivers, materials handling and storage and related activities.

20.490 Directed Studies

Seven hours of the student's time-table are allocated to two major projects. The projects are to be in marketing areas of the student's choice and carried out under the guidance of assigned faculty members.

20.700 Agricultural Business

The course objective is to introduce the application of business skills to agribusiness and to study in particular the marketing functions as related to the marketing of agricultural products and services. Case studies and readings are used to relate to the practical problems of agribusiness.

20.701 Wood Product Marketing

An introduction to the marketing environment and marketing institutions in the wood products industry. Study of the basic marketing functions: marketing research, product planning, selection of trade channels, merchandising, advertising and sales promotion. Case studies and readings used to relate to the practical problems of the wood products industry.

OPERATIONS MANAGEMENT

22.100, 22.200 Applied Mathematics and Statistics

The fundamentals of descriptive statistics and a comprehensive study of the use of statistical inference are integrated with applied mathematics and are covered concurrently over a one-year period.

Basic algebra, trigonometry, and graphs with business applications are reviewed. The course is tailored to the needs of the Operations Management Technology and topics included are basic mathematics of finance, simple and compound interest, loan-payment plans, methods of evaluating investments, probability theory and distributions, sampling, hypothesis testing, chi-square, rank correlation, linear regression, and index numbers.

22.101 Introduction to Operations Management

A study of the business firm with respect to its organization and functions. Emphasis will be placed on how the Operations Management graduate will fit into the organization. This will be accomplished through discussions, field trips to local industries, and related case problems.

Additional areas of interest will include business law and Government regulations involving the working environment.

22.110 Business Mathematics

Review of basic mathematics applicable to business and industry; mathematics of finance, including retail operations, simple and compound interest, discounts, annuities, financial papers, and depreciation methods. Emphasis is on practical applications as applied to Business Administration.

22.114 Applied Mathematics

Review of basic algebra, graphs, and logarithms with business applications. Mathematics of finance, simple and compound interest, loan-payment plans, annuities, methods of evaluating investments, and an introduction to probability theory.

22.116 Business Mathematics

Review of basic mathematics applicable to business and industry; mathematics of finance, including retail operations, simple and compound interest, discounts, annuities, financial papers, and depreciation methods. Emphasis is on practical applications as applied to the field of Financial Management.

22.118 Business Mathematics

Review of basic mathematics applicable to business and industry; mathematics of finance, including retail operations, simple and compound interest, discounts, annuities, financial papers, and depreciation methods. Emphasis is on practical applications as applied to the Hotel, Motel industry.

22.120 Business Mathematics

Review of basic mathematics applicable to business and industry; mathematics of finance, including retail operations, simple and compound interest, discounts, annuities, financial papers, and depreciation methods. Emphasis is on practical applications as applied to the Marketing area of business.

22.200 *See* 22.100.

22.201 Method Study and Procedure Analysis

The student studies the basic systematic approach to problem solving in work environments.

The course includes problem definition, systems of data collection, information analysis, and determination of the best possible solution by applying quantitative techniques.

Other areas include office procedure analysis and facility layout.

22.202 Computer Programming—Applied Fortran IV

Instruction in the FORTRAN IV computer-programming language with emphasis on the solution of problems common to the Operations Management discipline. Topics include program flow-charts (the design phase), arithmetic operations, input/output operations, array manipulation, subprograms, program testing, and program debugging.

22.210 Business Statistics

Major emphasis on descriptive statistics, including numerical and graphical presentation of data, measures of central tendency and dispersion, elementary probability, index numbers, and time series. Introduction to inferential statistics through selected topics as sampling, confidence limits of the mean, hypothesis testing, and simple linear regression. The course is tailored, where possible, to the needs of the Administrative Management Technology.

22.214 Statistics in Business and Industry

Fundamentals of descriptive statistics and a comprehensive study of the use of statistical inference. Topics include probability theory and distributions, sampling, hypothesis testing, chi-square, rank correlation, linear regression, and index numbers. The course is tailored to the needs of the Computer Programming and Systems Technology.

22.216 Business Statistics

Major emphasis on descriptive statistics, including numerical and graphical presentation of data, measures of central tendency and dispersion, elementary probability, index numbers, and time series. Introduction to inferential statistics through selected topics as sampling, confidence limits of the mean, hypothesis testing, and simple linear regression. The course is tailored, where possible, to the needs of the Financial Management Technology.

22.220 Business Statistics

Major emphasis on descriptive statistics, including numerical and graphical presentation of data, measures of central tendency and dispersion, elementary probability, index numbers, and time series. Introduction to inferential statistics through selected topics as sampling, confidence limits of the mean, hypothesis testing, and simple linear regression. The course is tailored, where possible, to the needs of the Marketing Management Technology.

22.247 Basic Operations Management

Management problem-solving and work simplification with particular application to the Natural Gas and Petroleum Industry. Includes method study, some measurement techniques, plant layout, planning and scheduling.

22.300, 22.400 Quantitative Methods for Management I and II

Applications of the scientific method and mathematical modelling to decison-making in business and industry. Topics include break-even analysis, additional probability and decision theory, inventory control, vectors, matrices, linear programming, simulation models, and queuing theory.

22.304, 22.404 Production Control Management I and II

Introduction to the basic concepts of production control, with a special emphasis on the design of control systems for operating environments. Practical experience in controlling a production system will be given through the operation of a simulated production shop. Topics include scheduling, planning, organization of production departments, dispatching and progress control, maintenance, and quality control.

22.305, 22.405 Management Information Systems I and II

Introdutcion to computer systems design and the application of the computer in the Operations Management field. Topics include computer hardware, computer software, computer systems flow-charts, selected application packages, file organization techniques, and computer resources in the community.

At the conclusion of this course the student will have a broad appreciation of the application, both current and potential, of the computer in the business world.

22.306, 22.406 Industrial Engineering

This course covers the major areas of industrial engineering. It includes performance measurement, materials handling, facility design, and cost analysis.

There will be an opportunity to apply these to a group of relevant case and real life problems.

22.310 Management Engineering I

Scientific approach to problem-solving, with particular application to administrative management problems. Includes method study, systems and procedures, charting and analysis, forms design and control, work distribution, layout, planning and scheduling, measurement and costing.

22.314 Introduction to Operations Research

An introduction to the use of mathematics in decision-making in business, with special emphasis on applications that are commonly solved through the use of a computer. Topics include expected value, marginal analysis, linear programming, scientific inventory management and simulation.

22.318 Basic Management Engineering

Approaches to problem-solving and work simplification, with particular application to hotel and restaurant operations. Includes method study, some measurement techniques, layout, and systems concepts.

22.320 Management Engineering I

The scientific approach to problem-solving, with particular application to business enterprises. Topics include method study, systems and procedures, charting and analysis, forms design and control, work distribution, layout, planning and scheduling, work measurement, and costing. The course material is slanted toward the needs of the traffic and transportation side of marketing.

22.334 Management Engineering I

The scientific approach to problem-solving, with particular application to business enterprises. Topics include method study, activity sampling, layout, forms design and control, the critical path method of scheduling and planning, work measurement, and costing. The course work will be slanted toward the Computer Programming technologist's needs.

22.339 Basic Operations Management

The study of problem-solving in industry, with particular emphasis on heavy construction and manufacturing problems. The course includes method study, process charting, activity-sampling, work measurement, motion economy, and productivity. Special emphasis is placed on the human problems associated with change. The course is particularly slanted toward Civil Engineering.

22.342 Operations Management I

This course covers the material shown for 22.339; however, it is a longer course and continues into 22.442, Operations Management II. *See* 22.442 for additional topic listing.

22.346 Operations Management I

The study of problem-solving in industry, with particular attention being given to the Forest Resource industry. Topics include method study, work measurement, process charting, activity-sampling, motion economy, and productivity. Worker-management relations are also considered throughout the course.

22.349 Operations Management I

The scientific approach to the problem-solving in industry, with special emphasis on problems in the Mechanical Engineering field. Studies include method study, work measurement, process charting, activity-sampling, motion economy, and productivity. Relationships with management are also considered through the course.

22.400 *See* 22.300.

22.401 Industrial Engineering Concepts

A comprehensive external study in a local firm requiring the application of material from various recordings and analysis of data from the field, terminating in a written report and an oral presentation of the project.

22.404 *See* 22.304.

22.405 *See* 22.305.

22.406 *See* 22.306.

22.407 Market Research

The familiarization with the basic approaches to market research. Lectures and workshop sessions will emphasize data gathering techniques, the analysis and interpretation of data related to the decision-making process.

22.408 Supervision

This course introduces the student to some of the skills required to implement short-range managerial decisions with the resources available at the first level of supervision.

22.410 Management Engineering II

A continuation of 22.310, involving the practical application of techniques right in business organizations. These are "live" projects which require research and detailed analysis plus the preparation of technical reports and a presentation to management and instructors.

22.420 Management Engineering II

A continuation of 22.320, involving the practical application of problem-solving techniques in business organizations. The student works on "live" projects requiring research and detailed analysis plus the preparation and presentation of technical reports to managers and instructors. The course is tailored for the needs of the Traffic and Transportation Marketing student.

22.434 Management Engineering II

A continuation of 22.334, involving the application of scientific problem-solving techniques used in business organizations. The projects require research and detailed analysis plus the preparation and presentation of technical reports to managers and instructors.

22.439 Basic Operations Management

The techniques of management problem-solving and work simplification, with particular application to engineering and industrial organizations. Includes method study, some measurement techniques, layout, planning and scheduling. The course is slanted toward practical applications in the field of Mechanical Engineering.

22.440 Basic Operations Management

The techniques of management problem-solving and work simplification, with particular application to engineering and industrial organizations. Includes method study, some measurement techniques, layout, planning and scheduling. The course emphasizes practical applications in the building field.

22.441 Basic Operations Management

The techniques of management problem-solving and work simplification, with particular application to engineering and industrial organizations. Includes method study, work measurement, layout, planning and scheduling. The course is slanted toward problems in the Chemical and Metallurgical industries.

22.442 Operations Management II

Planning, scheduling, job loading and levelling, plant layout, and critical path network diagrams are considered and used in industry-type projects. The course is completed when the student submits a term project which encompasses much of the material studied in class. The projects are designed to meet the needs of the Civil Engineering student.

22.444 Basic Operations Management

The techniques of management problem-solving and work simplification, with particular application to engineering and industrial organizations. Includes method study, some measurement techniques, layout, planning and scheduling. The course emphasizes practical applications in the field of Biological Sciences.

22.446 Operations Management II

Planning and scheduling, job loading and levelling, network diagrams, and plant layout are considered in practical applications. The student works on a term project in an industrial plant. The course is completed when the student submits the term project which encompasses much of the material studied in class. The course emphasizes problem-solving in the Forest Resource industry.

22.449 Operations Management II

Planning and scheduling, job loading and levelling, network diagrams, and plant layout are considered in practical applications. The student carries out studies in an industrial plant and presents a term project which encompasses much of the course material studied in class. The course and project work are closely associated with the Mechanical Engineering field.

22.E01 Management Engineering I

The development of the scientific principles of problem-solving covering the selection, recording, and examination of data leading to improved systems of management combined with the basic principles of office layout.

22.F01 Management Engineering II

A continuation of the scientific principles into analysis of paper flow, forms design, and application of self-recording methods of work measurement as well as work-sampling techniques. The study of an actual department with the presentation of a formal report in respect to the field project.

CHEMISTRY

30.101 Applied Chemical Principles

An applied course of basic inorganic chemistry, including simple stoichiometry, solubility product, selective precipitation, solution preparation, pH, buffer solutions, oxidation-reduction, acid-base theory, and titration calculations. Laboratory work consists of simple qualitative and quantitative analysis. Good laboratory techniques are emphasized.

30.102 General Chemistry

A basic chemistry course, including equation-balancing, solubility product, precipitate formation, molecular and ionic equilibria, oxidation-reduction, pH, neutralization, buffer solutions, applied gas laws, and titration calculations. Laboratory work emphasizes basic concepts and a variety of measurement techniques.

30.A03, 30.B03, 30.C03 General Chemistry for Health Technologists

This course includes basic inorganic and physical chemical principles, an introduction to organic chemistry, the properties and reactions of the major classes of organic compounds as well as a selection of biochemical materials such as carbohydrate and fat metabolism, amino acid metabolism, properties of proteins and their synthesis, enzyme action, hormones, pesticides, and herbicides.

Laboratory work consists of quantitative analysis, with emphasis on gravimetric and volumetric techniques, organic techniques and synthesis, properties of biological materials, enzyme reactions, and physical methods of analysis.

30.201 Applied Chemical Principles

A continuation of 30.101 that includes theory of gravimetric and volumetric analysis, titration curves, chemical kinetics, simple physical chemistry, atomic structure, ionic and covalent bonding, periodicity, and descriptive organic chemistry of selected groups. Laboratory work consists of qualitative and quantitative analysis, and physical separations.

30.202 General Chemistry

A continuation of 30.102 that includes bonding theory; physical behaviour of gases, liquids, and solids; electrochemistry; periodic trends in chemical propetries of inorganic materials; and preparation and uses of some common industrial materials. Laboratory work consists of simple volumetric and instrumental chemical analysis.

30.B03 *See* 30.A03.

30.204 Chemical Laboratory Techniques

This course teaches basic techniques in sampling, weighing, moisture determination, ashing, extractions, filtration gravimetric methods, volumetric methods. Instrumental analysis and separation methods will be described, demonstrated, and, whenever possible, practised.

30.301, 30.401 Organic Chemistry

A general course covering properties, preparations, and reactions of all major classes of organic compounds—aliphatic and aromatic hydrocarbons, halides, alcohols, ethers, carboxylic acids and derivatives of carboxylic acids, aldehydes ketone, amines, amino acids, carbohydrates, heterocyclics, dyes, and polymers.

Laboratory work emphasises organic techniques, qualitative chemical analysis, and instrumental methods, infra-red, ultra-violet, and gas chromatography.

30.302 Physical Chemistry

This course presents the kinetic theory of gases, the first and second laws of thermodynamics, phase equilibria, chemical kinetics, and catalysis.

Laboratory work consolidates lecture material and gives experience in practical physical chemical measurements.

30.303 Instrumental Analytical Methods

This course introduces basic theoretical concepts, instrument construction and operation, and general application of the following methods: potentiometry, polarography, refractometry, polarimetry, visible, ultra-violet, and infra-red, and includes absorption and emission flame photometry and gas chromatography.

30.C03 *See* 30.A03.

30.306, 30.406 Analytical Chemistry

Conventional inorganic methods of analysis for the determination of the common metals in ores and alloys. Basic methods of fire assaying for gold and silver. Advanced analytical techniques using various instruments such as the polargraph, spectrophotometer, colorimeter, gas chromatograph, refractometer, spectograph, X-ray scintillometer, X-ray diffractometer, etc.

30.401 *See* 30.301.

30.404 Organic Chemistry

This course presents a survey of the properties and common reactions of the classes of organic compounds which are found in petroleum, or are of importance in the petrochemical industry. The chemistry of the refining processes, instrumental laboratory analysis, and synthesis of some petrochemicals are presented.

30.405 Chemical Instrumentation

This course presents the basic instrument componets, their characteristics, and their modular construction in analytical instrumentation. The emphasis is on signal flow and the information represented by the same. Basic design patterns, as well as practical aspects of servicing, are presented with references to pH meters, polarographs, titrators, spectrophotometers, gas chromatographs, rate meters and scalers, chemical signal sources, electrical components, operational amplifiers as multipliers, subtractors, function generators, and servo-systems.

30.406 *See* 30.306.

ENGLISH

31.101, 31.201 Communication (primarily for the Engineering Division)

This course introduces the forms of technical reporting commonly used in industry. In addition to the basic principles, format, and mechanics of technical writing, students study and practice oral and audio-visual presentations and the industrial uses of graphics, photo slides, film and video tape. Practical examples from and trends in the modern technological environment are also examined.

31.A01, 31.B01, 31.C01 Technical Writing (primarily for students in the Electrical and Electronics Technology and the Biomedical Electronics Technology)

This course introduces the forms of technical reporting commonly used in industry—proposals, instructions, field and laboratory reports, progress and periodic reports, specifications, memoranda, letters and formal reports. Students also receive practice in oral communication and study the industrial uses of other media such as film and video tape.

31.102, 31.202 Communication (primarily for the Business Management Technologies)

Introduction to general principles in written and oral communications and their application to business.

31.A02, 31.B02, 31.C02 Communication (primarily for Health Data Technology)

Introduction to general principles in written and oral communications and their application to business.

31.E04, 31.F04, 31.G04, 31.H04 Modern Literature (English 100 Equivalent)

The student successfully completing this course will be able to demonstrate, in writing and orally, a knowledge of the main trends, developments, styles and themes in modern English literature, and will also demonstrate ability to handle ideas and express feelings in words.

31.105, 31.205 Communication for Broadcasters

An introduction to general principles of written, oral, and visual communications and their application to the broadcast industry.

31.A06, 31.B06, 31.C06 Communication (primarily for Environment and Public Health students)

Introduction to general principles of written and oral communications, with considerable emphasis on all phases of public speaking.

31.107, 31.207 Reading Improvement (noncredit course)

One hour per week in class with no outside class assignments. 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, prereading, note-taking and study habits.

31.A08, 31.B08, 31.C08 Communication (primarily for Medical Radiography, Nuclear Medicine, and Medical Laboratory Technologies)

Introduction to general principles of written and oral communication and their application in contemporary society, with particular attention to the Health field.

31.A09, 31.B09, 31.C09 Contemporary Studies I

A study of futures—questioning current views of the future; examining theoretical alternative futures; rèfining views of the future; selecting basic tools for future-imagining. Some emphasis will also be placed on communication skills, especially writing and speaking.

31.A11, 31.B11, 31.C11 Directed Reading

The student will plan and execute a study program in an area of English, with subject-matter and meeting-times to be arranged with the instructor. NOTE—This course is intended for, and limited to, students who fulfil the following requirements:

(*a*) Are capable of some initiative and independent study; and

(*b*) Wish, for any reason, to take an English credit course in first year, but have been granted credit exemption from Modern Literature and/or Contemporary Studies I (i.e., transfer credit for courses already taken elsewhere).

31.112, 31.212 Tutorials in English Language (primarily for students whose first language is not English)

This course will attempt to bring students up to the minimum requirement for proficiency in speaking and writing.

31.201 *See* 31.101.

31.B01 *See* 31.A01.

31.202 *See* 31.102.

31.B02 *See* 31.A02.

31.B04 *See* 31.A04.

31.205 *See* 31.105.

31.207 *See* 31.107.

31.B08 *See* 31.A08.

31.B09 *See* 31.A09.

31.B11 *See* 31.A11.

31.301, 31.401 Industrial Communication (primarily for the Engineering Division)

This course continues the work of the first year with emphasis on three levels of communication—interpersonal, small group, and large organizational. The student explores these areas through assignments in various kinds of technical writing, public speaking, and presentation of information in visual and aural media. Practical examples are selected from the local governmental and industrial environment.

31.C01 *See* 31.A01.

31.302, 31.402 Communication (primarily for the Business Management Technologies)

Students will continue the work of the first year with emphasis on communication theory and on practical problems in the interpretation, evaluation, organization, and presentation of data in both written and oral form.

31.C02 *See* 31.A02.

31.C04 *See* 31.A04.

31.305, 31.405 Communication for Broadcasters

This course continues the work of the first year at a higher level.

31.C08 *See* 31.A08.

31.C09 *See* 31.A09.

31.C11 *See* 31.A11.

31.C12 Corrective Language

Intensive tutorial-type classes for students who need further practice in composition skills. For such students, this is a required course, and is normally taken in the third quarter of the first year, in place of 31.C04, 31.C09, or 31.C11.

31.401 *See* 31.301.

31.402 *See* 31.302.

31.405 *See* 31.305.

31.F04 *See* 31.E04.

31.G04 *See* 31.E04.

31.G06 Communication (primarily for Environmental and Public Health students)

The work of the first year is carried on at a higher level.

31.G09 Contemporary Studies II

This course involves visits to off-campus locations; observation, discussion, reports on work contexts, and the communication environment.

31.G11 Independent Study

Individual projects and assignments, planned and executed by the student in consultation with the instructor, and relevant to the general concerns of the modern English field. This is a more advanced course in the series 31.A11, 31.B11, 31.C11.

NOTES—

(1) No courses have prerequisites, unless so stated.
(2) Any elective may be limited to maximum of 15 students.
(3) Any elective having insufficient numbers may be deleted from the Department's offerings in that quarter.

31.H04 *See* 31.E04.

MATHEMATICS

32.XYZ Mathematics for the Engineering Technologies (Except Electrical and Electronics Technology and Surveying Technology)

NOTES—

(1) For a technology whose two-year program is arranged over four terms: Units of study are indicated by the subject name(s) and the subject number 32.XYZ, where X denotes the term in which the subject is offered, and Y and Z denote the unit numbers (listed below) associated with that term, e.g., 32.223 Calculus I and II indicates a mathematics course running in term 2 and consisting of units 2 and 3.

(2) For a technology whose two-year program is arranged over six quarters: Units of study are indicated by the subject name and the subject number 32.XYZ, where X denotes the quarter in which the subject is offered, and YZ denotes the number of the technology concerned, e.g., 32.B41 Calculus I indicates a first unit of Calculus running in quarter B for technology 41, i.e., Chemical and Metallurgical Technology.

The units of study are as follows:

Unit 1. Basic Technical Mathematics

Topics in algebra, trigonometry, and analytic geometry, with emphasis on technical applications; prerequisite for the courses described in Units 2 to 6.

Unit 2. Calculus I

An introductory course in calculus and its applications, involving the differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions.

Unit 3. Calculus II

Further calculus topics and applications; conics and calculus problems associated with these; power series; partial differentiation; differential equations.

Unit 4. Statistics I

An introduction to statistics. Organization and presentation of data; measures of central tendency and dispersion; frequency distributions; sampling; estimation; hypothesis testing; regression.

Unit 5. Numerical Methods I

Elementary numerical methods in theory and practice; iterative methods in the solution of algebraic and transcendental equations; finite differences; interpolation; numerical differentiation and integration; numerical solution of simple differential equations.

Unit 6. Special Topics—Calculus III, or Statistics II, or Analytic Geometry, or Spherical Trigonometry, or Numerical Methods II

Further applied mathematics topics of special importance in the student's chosen technology, within one of the categories shown above.

32.A70, 32.B70, 32.C70 Mathematics for Medical Laboratory Technology

32.A70 Basic Mathematics (Health)

Logarithms; base ten, general base, natural logarithms. Logarithmic and exponential functions with applications. Use of logarithmic graph paper. Functions and graphs.

32.B70 Calculus (Health)

The derivative. Differentiation of algebraic functions. Maximum and minimum problems; curve sketching. Differentiation of logarithmic and exponential functions. Rate of change; related rates of change. Small change and error calculations. Integration; area as integral. Simple differential equations.

32.C70 Statistics (Health)

Descriptive statistics. Measures of central tendency and spread. Probability. The binomial and normal distributions. Sampling; estimation; hypothesis testing.

32.B72 Mathematics for Medical Radiography Technology

32.B72 Basic Mathematics (Health)

Exponents and logarithms, common and natural; logarithmic and exponential equations; log-log and semi-log graphs. Plane geometry and its applications. Special topics; applications to specific branches of Health Technology.

32.A74, 32.B74, 32.C74 Mathematics for Nuclear Medicine Technology

32.A74 Basic Mathematics (Health)

Exponents and logarithms (common and natural); logarithmic and exponential equations; graphical analysis; linear and curvilinear regression analysis.

32.B74 Statistics (Health)

Descriptive statistics; large and small sample theory; hypothesis testing; correlation; chi-squared distribution; probability and logit-log graph papers; applied statistics.

32.C74 Calculus (Health)

Differential and integral calculus with applications; basic differential equations with applications from tracer studies.

32.A78, 32.B78, 32.C78, 32.E78, 32.C79 Mathematics for Biomedical Electronics Technology

32.A78, 32.B78, 32.C78, 32.E78

These courses are similar to 32.A90, 32.B90, 32.C90, and 32.E90 respectively, with applications throughout appropriate to the Biomedical Electronics field.

32.C79 Numerical Methods and Computing

An introduction to numerical methods. Solution of systems of equations, roots of polynomials, interpolation, numerical solution of differential equations. The formation of algorithms, flowchartery. Students will write programs for the IBM 370, using the Fortran language.

32.A80, 32.B80, 32.C80 Mathematics for Health Data Technology

32.A80 Basic Mathematics (Health)

Topics in algebra, logarithms, functions, and graphs, with appropriate applications.

32.B80 Introductory Statistics (Health)

Descriptive statistics, organization and graphical presentation of data, measures of location and variation, frequency distributions, sampling.

32.C80 Further Statistics (Health)

Further topics in statistics of special importance in the Health Data field.

32.A82, 32.B82, 32.C82, 32.F82 Mathematics for Environmental Technology—Public Health

32.A82 Basic Mathematics (Health)

Measurements, system of units; review of algebra, linear and quadratic equations, functions and graphs; exponents and logarithms, common and natural; logarithmic and exponential equations; log-log and semi-log graphs.

32.B82 Mathematics (Health)

Trigonometric functions and graphs; sine and cosine laws; areas and volumes of irregular shapes; latitude and longitude; descriptive statistics, and introduction to probability.

32.C82 Statistics (Health)

Binomial and normal distributions; sample mean, and estimation; hypothesis testing; regression and correlation.

32.F82 Introduction to Computers

Introduction to computers, elements of a computer language, use of subprograms. Problem solving, algorithms, mathematical models.

32.A90, 32.B90, 32.C90, 32.E35, 32.E90 Mathematics for Electrical and Electronics Technology

32.A90 Basic Mathematics (Electrical)

Linear equations, matrices, and determinants, with applications to mesh circuits analysis. Logarithmic and exponential functions, with applications to transient and power problems. Trigonometry, with emphasis on wave-forms, vectors, and use of identities. Complex numbers and their use in a.c. circuit calculations.

32.B90 Calculus I (Electrical)

An introductory calculus course dealing with the following topics, with applications throughout in the electrical and electronic fields: The differentiation and integration of algebraic, trigonometric, exponential, logarithmic, and hyperbolic functions.

32.C90 Calculus II (Electrical)

A further calculus course with appropriate applications in the field, dealing with techniques of integration, first and second order differential equations, partial differentiation, infinite series, elementary numerical methods.

32.E35 Introductory Probability for Telecommunications

Descriptive statistics—organizing of data, arithmetic, and geometric descriptions. Notions of Probability and the Random Variable—sample space, probabilities of simple and compound events, the random variable. Probability Distributions—binomial, Gaussian (normal), Rayleigh with applications. Arithmetic descriptions of Stochastic Processes.

32.E90 Transform Calculus (Electrical)

Laplace transforms; transform pairs of functions and operations, inverse transforms, applications to circuits involving integro-differential equations the transfer function, pole-zero configurations. Analysis in the s-domain.

32.151, 32.251, 32.351, 32.451 Mathematics for Surveying Technology

32.151 Basic Mathematics

Logarithmic theory; Euclidean and analytical geometry; plane trigonometry; spherical trigonometry.

32.251 Calculus

Derivatives; Taylor's and Maclaurin's series; the differential; partial derivatives; the definite and indefinite integral; multiple integrals.

32.351 Statistics

Descriptive statistics; probability and distribution; sampling and estimation; error theory; quality control.

32.451 Matrix Algebra and Least Squares

Basic matrix algebra operations; least square theory; correlates; solution of normal equations.

32.444 Computing for Biological Sciences Technology

32.444 Computing for Biological Sciences Technology

An introduction to digital computing, using the IBM 370 system and the Fortran language; flow-charting, Fortran statements, input and output statements; elementary numerical methods; applications from the biological sciences, especially in the area of statistics.

PHYSICS

33.101, 33.201 General Physics

This course is designed for the Mining and Natural Gas and Petroleum Technologies. General topics covered include kinematics, dynamics, friction, statics, angular motion, energy, momentum, simple machines, properties of matter, fluid mechanics, temperature and heat, thermal properties of matter, basic electricity and magnetism, wave motion and sound, electromagnetic waves, optics, atomic and nuclear phenomena. The laboratory program stresses the subjects of measurement, data analysis, and technical report writing. Mathematical treatment requires only algebra and trigonometry. The applications of the general topics are relevant to the Mining and Natural Gas and Petroleum Technologies. A special feature of the course is the coverage of exploration geophysics in the laboratory part of 33.201 in the form of lectures and laboratory projects. This work is in preparation for second year courses 33.304 (Mining) and 33.406 (Natural Gas and Petroleum).

33.102, 33.202 Physics for Biological Science Technology

This course covers somewhat the same general topics as 33.101, 33.201, but with level, application and emphasis relevant to the Biological Sciences Technology.

33.104, 33.204 Physics for Building Technology

This course covers somewhat the same general topics as 33.101, 33.201, but with application and emphasis relevant to the Building Technology. This course has no laboratory program. Problem-solving is stressed.

33.A05 Basic Physics for Nuclear Medicine

An introductory course covering topics of force and motion, energy, d.c. electricity, electromagnetism, a.c. electricity, and some basic electronics related to nuclear instrumentation.

33.A06, 33.B06, 33.C06 Physics for Electrical and Electronics Technology

This course covers somewhat the same general topics as 33.101, 33.201, but with application and emphasis relevant to the Electrical and Electronics Technology. A special feature of the course is a section on the physics of semi-conductors.

33.107, 33.207 Physics for Civil and Structural Technology

This course covers somewhat the same general topics as 33.101, 33.201, but with application and emphasis relevant to the Civil and Structural Technology. Special topics include the application of geophysical exploration techniques in the construction industry.

33.A09, 33.B09, 33.C09 Physics of Medical Radiography

This course emphasizes the application of physical phenomena in Medical Radiography. It includes the structure and physical properties of matter, static electricity, direct and alternating current, magnetism, mechanics, energy, wave motion, thermodynamics, optics, quantum concepts, production of X-rays, interaction of X-rays with matter, radioactivity, X-ray tubes, and photomultipliers and other detectors of radiation.

33.A10, 33.B10, 33.C10 Physics for Medical Laboratory Technology

This course covers the same general topics as 33.101, 33.201, but with application, level, and emphasis relevant to the Medical Laboratory Technology.

33.111, 33.211 Physics for Instrumentation Technology

This course covers the same general topics as 33.101, 33.201, but with application and emphasis relevant to the Instrumentation Technology.

33.A12, 33.B12, 33.C12 Physics for Environmental Health Technology

This course covers the same general topics as 33.101, 33.201, but with level, applications, and emphasis relevant to the Environmental Health Technology.

33.114, 33.214 Physics for Chemical and Metallurgical Technology

This course covers the same general topics as 33.101, 33.201, but with emphasis and application relevant to the Chemical and Metallurgical Technology.

33.115, 33.215 Physics for Surveying Technology

This course covers the same general topics as 33.101, 33.201, but with application and emphasis relevant to the Surveying Technology. Special topics include electromagnetic distance measuring.

33.117, 33.217 Basic Science for Operations Management Technology

This is a survey course covering the general topics of physics as they relate to the Operations Management Technology. The use of precise mathematical relationships is minimal. Emphasis is on how the basic laws of physical science affect and limit activities in the technology.

33.118, 33.218 Physics for Forest Products Technology

Ths course covers the same general topics as 33.101, 33.201, but with application, level, and emphasis relevant to the Forest Products Technology.

33.201 *See* 33.101.

33.202 *See* 33.102.

33.204 *See* 33.104.

33.B05 Radioactivity

This course, for Nuclear Medicine Technology, provides details of the elements of physics related to radioactivity and radiation phenomena. Major topics are the nucleus, nuclides, X-rays, radioactivity, modes of radioactive decay, nuclear reactions, fission, interaction of radiation with matter, and the production of radio-nuclides.

33.B06 *See* 33.A06.

33.207 *See* 33.107.

33.B09 *See* 33.A09.

33.B10 *See* 33.A10.

33.211 *See* 33.111.

33.B12 *See* 33.A12.

33.214 *See* 33.114.

33.215 *See* 33.115.

33.216 Physics for Mechanical Technology

This course covers the elements of wave motion, sound, light, optics, basic electricity, and magnetism, and the fundamentals of nuclear energy.

33.217 *See* 33.117.

33.218 *See* 33.118.

33.C05, 33.E05 The Measurement of Radioactivity

This course, for the Nuclear Medicine Technology, covers the theory of instrumentation used for detecting and analysing alpha, beta, gamma, and neutron radiation in a modern nuclear medicine laboratory. Topics include statistics, determinate errors, detectors (scintillation, ionization chambers, Geiger-Muller, proportional, semiconductor, solid state), gamma spectrometers, liquid scintillation counting, radionuclide scanning and collimation, gamma camera.

33.304 Mining Geophysics

This course given to the Mining Technology, consists of laboratory and field work on geophysical methods of mineral exploration and development.

33.C06 *See* 33.A06.

33.C09 *See* 33.A09.

33.C10 *See* 33.A10.

33.C12 *See* 33.A12.

33.406 Petroleum Geophysics

This course, given to the Natural Gas and Petroleum Technology, consists of lectures on geophysical methods used in the exploration for natural gas and petroleum. In view of the material covered in the laboratory part of 33.201, emphasis is placed on seismic methods and well logging techniques.

33.E05 *See* 33.C05.

33.E30, 33.F30, 33.G30 Biophysics

A study of biophysics for the Biomedical Electronics Technology which covers mechanics, electricity, magnetism, waves, and heat. The emphasis in lectures, seminars, and projects is on the application of the physics to biological systems.

33.F30 *See* 33.E30.

33.G30 *See* 33.E30.

BUILDING

40.101 Draughting and Design

Elementary draughting techniques; lettering; orthographic, isometric and axonometric projection; perspective; shades and shadows. History of architecture with specific reference to technological development.

40.102, 40.202 Building Construction

Principles of building construction in terms of the assembly of materials; examination of typical systems of wood and masonry construction; study of architectural detailing.

Origins and purposes of building regulations; typical zoning and building by-laws; National Building Code; other Acts, codes, by-laws.

Aspects of common law and law of contract related to building premises.

Application of the above to the preparation of working drawings, in coordination with courses in Building Structures and Building Services.

40.103, 40.203 Building Services

Introduction to building service systems, in regard to water supply, drainage, heating, ventilating, and electrical illumination.

40.104, 40.204 Construction Specifications and Estimating

Fundamentals of the construction industry—land, buildings, contracts, and people. Introduction to basic construction materials and methods. Specific aspects of contracts and contract documents; construction specifications; construction work and the analysis of its costs through unit prices.

40.201 Draughting and Design

Fundamentals of design, with accent on functional aspects; planning and organization of residential space; design of simple, utilitarian objects; elementary architectural design problems and presentation techniques.

40.202 *See* 40.102.

40.203 *See* 40.103.

40.204 *See* 40.104.

40.208 Landscape Draughting (Biological Sciences Technology)

Elements of building construction relative to grading and drainage; concrete foundations; retaining walls; stud and joist framing; patios, terraces. Detailing of screens, trellises; glazing. Draughting related to the above; estimating; specifications. Some visiting lecturers.

40.301, 40.401 Design

Short history of contemporary architecture and building. Conceptualization and planning; theory, æsthetics and structure as integral parts of the design process. Project realization. Graphics; freehand drawing and sketching of architectural and related subjects; advanced perspective drawing in variety of media; model-making. Guest lecturers and field trips.

40.302, 40.402 Building Construction

Principles of construction as applied to heavy timber, steel, and concrete framed buildings; site fabrication and assembly; prefabrication.

Theory of selection and location of materials in the building. Extensive preparation of working drawings throughout. Trips to building sites and plants.

40.303, 40.403 Building Services

Ventilation; air conditioning; electrical systems and power supply; mechanical equipment; acoustics.

Preparation of working drawings related to above, and to projects in Design and Building Construction. Field trips.

40.304, 40.404 Construction Specifications and Estimating

Techniques of specifying and measuring construction work for estimating and bidding; practical applications in estimating the costs of various kinds of construction work, particularly wood-frame and reinforced-concrete systems. Introduction to construction economics, labour productivity, and cost accounting; the financial aspects of construction contracts; estimating various types of construction work.

40.305, 40.405 Building Services Systems

Gas supply systems; hot-water space-heating system design; practical fan laws; air-cleaning; steam-coil air-heating; hot-water coil-heating; combined direct radiation and coil-heated air-heating and ventilating systems; temperature control for space-heating and air-conditioning processes and design; air-conditioning controls.

40.306, 40.406 Land and Construction Economics

Principles of real property valuation, methods of appraisal, property assessment for taxation purposes, use of the assessment manual, land registration, sources of information, practical office and field work. Cost accounting and budget cost control methods at design and construction stages; development feasibility studies; financial management, contract management; bid procedures and strategy; practical work in measurement, costing, pricing and analysis.

40.307 Planning and Design (Hotel, Motel, and Food Service Management Technology)

An introduction to buildings and the construction industry with specific reference to hotels, motels, and restaurants. Functional design principles, planning, construction systems, presentation drawings, and plan-reading. Selection of furnishings, principles of interior decoration; colour and lighting theory; materials and fabrics.

40.308 Landscape Draughting (Biological Sciences Technology)

Continuation of 40.208, dealing with landscape construction relative to post and beam construction, masonry construction, retaining walls; draughting related to the above; specifications; estimating.

40.401 *See* 40.301.

40.402 *See* 40.302.

40.403 *See* 40.303.

40.404 *See* 40.304.

40.405 *See* 40.305.

40.406 *See* 40.306.

40.F80 Building Renovation and Planning Procedures

An introduction to buildings and the construction industry through study of functional design principles, planning, construction systems, presentation drawings, plan-reading, selection of equipment and furnishings, colour and lighting, with reference to Medical Record Department needs.

CHEMICAL AND METALLURGICAL

41.102 Laboratory Workshop

Instruction in basic techniques applied to laboratory materials; including glass blowing, soldering, brazing, and gas welding. Use of hand and bench tools.

41.103, 41.203 Engineering Materials

Comparative properties of all classes of engineering materials including metals, alloys, polymers, concrete, wood, and ceramics. Common causes of failure in service including fatigue, weathering, embrittlement, and corrosion.

For Students in the Chemical and Metallurgical Technology.

41.104, 41.204 Engineering Materials *See* 41.103, 41.203.

For Students in the Instrumentation and Systems Technology.

41.105, 41.205 Engineering Materials *See* 41.103, 41.203.

For Students in the Mechanical Technology.

41.106 Engineering Materials *See* 41.103.

For Students in the Natural Gas and Petroleum Technology.

41.107, 41.207 Engineering Materials *See* 41.103, 41.203.

For Students in the Forest Products Technology.

41.203 *See* 41.103.

41.204 *See* 41.104.

41.205 *See* 41.105.

41.207 *See* 41.107.

41.210 Unit Processes

Flow charts for unit sequences. Instrumentation flow plan symbols, Material balance, heat balance, stoichiometry. Some representative production processes and operations.

41.304, 41.404 Physical Metallurgy

Solidification of metals, casting methods and defects, metal-forming operations, phase diagrams, alloying of metals, heat-treatment. Laboratory sessions emphasize physical testing of materials, metallography, and non-destructive testing.

41.305, 41.405 Assaying

Analytical chemistry applied to the ore minerals, with special attention to fire assaying for gold and silver. Gravimitsic, volumetric, and instrumental methods are developed for the more common metals. Students are encouraged to attempt the examinations for the Provincial Government licence to practise assaying in British Columbia after at least one year's experience following graduation. For Mining Technology.

41.307, 41.407 Extractive Metallurgy

Concerns itself with the unit operations of the recovery and upgrading of coal and nonferrous minerals and with the unit processes of nonferrous and precious metal recovery from ores and concentrates. Mineral Processing treats the basic operations of comminution, particle size analysis, classification, screening, flatation, gravity separation sampling, and solids transport by pipe-line. Extractive Metallurgy covers the fundamental principles and processes of hydrometallurgy, pyrometallurgy, and electrometallurgy. Some time is spent on mineralogy, and microscopy and numerical solution of design and operating problems is emphasized.

41.311, 41.411 Pollution Science

41.311 is an introduction to organic chemistry. 41.411 covers biochemistry, microbiology, pollution law, basic meteorology, air-sampling, and air pollution control methods. This course complements the courses in Environmental Sampling Techniques, Waste Disposal Methods, and Environmental Analytical Methods.

41.314, 41.414 Mineral Processing

The essential unit operations applied to mineral-processing techniques for mining students. Crushing, grinding, gravity separation, flotation, cyclone classification, materials handling and storage, statistics applied to sampling problems. An introduction to chemical and bacterial leaching as applied to precious metal and nonferrous metal ores. The course emphasizes the numerical solution of operating-type problems.

41.320, 41.420 Unit Project

Projects relating to the student's chosen option are assigned in each term. Regular progress reports and a final term report are required.

41.341, 41.441 Unit Operations

First and second law of thermodynamics; enthalpy, entropy, phase rule, 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, flotation, flow of heat, conduction, convection, radiation, film and over-all transfer coefficients, heat exchangers; principles and application of equipment for evaporation, distillation, absorption, extraction; humidification and dehumidification; drying; crystallization; ion exchange.

41.351 Pollution Control

Fundamentals of waste treatment and management systems. Basic sampling and testing techniques.

41.404 *See* 41.304.

41.405 *See* 41.305.

41.407 *See* 41.307.

41.408 Ore Analyses (Extractive Metallurgy Option)

The identification of economically important minerals, general principles of quantitative analysis of ore samples, including representative volumetric determinations such as acid-base, oxidation-reduction, and volumetric precipitation. Fire assaying, stressing fusion and combination wet-fire methods. Practical applications in instrumental and physiochemical analysis, including the latest analytical aids, polarography, spectrophotometry, atomic absorption, and emission spectroscopy.

41.411 *See* 41.311.

41.412 Wastewater Treatment

The physical, biological, and chemical methods used in treating municipal and industrial wastewaters.

41.413 Environmental Analytical Methods

Physical, chemical, and biological methods of analysis of solid, liquid, and gaseous streams; BOD, carbon in water, nitrogen and phosphorus in water, chlorides, sulphates, alkalinity, surfactants, pesticides. Use of Orsat midget impinger, X-ray, photofluorimeter.

41.414 *See* 41.314.

41.420 *See* 41.320.

41.425 Nondestructive Testing

This course is given to students in the Physical Metallurgy Option. The course covers all the major methods of nondestructive testing, including radiography, ultrasonic testing, magnetic particle testing, eddy current testing, use of dye penetrants, leak testing. Emphasis is on actual use of equipment and interpretation of results.

41.441 *See* 41.341.

41.E91 Medical Materials

Comparative properties of all classes of engineering materials with emphasis on biomedical applications, including metals, plastic materials, adhesives, and composite materials; bonding forces in solids, microstructures, plastic deformation and annealing, alloying, heat treatment of steels, and nonferrous metals; polymers, elastomers, and organic adhesives; corrosion and ageing of materials; interaction of materials with biological tissues, toxicity; reference sources and materials selection.

41.F91 Laboratory Workshop

A course for students in Biomedical Technology. Use of hand and bench tools: soldering, brazing, welding, adhesive bonding; basic glassworking; sheet-metal working; compression fittings.

CIVIL AND STRUCTURAL

42.101 Civil Engineering

Through participation in a series of projects involving analysis of engineered works or of engineering material, the student learns typical civil engineering principles, procedures, and calculations. Lecturing is minimal and takes place informally as student needs dictate. Full co-operation between students is encouraged as they analyse existing engineering works and see how planned objectives are achieved.

The projects are in the fields of Structures, Hydraulics, Hydrology, Highways, and Concrete Material. The methods and language of the industry are further revealed by field trips to engineered works.

42.102 Elementary Hydrology (for Surveying students)

The application of precipitation data to various run-off areas is learned in order to predict run-off yield and flood magnitude. Measurement of storages and flows in the field is studied, together with characteristics of open-channel flows.

42.103 Statics (for Mining students)

Vectors, force systems, graphical analysis, resultants, components, moments, equilibrium laws, force polygons, funicular polygons, frames and trusses, stress diagrams, Bowes' notation, flexible tension members, load shear and bending moment curves. Closely supervised problem sessions are used to provide the student with practice in common analytical and graphical solutions to problems of static load on statically determinate structures.

42.107 Building Structures (for Building students)

Similar to 42.103 Statics, but specially developed for the Building Technology.

42.202 Elementary Hydraulics (for Mining students)

Hydrostatics, properties of fluids, pressure, centre of pressure; flow of fluids, equation of continuity, velocity head, venturi, jets; orifices; notch and weir, friction and pipe flow; Reynolds' experiments, water hammer; flow laminar and turbulent; open-channel flow, regular channels, hydraulic jump, irregular channels; meters, valves, pumps. Laboratory experiments form a part of this course.

42.205 Strength of Materials (for Mining students)

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; slopes and deflection of beams; restrained and continuous beams. Strut theories; eccentric loading, lateral loading. Compound stress and strain; ellipse of stress; Poisson's ratio; principal stress and strains; Mohr's circle. Testing techniques; machines; extensometers; strain gauges; brittle lacquers; photo elasticity; evaluation of results.

42.207 Building Structures (for Building students)

Similar to 42.205 Strength of Materials, but specially developed for the Building Technology.

42.301 Civil Engineering Design

The student is instructed through participation in a series of design projects where, by applying design principles and engineering calculations, a structure or system is created to serve a specified objective. Much of the participation of the student is co-operative work on simulated engineering design problems such as would occur in a design office. Testing of materials to obtain design data is done as required. Lecturing is informal and occurs as it would from a design supervisor as staff are introduced to new objectives and instructions are given in the procedures needed to accomplish them.

Projects are in the fields of Structures, Hydraulics, Hydrology, Highways, Soil Mechanics and Foundations. Municipal Services, Traffic Engineering, Costing and Specifications, Bridge and Construction Practice, and Work Study.

Some projects are mandatory and others may be elected to total an acceptably complete program.

42.307 Building Structures (for Building students)

Reinforced-concrete beams; tension steel only; one-way and two-way slabs; compressive reinforcements; tee beams; axially and eccentrically loaded columns; simple footings and retaining walls; reinforcing detailing, schedule, and placement; design of forms.

42.407 Building Structures (for Building students)

Combined bending and axial loads; eccentric columns in steel and timber; built-up sections in steel and timber; beam-column connections.

Restrained and continuous beams; strain energy; moment-area; moment distribution; portal and multistorey frames; steel and timber detailing and fabrication.

Discussion of ultimate load design, prestressed concrete, advanced structural forms, and experimental stress analysis.

42.410 Land Engineering (for the Biological Sciences Technology)

An introduction to the behaviour of earth and land surfaces and engineering materials under various natural conditions and under the action of both static and dynamic forces commonly occurring in engineered works. Included are foundation loads, settlements, and bank stability of various soil types; also the occurrence and flow of water underground and on land surfaces.

ELECTRICAL AND ELECTRONICS

43.A01 Circuit Devices and Techniques

Familiarizes the students with electrical and electronic components and develops an orderly approach to equipment packaging and fabrication.

Topics include resistors, capacitors, inductors, relays, switches, fuses, and circuit-breakers; conductors, cables, and harnesses; soldering; semiconductors and tubes; printed circuits; engineering standards.

43.A02, B02, C02 Circuit Analysis I, II, and III

Teaches the principles and methods of analysis related to d.c. and single-phase a.c. circuits.

Topics include electrical quantities such as energy, power, voltage, current, resistance, inductance, capacitance, impedance; SI(MKSA) units; relationships between quantities; single-port network configurations (series, parallel, series-parallel); two-port networks; circuit laws and theorems; network analysis methods (loop, nodal, superposition, equivalent circuit); maximum power transfer; quality factor; transients, differentiation and integration; resonance; power-factor correction; transformer.

43.A03, B03 Shop Practice I and II

Provides practical training for the development of manipulative skills.

Topics include materials and their selection; welding (ferrous and non-ferrous metals); sheet-metal fabrication; cable splicing and termination; wiring methods; conduit bending and mounting; installation equipment (distribution boxes, switch boxes); electrical code; draughting and drawing interpretation.

43.172, 272 Electrical and Electronics Fundamentals

Gives Instrumentation and Systems students a knowledge of electrical and electronics principles and hardware.

Topics include electrical quantities and units, theorems and laws; components; impedance transformation; filters; measurements; semiconductors; integrated circuits; amplifiers and oscillators; power supplies.

43.B01, C01 Electronic Circuits I and II

Teaches how electronic circuits work, how to analyse them numerically and how to design, modify, and combine them to perform complex functions. The circuits are about 90 per cent semiconductor and 10 per cent vacuum tube.

Topics include interpretation of transistor and tube characteristic curves; voltage and current amplifying circuits; loadline analysis; choice of Q-point; bias circuits; stability; a.c. equivalent circuits; interstage coupling and frequency response; feedback; oscillation and oscillator circuits; power supplies, including voltage and current regulating circuits in discrete and integrated form; low-frequency power amplifiers of various types; heatsink calculations; characteristics and application of other devices such as unijunction transistors, thyristors, and field-effect transistors.

43.B02 *See* 43.A02.

43.B03 *See* 43.A03.

43.272 *See* 43.172.

43.C01 *See* 43.B01.

43.C02 *See* 43.A02

43.C03 Electrical Measurements

The student learns the practical application of equipment and techniques for measuring electrical quantities such as: current, voltage, power, resistance, inductance, capacitance, phase angle, time, frequency, distortion.

43.373 Electrical Equipment Applications

Gives Mechanical Technology students an introduction to industrial electrical equipment.

Topics include a.c. and d.c. motors and their application to electro-mechanical drive systems; protecting and controlling motors; industrial electrical power systems and related equipment; sources of energy; utility rate structures, transformation into primary and secondary voltage levels, distribution of power throughout the plant; switching; voltage control; power-factor correction.

43.374 *Electrical Equipment Applications*

Introduces Forest Resource Technology students to electrical systems used in the wood-products industry.

Topics include electrical distribution systems and related equipment associated with wood-processing plants, characteristics of typical electro-mechanical rotating machines, efficiency of machines under varying load conditions, cost of electrical energy.

43.E04 Digital Techniques I

Teaches the techniques basic to digital equipment and their application in communications, instrumentation, and industrial control systems.

Topics include switch and relay control; number systems; Boolean algebra; codes and coding; solid state logic (TTL, CMOS, HTL); noise and loading; encoders, decoders, display generators, relay drivers, and delay devices; counters, shift registers, and arithmetic systems; digital to analog and analog to digital converters.

43.E11 Industrial Electronics

Applies electronic circuit principles to industrial controls and utility systems. Measurement techniques and the correct use of test equipment are stressed.

Topics include integrated circuits; operational amplifiers; thyristors (static switching, phase control, application considerations, protection); d.c.-a.c. and d.c.-d.c. power conversion (transistor and SCR inverters).

45.E12 Three-phase Power Circuits

Teaches the application of phasor notation to three-phase power circuits. Includes related measurement procedures.

Topics include load determination; power-factor correction; single-phase, three-wire distribution; balanced three-phase systems; phase-sequence determination; transformer polarity, three-phase transformer configurations.

43.E13, F13 Electrical Equipment I and II

Gives an understanding of the theory, characteristics, and operation of equipment used in the electrical industry. Deals with items individually and their application to complete electrical systems and drives.

Topics include d.c. and a.c. motors and generators (types, losses, efficiencies, load requirements, running characteristics), transformers (construction, losses, efficiencies); industry ratings, standards, temperature classifications.

43.E21 Electronic Circuits III

Provides a knowledge of electronic circuits specifically needed for the electronics options (Control and Telecommunications).

Topics include tuned amplifiers (discrete and integrated); stability of tuned amplifiers; wide-band amplifiers; operational amplifiers; parameter systems and their application to small-signal linear circuit analysis.

43.E22 Pulse Circuits

Teaches the analysis and synthesis of circuits for the generation and shaping of nonsinusoidal waveforms.

Topics include clippers, clamps and d.c. restoration; multivibrators (monostable, bistable, and astable); large-signal transistor circuits; blocking oscillators; Schmitt trigger; ramp and staircase generators; line-pulse generators.

43.E23, E35 Telecommunications Principles

Teaches some of the communications principles common to telecommunications and electronic control systems.

Topics include history of communication; modulation and modulators; demodulators; frequency multipliers; single-side band techniques; frequency converters; transmitters and receivers.

43.E75 Methods of Electrical Measurement

See 43.C03.

43.E76 Digital Principles and Techniques I

See 43.E04.

43.F11 Industrial Controls

Teaches a systematic approach to the design, operation, and troubleshooting of industrial controls.

Topics include mechanical, electromagnetic, and static control devices (characteristics, relative merits, and application to industrial control); control circuit design, static logic; motor control (d.c., induction, and synchronous motors).

43.F12 Power Systems Analysis I

Deals with the analysis of three-phase power circuits.

Topics include equivalent circuit technique; per unit and per cent systems; unbalanced three-phase loads; two and three wattmeter methods; short-circuit studies.

43.F13 *See* 43.E13.

43.F14 Protective Systems

Deals with protection principles and equipment as applied in electrical power systems.

Topics include purpose of protection; fuses; circuit-breakers; protective relays; current and potential transformers; lightning arrestors; co-ordination studies.

43.F15 Electrical Draughting

Gives an appreciation of the preparation and interpretation of electrical drawings.

Topics include standard symbology; schematic, connection, and block diagrams; single- and three-line diagrams; building layouts.

43.F16 Lighting Systems

Introduces the commonly used electrical light sources and the calculations pertaining to lighting systems.

Topics include incandescent and gaseous discharge light sources; lighting equipment, calculations, and layouts; branch circuit wiring.

43.F24 Digital Techniques II

Applies the principles of digital techniques to the subsystems of industrial control, instrumentation, and communication systems.

Topics include analog-digital interfacing; digital instruments; phase-locked loops; analog multiplexing; data acquisition; error detection and correction; data transmission; supervisory and control systems; introduction to digital computer.

43.F31 Antennas and Transmission-lines

Provides a practical knowledge of the methods and devices used for the transmission of radio frequency energy.

Topics include electromagnetic fields and their propagation; dipole and simulated dipole antennas; loop antennas; antenna arrays; microwave antennas (horns, slotted, parabolic); coaxial lines; wave guides.

43.F33, G33 Telephone Systems I and II

Deals with some common carrier principles, techniques, and system operations.

Topics include power systems; battery plant and distribution; evolution of telephone switching; subscriber's loop; telephone instrument; step-by-step, cross-bar, and electronic switching exchange trunks; signalling; office practices; outside plant; telephone network theory; operating performance (including forms of distortion and losses).

43.F34 High Frequency Techniques

Teaches the principles and techniques involved in the generation and transmission of high radio frequencies.

Topics include generation of microwaves; klystrons, solid state generators, and travelling-wave tubes; wave guide hardware (principles and measurements); spot and swept frequency measurements of microwave systems.

43.F35 Telecommunications Principles II

Continues the principles of common telecommunication systems.

Topics include AGC systems; AFC; I.F. amplifier systems; audio systems; alignment; mobile transceivers; diversity operation; phase locked loop; discrimination and frequency control; PCM; FDM.

43.F41 Industrial Electronics I

Investigates the application of electronics to industrial control.

Topics include thyristors in static switching; SCR phase control (single and polyphase); SCR application considerations; time ratio control; electronic relays and transducers.

43.F42 Feedback Theory

Creates capability in the analysis of various feedback systems and the solution of typical problems.

Topics include transfer functions; stability criteria and the correction of instability; analysis techniques; typical electronic and electro-mechanical systems (position servo, motor-speed control, temperature control); analogue modeling.

43.F43 Electrical Equipment

Deals with the electrical equipment associated with electronic control systems.

Topics include industrial plant power distribution; three-phase synchronous generators (machines, controls, loads, power factor); single- and three-phase induction motors (industrial types, starting, overload protection); three-phase synchronous motors and their control; electromagnetic control circuits; d.c. generator and motor.

43.F44, G34 Electronic Equipment Fabrication

Deals with manufacturing techniques used in the electronics industry.

Topics include printed circuits (planning, components, component mounting, artwork, production processes); encapsulation; interconnection of units; materials (insulating, conducting, draughting).

43.F76 Digital Principles and Techniques I

See 43.E04.

43.G11 Control Systems

Teaches the application of electronic control principles to typical industrial systems.

Topics include schematic diagram interpretation; photo-electronic controls; electronic sensors; utility system applications; feedback applied to machine control; calculations on machine regulators (performance and stability, steady-state and transient); process control.

43.G12 Power Systems Analysis II

Teaches the analysis methods for predicting power system behaviour under normal and abnormal conditions.

Topics include voltage regulation; power transfer; load flow; transmission-line capability; power circle and angle diagrams; symmetrical components.

43.G13 Utility Systems

Deals with the organization of an electrical utility and the characteristics of its equipment.

Topics include utility system organization; generating sources, hydro and thermal; synchronizing; load sharing; transmission systems; substations; protective relaying; rate structures; system operation (load dispatch, wheeling, tie systems).

43.G14 Industrial Systems

Teaches the design of electrical systems for industrial plants and commercial buildings.

Topics include electrical system organization; feeder calculations and ratings; demand factors; motor control centres; switchboards; voltage levels; grounding, together with the appropriate sections of the Canadian Electrical Code.

43.G31 Navigation Aids

Applies the principles of telecommunications to electronic navigation systems.

Topics include RHO-THETA navigation aids (VOR, TACAN, DME); instrument landing systems; radar systems (marine doppler, surveillance); moving-target indicators; bright display; video mapping.

43.G32 Radio Systems

Provides an insight into the problems of radio systems and their solutions.

Topics include space-wave propagation; microwave paths; environmental factors; site considerations; noise performance (types of noise, objectives, and calculations); supervisory and control equipment; satellite communications; point-to-point and mobile radio systems.

43.G33 *See* 43.F33.

43.G34 *See* 43.F44.

43.G41 Industrial Audio Systems

This course introduces the student to industrial applications of audio techniques and systems.

Topics include—the nature of sound; hearing; sound transmission, absorption and reflection; noise and other forms of sound distortion; distortion control; effects of surfaces and materials upon sound; use of sound in monitoring and control systems; sound reinforcement systems; measurements dealing with sound.

43.G42 Active Filters

This course introduces the student to procedures and techniques necessary to design small-signal active filters. Procedures are introduced that allow the student to design highly selective low-pass, high-pass, band-pass, or band-elimination filters.

43.G43 Industrial Control Systems

This course deals with the application of electronic systems to the supervision and control of industrial equipment. Topics include numerical control utilizing analogue and digital techniques; applications of feedback systems; closed circuit television systems (CCTV); application of CCTV to industrial supervisory and control systems.

43.G44 Digital Systems

Teaches the use of digital computers and digital communications systems for supervision and control of industrial processes.

Topics include mini-computer and micro-computer hardware organization, assembler language programming, interfacing computers; digital data transmission; modems and modem interfacing; displays and remote terminals.

43.G76 Digital Principles and Techniques II

Teaches the fundamental principles of digital techniques to the subsystems of control, instrumentation, and medical systems.

BIOLOGICAL SCIENCES

44.121 Introductory Microbiology

The course is designed to train students in the basic microbiological procedures employed in a laboratory: the use and care of the microscope; staining methods; aseptic techniques; methods of identifying micro-organisms.

44.122 Biology

A study of the principles underlying living phenomena, including the organizational attributes of living matter. Evolutionary development is traced from one-celled organisms to higher plants and animals. The economic importance of various classes of plants and animals is included.

44.150 Agricultural Concepts

An overview of agricultural production in British Columbia, including terminology, types, areas, size, and trends. Business and management principles as applied to agriculture. A brief exposure to Government and marketing board involvement in agriculture.

Information on farm-related businesses which supply and support the agricultural producer.

44.201 Food Processing

The composition of foods. Nutritional aspects. An introduction to the processes of canning, freezing, pasteurizing, dehydrating, fermenting, and pickling. Experimental lots of food will be preserved by these methods during laboratory periods.

44.221 Microbiology for Food Processing

The application of microbiology to food-manufacturing. The isolation of micro-organisms of significance to food-processing for purposes of differentiation and classification. Maintaining high bacteriological standards in processed foods. Shelf-life studies. Spoilage control. Food fermentations. Assessing microbiological test results and report writing to management.

44.223 Microbiology for Food Production

The application of microbiology to agricultural food production. An introduction to plant and animal pathology and to immunology. Seminar project. Assessing and reporting microbiological test results.

44.224 Zoology

General classification of the animal kingdom. Basic vertebrate zoology. The development of the vertebrate from embryo to adult. The study of the vertebrate body, including the skeletal, muscular, digestive, circulatory, urogenital, and endocrine systems. Laboratories consist of comparative vertebrate anatomy.

44.251 Food Production

An introduction to plant science with particular reference to basic plant morphology and physiological processes. Soil types and soil analysis. Animal husbandry and animal nutrition.

44.253 Introductory Botany and Soils

An introduction to plant morphology and physiology, with particular reference to ornamental and horticultural plants; soil types and introduction to soil testing. Culture and management of ornamental and recreational turfgrass.

44.263, 44.363 Applied Horticulture

The principles of environmental control and plant response. Plant growth regulators. Genetic principles pertinent to ornamental horticulture. Basic greenhouse and plant propagation techniques. The principles of plant taxonomy and nomenclature. Recognition and utilization of woody species used in landscaping. Students must present a plant collection as part of the course requirement.

44.290 Agricultural Marketing

A study of the environment and institutions in the marketing of agricultural products and services. Consideration of the basic marketing functions—marketing research, product planning, selection of trade channels, merchandising, advertising and sales promotion, and the determination of price under various types of competition. The operation of marketing boards, commissions, the role of auctions in livestock marketing, the role of Governments in agricultural marketing, and the marketing strategies of service and supply firms to agricultural production units.

44.301, 44.401 *Food Processing*

Detailed studies of specific food-manufacturing processes, including dairy-products manufacture, fruit and vegetable processing, jams and jellies, fish and meat products, edible fats and oils, food emulsions, processed potato products, dehydrated and freeze-dried foods, tea and coffee, spices, confections and products of milling and baking. Characteristics of packaging materials, and how they meet the package requirements of various foods.

44.303 Nutrition for Food Processing

A study of the nutrients found in food as to their importance, metabolic function, and dietary requirements. The selection of diets to meet varied nutritional needs. The relationship of nutrition and health. Nutritional labelling. The effect of processing on the nutritional quality of foods.

44.311, 44.411 Quality Control

Responsibilities and organization of a quality-control department in the food industry. Equipping a control laboratory. Methods of measuring and controlling quality factors, such as colour, texure, flavour, and consistency in foods. Principles of statistical quality control. Federal and Provincial Government standards. Laboratory periods will provide practical experience in the scoring and grading of processed foods and in the use of various control instruments.

44.312 Introductory Food Analysis

Chemistry of the principal components of the major representative classes of foods and feeds. Moisture in foods. Proximate composition and energy values. Standard methods of analysis for common constituents. Techniques and procedures in general use in food and agricultural products laboratories.

44.341 Mechanics of Machines

Basic mechanical principles of food processing and agricultural equipment. Force and motion, work, energy and power. Thermodynamics. Fluid mechanics as applied to pumps and pumping systems. Electrical power equipment. Materials of construction. Maintenance and lubrication of equipment.

44.343 Landscape Mechanics

A study of basic engineering principles of landscaping and nursery crop equipment. Spraying systems. Landscape irrigation. Operation and maintenance of engine-powered equipment. Electrical power as applied to greenhouse operation.

44.352 Applied Genetics

Principles of genetics, including heredity and environment, Mendel's law of segregation, expression and interaction of genes, and multiple factor inheritance. Applied plant breeding and animal breeding.

44.361 Plant Technology

Plant environment and control. Plant processes and their manipulation in commercial crop plants. The application of the various techniques of plant culture in crop production, with reference to representative cereals, forages, vegetables, small fruits, and tree fruits grown in British Columbia.

44.363 *See* 44.263.

44.364 Nursery Crop Production

Propagation and field culture of nursery plants. Growing structures, storage. Inventory control, costing, marketing, and handling. Grades and grading of nursery stock.

44.366, 44.466 Landscape Structural Detail

Role of the technologist in the site planning and production of landscape architectural projects. Use of sketches and models for preliminary studies of site analysis and design concepts. Preparation of working drawings and contract documents.

44.371 Animal Technology

A general familiarization with the live-stock and poultry industries as they relate to food production. Animal physiology. Role of basic nutrients in metabolism. Nutritive requirements of live stock during growth, reproduction, and lactation. Feed ration formulation. Feed additives.

44.391, 44.491 Agricultural Business Organization and Management

Forms of business organization used by farm businesses; types, operating agreements, transfer arrangements, vertical integration, syndication, specialization, diversification, combination of enterprises, land tenure.

The application of management to the agricultural business, including defining the responsibilities of the manager in setting objectives; formulating operational plans, acquiring resources and people; co-ordinating, controlling, analysing and evaluating the business operation. Practical business situations, including the use of management games will be used. The student will be required to analyse existing operations and formulate complete operating plans for future operations. Extensive use of the available CANFARM Business Management Programs will be made throughout the course.

44.392 Agricultural Business Law and Taxes

Property, income and sales tax, estate and succession duties, income sharing, laws of contract liability. Various forms of agricultural business structure.

44.393 Agricultural Business Finance and Appraisal

Capital and credit in farm business administration, including a discussion of the available sources of agricultural funds; analysis and appraisal of commercial farms; insurance in relation to risk and uncertainty in modern agriculture; social security, and its role in farm business.

44.394 Summer Technical Report

A detailed report on a phase of agricultural management from first-hand experience obtained during the summer on-farm practicum.

44.401 *See* 44.301.

44.402 Process Analysis

This course is designed to acquaint the student with the basic engineering aspects of the unit operations encountered in food processing. The engineering principles of raw-material operations, conversion and preservation operations, together with materials handling and plant design. Laboratory sessions will involve experimentation, demonstration, and problem-solving.

44.411 *See* 44.311.

44.412 Food Analysis

Detailed chemistry of the products of the food industry: fat and oil, sugar, cereal, fruit and vegetable, dairy, fishery, meat, and poultry products. Vitamins and nutritional supplements. Chemistry of various types of food deterioration and its prevention. Food additives—preservatives, colouring, flavouring, and sweetening agents. Physiochemical and instrumental methods used in food analysis.

44.413 Agricultural Analysis

Chemistry and standard methods of analysis of agricultural products. Determination of major and minor nutrients in feeds and fertilizers. Elemental analysis of plant materials and soils. Analysis of cereal grains and animal products. Chemistry of pesticides and fungicides. Instrumental and chromatographic procedures for determination of pesticide and other potentially hazardous residues in feeds.

44.414 Experimental Techniques

Design and layout of experiments using typical biological subjects. The application of the scientific method and of statistical methods. Recording and presentation of experimental data. Techniques in plant histology and microscopy.

44.431 Sanitation

Organization of a sanitation programme in the food industry. The chemistry of cleaning. Properties of a good detergent. Types of cleaning compounds and formulation. Methods of disinfection and sterilization. Sanitary aspects of buildings and equipment. Safe water supply. Waste treatment and disposal. Effective insect and rodent control. Employee training in sanitary practices. Inspection techniques and laboratory tests.

44.442 Agricultural Mechanics

A study of basic engineering principles as applied to agricultural operations. Hydraulic systems. Agricultural spraying systems. Irrigation and drainage. Tillage and harvesting equipment. Introductory environmental control. Care of equipment.

44.462 Plant Protection

The morphology and identification of weeds, diseases, and insects. Life histories of representative species. Strategy of control by cultural, biological, and chemical means. The pesticides currently recommended are reviewed. Pesticide safety, pest and pesticide legislation. Students are examined under the provisions of the *Pharmacy Act* for Pesticide Applicator and Pesticide Dispenser Certificates.

44.465 Landscape Field Practice

Landscape specifications, plan reading, estimating, project programming, construction, use of materials, planting procedures, fixtures in the landscape, cost control and equipment operation. Study of specific landscape practices as applied to parks and recreation facilities, golf courses, etc.

44.466 *See* 44.366.

44.467 Advanced Plant Identification

A continuation of the plant-identification studies in Applied Horticulture I and II, and Nursery Crop Production, with particular reference to the species and cultivar level. The use of plants in the landscape.

44.468 Supervisory Practices

Effective supervisory practices in Landscape Horticulture; the principles of supervision; knowing the organization; work-scheduling; motivating, counselling, and evaluating the employee; job and safety training; the supervisors responsibility; public relations.

44.481 Soil Technology

The origin, formation, and classification of soils, use of survey reports, map interpretation. Components of soils, soil colloids, cation exchange reactions, soil acidity, phosphorus, nitrogen, the crop as an indicator of fertility, soil organic matter, fertilizers. Soil-sampling procedures, extraction methods used in soil analysis.

44.491 *See* 44.391.

44.495 Crop and Livestock Management

Detailed application of the principles learned in previous subjects. Students will be required to structure complete crop and livestock management systems for different types of agricultural sequences.

FORESTRY

45.101 Introduction to Forest Land Management

This course provides students with background information and understanding regarding the important uses of forest land. It covers the resources associated with forest land and the problems of administration, management, multiple use, and utilization. The principal resources considered are forest, fish, wildlife, range land, water, recreation, and minerals.

45.102 Forest Measurement I

Fundamental concepts of Forest Engineering—measurement of distances, direction, and elevation. Traverse calculations, obtaining, recording, and plotting topographic detail. Care, maintenance and adjustment of equipment. This course will familiarize the student with forest surveying methods used in logging layout, and forest measurements.

45.103 Elementary Wood Technology

This subject is designed to enable Forest Technology students to appreciate the nature of the woods of the commercial tree species in British Columbia and be aware of how wood in the growing tree is affected by the natural environment and forest practices. Topics included are botanical origin of wood, structure, properties, wood deterioration, preservation, and specialty products, including the utilization of waste wood.

45.106, 45.206 Photo Interpretation and Mapping I, II

Practical use and application of aerial photography in forestry. Classification, reconnaissance, planning and inventory, using aerial photos. Practice in the use of photo-interpretation aids, including the use of stereometers. Construction of forest maps and plans. Transfer of detail from aerial photos, using Sketchmasters, Map-O-Graph, Kail plotters, and pantographs. Draughting and map reproduction techniques.

45.110, 45.410 Fire Control I, II

Historical review, fire behaviour with simulation through effect of topography, fuel, weather, including weather observation. Pre-suppression, including fire-danger ratings, detection, reporting, and general pre-organization of industrial and Government agencies. *Forest Act,* Part XI. Fire-suppression techniques through fire-simulation training in initial action and problem-solving.

45.111 Fire Science

Measuring and recording of weather data. Causes of fire in British Columbia. Fire behaviour related to weather, topography, and fuel. Fire-simulation exercises. Results of fire. Use of fire-fighting equipment. Slash-burning problems.

45.120, 45.220 Forest and Range Botany

Structure, physiology, taxonomy, and uses of plants, with emphasis on those having important biological and economic significance in the biotic zones of British Columbia. Introduction to reproduction of plants, with particular emphasis on conifers. Recognition and evalution of common plant associations in the forest, range land, and alpine habitats of British Columbia and their uses in land management practices.

45.125 Public Information Techniques

The course objective is to introduce the student to the practical techniques of effective communication in his chosen field. The preparation, design, and use of audio, visual, and other communication media will be emphasized and encouraged in the development of all written and oral presentations. The oral presentation of topics prepared from related courses in the option, supplemented by library research and literature survey, will be required of the student in a variety of speaking practicums.

45.202 Forest Measurement II

Methods of measurement of standing and felled timber. Direct measurement of tree diameters, heights, and ages. Characteristics and use of standard volume tables. Construction of local volume tables. Types of sampling, and design. Application of aerial sampling and point sampling with elementary statistical analysis. Compilation methods for sample data. Report writing.

45.206 *See* 45.106.

45.220 *See* 45.120.

45.224 Public Administration

This course deals with the fundamentals of public administration, including Government of Canada; fiscal and accounting procedures in Government departments and agencies; personnel administration; administrative law; statute interpretation; jurisdiction and functions of administrative tribunals.

45.226 Ecology

Introduction to basic concepts of ecology, with emphasis on their application to management of renewable resources. The course is divided into two main aspects. The first portion deals with the ecological principles, the second portion with the practical application of these principles to renewable resource management. Examples are drawn from current environmental issues.

45.227 Geology and Soils

A study of the geology, land forms, and development of soils in British Columbia. Physical and chemical nature of soils. Soil erosion and preventive measures. Soil surveys and land-use studies.

45.302, 45.402 Forest Measurement III, IV

Field application of cruising techniques and data compilation by computer. Cruise-report preparation, including recommendations for environmental considerations. Preparation of forest maps. Familiarization with British Columbia cruising systems. Inventory as opposed to operational cruising. Logging-waste assessment. British Columbia log scale applications to Coast and Interior operations. British Columbia board-foot rule. Weight-scaling.

45.305 Timber Harvesting

Description and analysis of timber-harvesting systems presently used on the British Columbia Coast and Interior. Techniques in the theory and application of logging lay-out. Environmental considerations in timber harvesting. Multiforest land-use concepts. Woods safety.

45.308, 45.408 Roads and Transportation I, II

Truck-road location, construction, and maintenance. Preparation of plans and profiles. Measurement of earth and rock work. Optimum road standards. Road-costing. Culvert and simple log-span bridge design. Hauling costs. Log dumps, dry land sorting areas, and booming-grounds. Water transportation of logs.

45.313, 45.413 Forest Pestology I, II

An integrated study of forest insect and disease problems. Basic life-histories. The interactions of damage agencies in the forest. Improved cruise techniques related to insect and disease damage. Use of subject literature. Co-operation with authoritative government agencies. Prevention and control of damage. Measuring and reporting of insect and disease damage. Recognition of the currently important insects and diseases.

45.316, 45.416 Forest Management

Principles of Forest Management and Administration; Relation of timber production to other forest land uses. Management for sustained yield; ownership and tenure; business aspects.

Foundations of Forest Management; site, stocking, spacing; silviculture, field and nursery; forest yield; forest growth; forest regulation; determination of cut; stumpage appraisal.

45.321, 45.421 Recreational Land Management I, II

An introductory course in recreational land management. Development and receational use of areas designated as natural parks. Survey of outdoor recreation, history, and organization of agencies providing recreational activities in parks. Park development, planning, and design. Practical exericises in site analysis, planning, and design for specific uses. Park and natural-history interpretation. Park operation and administration.

Assessment and development of wildlife recreational areas both in and out of established parks. Recognition of recreational sites by aerial-photo interpretation of land forms. Private and public programs in forest recreation. Land tenures and land acquisition for recreation. Wildland landscaping. Summer and winter sports area developments.

Water-oriented activities, wildland access problems and trail design, mountaineering, search and rescue.

45.322, 45.422 Wildlife Management I, II

The principles and practice of wildlife management, with particular reference to problems and procedures in British Columbia wildlife environments. The dynamics of wildlife populations. Methods of study. Harvesting. Regulations. Natural and artificial regulation of animal numbers. Diseases and parasites. The economics of wildlife, particularly in forest habitats. Extensive field study to support and extend lecture and laboratory material.

45.323, 45.423 Fish Management I, II

The biology of British Columbia fishes, including anatomy, taxonomy, physiology, behaviour, and ecology. Management aspects of fisheries, including population dynamics, habitat evaluation and improvement, harvesting, pollution and fishery regulations. Laboratories will deal with methodology as it applies to the above, and much of the training in this regard will be done in the field. Emphasis throughout is on the British Columbia situation.

45.326 Community and Habitat Ecology

A review study of the roles of geology, soils, climate, and vegetation in the formation and development of major habitat types in British Columbia, based on the framework of the biogeoclimatic zones of British Columbia. Evaluation of the effects of management practices on the maintenance and alteration of these habitats. Practice of the description and evaluation of

any habitats in a report. Field indentification and evalution of habitats is aided by a five-day field trip to the central Interior of British Columbia.

45.327, 45.427 Projects

Special study seminars or projects designed to introduce students to current problems and solutions in resource management. Partial or complete involvement with potential employers will be encouraged.

45.328 Summer Technical Report

A detailed report on a phase of resource management from first-hand experience or from approved library research.

45.402 *See* 45.302.

45.405 Log Production and Cost Control

Log-production planning and scheduling. Production and cost control. Cost analysis. Operations research techniques. Contracts and contract logging. Woods organization. Industry and Government relationships in logging, particularly as related to development and management of the related resources.

45.408 *See* 45.308.

45.410 *See* 45.110.

45.413 *See* 45.313.

45.416 *See* 45.316.

45.421 See 45.321.

45.422 *See* 45.322.

45.423 *See* 45.323.

45.427 *See* 45.327.

45.429 Environmental Inventory Techniques

Basic techniques used in establishing the quality and quantity of a variety of resources. The course includes practical exercises in such areas as human use studies, animal population analysis, basic survey techniques, stream and lake survey techniques, hydrological and meteorological techniques, forest inventory and pollution sampling techniques.

45.430 Law Enforcement

This course deals with the many aspects involved in the interpretation and enforcement of legislative acts relating to the management of Canada's wildland resource. Among these are the *Fisheries Act, Park Act, Wildlife Act,* etc.

FOREST PRODUCTS

46.101 Forest Utilization

An introduction to the manufacture of forest products. Topics include elementary botany, identification of B.C. commercial tree species, forest management and logging, macro and micro wood technology and wood defects as they relate to lumber quality. The processing and handling of wood in preparation for lumber manufacturing—debarking, chipping, screening, conveyance, and storage.

46.198 Lumber Tallying

A full course on the tallying and shipping of lumber followed by an industrial examination. Material covers the conversion of order data to quantities in foot-board measure, specified lengths, pieces, bundles, and packages. Also covered is information on moisture content and shrinkage of wood, metric conversion, and lumber price calculations.

46.199 Log Utilization

Course introduces basic log-scaling procedures used for Coastal mills. Material also includes different log-sorting methods and recovery calculations used in the sawmill and plywood industries.

Considerable time is spent practising scaling techniques on selected log booms.

46.212 Pulp and Paper Technology I

An introduction to the commercially important pulping processes, with the emphasis on the kraft and mechanical systems.

Raw-material analysis includes water, fibre, and chemicals. The use of the microscope as an aid to manufacturing is covered.

Major and auxiliary items of mill equipment will be covered. The laboratory portion of the course is designed to equip students to undertake summer employment in a routine mill-testing function.

46.214 Lumber Manufacturing and Grading

Students attend the industry lumber-grading classes and also receive further in-class instruction, followed by an industrial examination for certification by the Council of Forest Industries in lumber-grading. Other topics include wood anatomy and growth, natural defects, agents of deterioration, and factors influencing strength. Types and methods used in gluing, coating, and preserving wood may also be included.

46.301, 46.401 Pulp and Paper Technology II, III

Pulp and paper technology concerned mainly with the kraft process, chemical and heat recovery, bleaching, papermaking, newsprint manufacture, and wood chemistry.

Pulp and paper instrumentation, with emphasis on the theory and application of process control, including computer control systems.

Pollution abatement technology—application of physical, chemical, and biochemical methods to reduce air and water effluents.

46.305, 46.405 Pulp and Paper Testing I, II

Standard laboratory techniques. Process control and product testing, including pulp viscosity, bleachability, screening and cleaning efficiency, and dirt count utilizing electronic test equipment. The study and application of advanced techniques in the physical, optical, and chemical evaluation of paper pulps and manufactured papers. Projects are undertaken in conjunction with the laboratory section of the Pulp and Paper Technology course. A large portion of this course will be devoted to pollution control testing.

46.315, 46.415 Wood Processing I, II

Students receive instruction in sawmill and planer-mill operation, sawing technology, lumber seasoning, plywood and particleboard manufacture and structural laminating. Also, methods to control quality, recovery, and productivity are examined. Coastal and inland operations are compared in the classroom and by way of field trips.

46.370, 46.470 Mill Services I, II

The course is designed to supplement material covered in Wood Processing I and II (46.315, 46.415).

Topics include cost-analysis, principles of supervision, accident prevention, fire prevention, industrial relations, maintenance organization, maintenance trades, mobile equipment, and pollution abatement.

A large portion of the time is spent on specific assignments in various manufacturing plants.

46.401 *See* 46.301.

46.405 *See* 46.305.

46.415 *See* 46.315.

46.470 *See* 46.370.

NATURAL GAS AND PETROLEUM

47.101 Introduction to Petroleum Hydrocarbons

Hydrocarbon families, alkanes, olefins, ring molecules, isomers. Hydrocarbon content of crude oils and classification. Phase behaviour of petroleum hydrocarbons at high pressures.

47.202 Petroleum Geology

Origin of petroleum. Historic and structural geology of petroleum reservoirs. Well logging. Construction of isopach and isochore subsurface maps. Porosity and permiability of rocks. Petroleum geology of Western Canada.

47.221 Distribution and Utilization (Gas)

City gate stations; regulation and odourization; high, medium, and low pressure distribution systems; network analysis; services; service regulators; meters; combustion stoichiometry; furnaces, boilers; installation codes; industrial and power utilization; corrosion control; peak shaving; storage.

47.311 Gas and Oil, Production and Transmission

Hydrocarbon 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; measurement; laws and regulations.

47.409 Process Dynamics

Measurement transducers, interface devices, indicators and recorders. Controllers and control functions. Dynamics of process systems, lumped parametric solutions. Upset solutions. Computer applications of system modelling.

47.431 Oil Refining and Utilization

Crude oil, distillation; cracking, thermal and catylitic; reforming; hydrogenation; oil products, product testing, storage, loading, combustion stoichiometry; oil and gas engines, oil burners.

INSTRUMENTATION

48.100, 48.200 Process Measurements

Introduction, symbols, static characteristics, applications, dimensional analysis.

Weight—Units and standards, beams, spring balances.

Density—The hydrometer, Westphal balance, bubble-tube.

Level—Float, electrode, sonic, hydrostatic, and capacitance systems.

Pressure—Manometer, Bourdon gauge, bellows, diaphragm, Pirani and ionization gauges. D/P transmitters.

Viscosity—Dynamic and kinematic devices.

Flow—The venturi, nozzles, orifices, pitot tubes, rotameters, weirs, magnetic flow meters, turbine flow meters, volumetric flow meters.

Fluidics—Introduction; fluid dynamics; proportional devices; digital devices.

Dynamic response of instruments—First-order systems with step and linear inputs.

Temperature—Expansion thermometers, thermocouples, resistance thermometers, thermistors.

48.200 *See* 48.100.

48.300, 48.400 Process Measurements

This course is essentially a continuation of 48.100, 48.200.

Force, torque, and strain—Mechanical, optical, electrical strain gauges, and load cells.

Humidity and dewpoint—Psychrometry, hygrometry, vapour equilibrium systems.

Gas analysis—Chemical absorption, thermal conductivity, paramagnetic, heat of combustion, and polargraphic methods.

Electrolytic conductivity—Electrode and electrodeless.

pH—Dye and electrometric methods.

Spectrometry—Light sources, filters, dispersive elements, and detectors.

Chromatography—Separation and detection methods.

Line diagrams—Showing instrumentation layout.

48.310, 48.410 Process Control

History of development. Concept of the process control loop.

Final control elements—Regulators and control valves, actuators, feedback concept, positioners.

Process response—Static and dynamic response, self-regulation, process time-constants, controllability.

Simple controllers—Two-position, single-speed floating and high-gain controllers, proportional control offset, speed of response.

Three-mode control—Proportional, reset, and rate actions in various combinations. Typical pneumatic and electronic controllers. Controller tuning and calibration.

Computer analysis—Process and controller analogues, special functions, typical control loop analogues, modelling and scaling.

Frequency response analysis—Gain and phase-shift characteristics in a control loop.

Special applications—Cascade, feedforward, and ratio control. Practical process layouts.

48.320, 48.420 Computer Techniques

Introduction—Applications of digital methods of Instrumentation, Automation, and Control.

Number systems—Digital representation, base conversion, complement arithmetic, AND/OR gating.

Boolean algebra—Truth tables, algebraic and graphical minimization, NAND/NOR gating reductions, code conversions.

Digital components—Flip-flops, counters, registers, arithmetic and logical units, memory.

Computer operation—CPU organization, instruction decoding, memory operation, timing.

Interfacing—Serial and parallel data, transmission, A/D and D/A conversion, analog multiplexing, remote data processing.

Programming—Machine language, basic operator level interactive programming.

The process—Real time control of processes.

48.330, 48.430 Instrumentation Electronics

Wheatstone Bridge—For the measurement of resistance, temperature, strain, flow, thermal, and electrolytic conductivity.

D.C. transistor circuits—Applications of transistors in saturated state to power supplies, level shifters, switches, current sources.

Operational amplifiers—Differential bridge amplifiers, voltage and current transmitters and receivers, D/A and A/D converters, Controller design.

Analog computers—Summers, multipliers, integrators, differentiators, limiters, function generators, square root extractors, sample and hold. Layout for process simulation.

Commercial circuitry—Industrial controllers, pH meters, pneumatic to electronic interfacing, alarm detectors, spectrophotometers, and chromatographs.

48.350, 48.450 Instrumentation (for Mechanical Technology Students)

An orientation course for Mechanical Technology students. Topics include basic devices used for measuring pressure, temperature, level, density, and flow. Instrument static and dynamic performance. Instrument application to industrial processes. Design of pneumatic and hydraulic measurement and control equipment using high-gain amplifiers and negative feedback. Basic principles of automatic control, process, dynamic behaviour, and controlability. On/off, proportional, integral, and derivative control. Control strategy. Ratio, cascade, multivariable and feedforward systems. Introduction to computer control.

48.360 Instrumentation (for Chemical and Metallurgical Technology Students)

An orientation course for the pollution option with emphasis on laboratory exposure to industrial equipment. Standard methods of applying commercial instruments to measure the following variables . . . density, pressure, level, flow, temperature and humidity.

The course ends with an introduction to the principles of regulators and controllers.

48.400 *See* 48.300.

48.410 *See* 48.310.

48.420 *See* 48.320.

48.430 *See* 48.330.

48.450 *See* 48.350.

48.470 Instrumentation (for Biological Sciences Students)

An orientation course for the food-processing option with emphasis on laboratory exposure to industrial equipment. Standard methods of applying commercial instruments to measure the following variables . . . density, pressure, level, flow, temperature, and humidity.

The course ends with an introduction to the principles of regulators and controllers.

48.E60, F60, G60 Medical Instrumentation

An orientation course for students from biomedical technology. Basic devices for measuring pressure, temperature, density, and flow. Concept of regulation and feedback control. A study of the principles of analysis instruments, using potentiometric, amperometric, and polaragraphic techniques; ultraviolet, visible, and infra-red spectroscopy; flame photometry; paper and column chromatography; electrophoresis and refractometric methods.

48.F60 *See* 48.E60.

48.G60 *See* 48.F60.

MECHANICAL

49.100 Mechanical Draughting I

Techniques of producing and reading mechanical drawings using standard format and the development of basic skills in applying these techniques. Use of instruments, line work, lettering, geometric constructions isometrics, with emphasis placed on orthographic projection, auxiliary views, sections, dimensions, and working drawings.

49.101 Draughting—Common Service Course

Techniques of reading and producing orthographic drawings using standard format and the development of basic skills in applying these techniques. Use of instruments, line work, geometric constructions, orthographic projection, isometric drawing and sketching, sections, dimensioning.

49.102 Interpretation of Engineering Drawings

This course introduces the student to engineering drawings as a method of communication. He will learn how to read various types of blueprints and how to communicate through the use of drawings. Emphasis will be placed on visualization, dimensioning, and freehand sketching.

49.106 Engineering Concepts I

A study of applied mechanics and design concepts for non-Mechanical students. Topics include some metallurgy, forces, moments, couples, frames, beams, centroids, friction, and some elementary dynamics.

49.107 Applied Mechanics

(i) Statics. Vectors, force systems, concurrent and coplanar, nonconcurrent and coplanar. Graphical representation and solutions. Ideas of equilibrium. Mathematical representation of equilibrium. Analysis of frames. Statically determinate structures. Redundancies. Beams, principle of moments, and centroids. Second moment of area. Theorems of parallel and perpendicular areas.

(ii) Dynamics. Kinematics. Basic equations of motion. Engineers and physicists units. Kinetics: Newton's laws. Problems involving space, velocity, and acceleration diagrams. Work, energy, and power. Impulse and momentum. Mechanical vibrations.

49.150 Production Engineering

Metal-cutting materials; mechanics of metal-cutting; single-point and multi-point cutting-tools; tool life and cutting speeds. Metal removal rates and power required with experimental work to demonstrate these principles. Costs and economics related to metal removal.

49.165, 49.265 Shopwork

Practical experience in the use and application of basic metal-cutting machine tools—engine lathe, drill press, shaper, milling machine, power saw, planer and precision grinder, layout and bench work.

Metrology—General concepts and principles of measurement. The use of standards. Graduated manual measuring-tools, dial indicators, gauges, micrometers, verniers, sine bar, etc.

49.200 Mechanical Draughting II

More-advanced techniques involving limits and fits, isometric piping, descriptive geometry, intersections, developments, gears, threads and fasteners, weld symbols, and working drawings and projects.

49.202 Draughting—Civil and Structural II

Intersections, developments, descriptive geometry, contours, sections, profiles, cut and fill problems. All treated in general on a project basis with C & S design procedures.

49.203 Draughting—Survey and Mining II

Techniques in ink; intersections and developments; dip, strike, and outcrop; contours; profiles; rights-of-way; mining and survey problems and projects.

49.204 Draughting—Chemical and Metallurgical and Forest Products

Intersections; developments; descriptive geometry; isometrics; piping diagrams; flow-sheets of typical mill processes; charts and diagrams; equipment layouts; field dimension and specifications.

49.206 Engineering Concepts II

A study of manufacturing processes and equipment including casting, forging, presswork, welding, etc.

Student participation includes visits to local industry; practical lab, work and preparing and presenting to the class topics on processes of recent development.

49.210 Strength of Materials

Study of stresses, strains, and deflections resulting from action of tensile, compressive, shear, and torsion forces on simple types of structural and machine elements. Consideration of beams, columns, shafts, thin-walled cylinders, riveted and welded joints. Laboratory testing of engineering materials and common machine elements.

49.225 Applied Heat and Introduction to Fluid Processes

Study of basic topics leading to engineering thermodynamics, including heat, energy, work; fluid properties, processes and systems, ideal gases, enthalpy *and entropy; first and second laws of thermodynamics; Carnot engine and heat pump;* standard air cycles; *calorific values of fuels.* Laboratory work will be carried out to supplement theory presented in lectures.

49.250 Production Engineering

The course deals with the mathematical approach to metal-cutting. The relationships of Tool Geometry. Chip compression ratio, tool forces, and the tool are considered. Learning as applied to machine tools and how automation skill, experience, and inexperience affect same. Simple production projects are carried out.

49.265 *See* 49.165.

49.266 Introduction to Machine Tools

A basic course designed to familiarize the student with shop tools and equipment and with shop terminology and established standards of workmanship. Demonstrations are carried out to provide a practical understanding of the subject.

49.267 Introduction to Production Engineering

The study of modern machine tools, with practical experience in their use and application. Costs and economics related to production.

49.300 Engineering Graphics

A study of advanced draughting practices covering geometric tolerancing, simple special purpose tooling, cams, linkages and motions, structural steel, fluid power, applied mechanics, and graphical determination of deflections.

49.302 Civil Engineering Graphics

A special study of engineering graphics as applied in Civil and Structural Technology, involving road plans, profiles and sections; pipe services; pumping-stations; treatment plants; joint detailing; welded and bolted connections; dams. All work conducted on a project basis.

49.312 Machine Design

This course consists of a study of basic principles of machine design. Topics include stress analysis, design factors, stress concentration, notch sensitivity, and fatigue. Study of design is provided including practical design of beams and columns with axial and (or) transverse loading, belts, chain-drives, and gearing.

49.313 Production Mechanical Design

Emphasis is placed on application of basic design concepts to practical situations.

After a brief review of engineering materials and basic strength of materials formulæ, the course examines Mohr's circles of stress and strain; strain

gauges; cyclic loading and stress concentration; threaded fasteners; components under combined loading-shafting; welded joints. An accompanying problem lab gives the students an opportunity to practise the material covered during lectures.

49.315 Fluid Mechanics

Principles of hydrostatics, including properties of fluids; pressure measurement; forces on submerged surfaces; fundamentals of fluid flow; flow through pipes, nozzles, and orifices; streamline and turbulent flow; flow measurement; flow distribution and pressure losses in pipe systems; application to fluid power systems.

49.325, 49.425 Thermal Engineering

Review of fundamentals of thermal systems. Study of steady-flow processes; thermodynamic properties of pure substances and of mixtures of liquids, vapours, and gases; energy sources and energy release; steam processes and power plants; centrifugal pumps and fans and associated systems; heat transmission, refrigeration and air-conditioning; air compressors and internal-combustion engines. Laboratory work includes investigation into fluid flow measurement, combustion of fuels, steam conditions and performance influences on machinery such as steam turbines and generators, heat exchangers, pumps, fans, refrigerators, air compressors, gas turbines and other internal-combustion engines.

49.350 Metrology and Quality Control

Interferometers and associated devices. Optical comparators, and 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.

49.412 Machine Design

Basic principles derived in 49.312 are applied to various design elements. Topics include springs; roller bearings; power screws; spur and helical gearing; bevel and worm gearing; couplings, brakes, clutches; mechanical vibration, damping, critical speeds of shafts; systems having one and two degrees of freedom.

49.425 *See* 49.325.

49.435 Fluid Power

Energy transfer in bulk flow systems; centrifugal fans and pumps; positive displacement pumps and motors; fluid couplings and torque converters. Hydraulic and pneumatic power transmissions and control systems. Introduction to industrial uses of fluid power circuits. Fluidic components and control systems; introduction to fluid logic and Boolean algebra.

49.445 Manufacturing Processes

Study of modern manufacturing processes, including the machines, materials, methods, and practices used in the mechanical industries; casting; welding; hot and cold forming; extruding; forging; die casting; stamping; and pressing. Course content is related to material covered in Engineering Materials and to training given in Shopwork 49.165 to 49.465. Field trips to appropriate local industries are arranged.

49.450 Production Engineering

Plant organization and management, plant locations and layouts. Labour management relations, personnel practices. Case studies. Inventory control, production control, maintenance control.

49.455 *Tool Design*

Study of tool design as related to manufacturing methods and requirements; tooling for production and gauging; standard tooling components and devices; consideration of drill jigs; press tools, punches, dies, and special devices.

49.465 Analysis of Machining Techniques

This course includes several laboratory projects designed to enable the student to utilize information and studies he/she has made in previous courses.

Emphasis is placed on analysing the machining operation from the initial stage to completion of a job lot order.

Each project includes organizing the sequence of operations, processing, programming, time and cost estimating, machine and tool set up, manufacture, inspection, quality control, and the learning process.

49.471 Mechanical Equipment

A study of mechanical equipment relating to the development, transmission, application, and control of power with particular reference to the wood-processing industry. References to types of prime movers, speed conversions, drives, bearings, hydraulic and pneumatic systems, and maintenance are included.

MINING

50.101, 50.201 Geology

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, non-metallics, ore deposits and their controls; geological history, pre-cambrian, paleozoic, mesozoic, tertiary, pleistocene; geologic maps.

50.102, 50.202 Mining

Nature of mineral industries, brief history. classification, search for economic mineral deposits, prospecting techniques; preliminary exploration methods; terminology; evaluation; production and treatment methods; recoverable unit value, smelter contracts, evaluation, sampling methods, weighted arithmetic mean, determination of average grade, ore reserves; the *Mineral Act;* exploitation of mineral deposits, planned systems of extraction, and classification of mining methods. In addition an introduction to some unit operations in mining, e.g., drilling and haulage.

50.201 *See* 50.101.

50.202 *See* 50.102.

50.301 Geology—Structural

Brief review of mechanical principles of rock deformation and of the primary structures of sedimentary, igneous, and metamorphic rocks. The origin, nature, and classification of joints, folds, and faults, with emphasis on their relation to mineral resources.

Laboratory work includes examination of specimens, methods of recording structural data, mapping and solution of structural problems, with emphasis on economic aspects.

50.302, 50.402 Mining—Operation and Equipment

Mining economics; cost components; selection and utilization of equipment; break-even ratio; breaking ground; ground support; ore- and waste-removal; development drives; examples of mining practice; control of water, drainage, grouting; ventilation; occupational hazards; *Mines Regulation Act;* mine organization.

Laboratory sessions; mainly field trips to mines and suppliers of mining equipment for familiarization with mining methods, systems, and equipment. Also sessions are given on power generation and distribution and electrical equipment for mine service, pumping, ventilation, V-belt drives, dust and noise control, hoisting, and compressed-air practice. Certificate in mine-rescue work can usually be obtained.

50.401 Geology—Mineral Deposits

The terminology, classification, manner of occurrence, distribution, and economics of mineral resources, with emphasis on typical Canadian occurrences. Ways of recognizing, discovering, and developing mineral deposits.

Laboratory work will illustrate and develop techniques in: megascopic study and identification of hand specimens; valuation of mineral deposits.

Field trips will be correlated with all classroom work in geology.

50.402 *See* 50.302.

SURVEYING

51.101, 51.201 Surveying

Introduction; types of survey; fundamental principles, accuracy and precision; linear measurements, trigonometric and differential levelling; angular measurements by theodolites; plane table, computations and adjustments of traverses; determination of areas and volumes; tacheometry; maintenance and adjustments of surveying equipment; circular curves; compound curves; reserve curves; vertical curves; transition curves; eccentric angular and linear observations; resection; intersection; in accessible base.

51.109, 51.209, 51.110, 51.210 Engineering Surveying

Fundamental concepts of surveying: measurement of distances, use of compasses, theodolites, plane tables, levels and chains, site surveys. Calculations relating to traverses, triangulations, areas, and volumes: obtaining, recording, and plotting topographic detail. Care, maintenance and adjustment of equipment.

51.110 *See* 51.109.

51.201 *See* 51.101.

51.203 Natural Sciences

Study of the forest flora of British Columbia; the characteristics of native trees, identifying features and common uses. Elementary geology, including the study of rocks and minerals; geologic structures, general location and uses of common ores; soil classification and location.

51.204, 51.205 Introduction to Survey for Natural Gas and Petroleum Technology Students

Introduction to the theory of engineering survey; practical application of linear measurements; introduction to and theory of the theodolite; bearings and traverse computations; introduction to and theory of levelling; computation of areas and volume.

51.205 Introduction to Survey for Landscape

See 51.204.

51.206 Introduction to Survey for Building Students

Introduction to engineering survey; linear distance; introduction to the theory and use of the theodolite; direction, bearings, and angles; use of traverses in site engineering, areas and volumes; elevations, use and theory of the level; use of the plane table; simple circular curves.

51.209, 51.210 *See* 51.109, 51.110.

51.301, 51.401 Plane Surveying Computations

Expansion of the computation program from (51.101 and 51.201). Traversing and adjustments by the Crandall method, nonsymmetrical vertical curves, transition curves (Sullivan spiral, lemmiscate), laying-out and dividing problems of legal survey, volume problems related to engineering surveys, etc.

51.302, 51.402 Geodetic Surveying II

Generally deals with surveys which take into account curvature of the earth; covers computations on the ellipsoid, triangulation, trilateration, trigonometric levelling, geodetic astronomy, co-ordinate systems, gravity, geodetic levelling, satellite geodesy, electronic surveying.

51.303 Mathematical Cartography

Concepts and properties of maps; classifications of maps; theory of distortions; conformality; equivalency; Jissot's indicatrix; conical projections, cylindrical projections; perspective projections; polyconic projection of British Columbia; UTM projection; stereographic projection of New Brunswick.

51.304, 51.404 *Field Surveying II*

Deals with the field methods used in conjunction with plane and geodetic surveying and is done in conjunction with these subjects; 51.304 consists mainly with the students learning how to use the different instruments, and 51.404 mainly with practical projects making use of these.

Projects are aimed at engineering hydrographic, mining, legal, and precise surveys and include some triangulation and trilateration work.

51.305 Draughting

Application of draughting for the preparation of topographical plans. Subdivision Plans. Draughting principles for scribing and inking of contours. Draughting materials and reproduction procedures.

51.306, 51.406 Astronomy

Introduction to practical astronomy; spherical trigonometry; the celestial sphere; the astronomical triangle; universal time, mean solar time, sidereal time; the ephemeris and star almanacs; instruments used in solar and stellar observations; star identification; observations for latitude; observations for time and longitude; observations for azimuth.

51.307, 51.407 Photogrammetry

Introduction to photogrammetry; optics and uses of cameras; principles of photography; photographic measurements and refinements; geometry of the vertical, oblique and terrestrial photographs; light planning; stereoviewing; photogrammetric co-ordinate systems; determination of heights and scales from photographs; photo interpretation; mapping and revisions from photographs; mosaics; stereo-plotting instruments; control for photogrammetric mapping; limitations in photogrammetry; general specifications.

51.308 Description for Deeds

Purpose and characteristics of descriptions; systems of survey, township system and district lot system, the preamble; the correct use of the words "more or less"; descriptions by adjoiners, description by aliquot parts, descriptions by metes and bounds, descriptions by exceptions, descriptions of rights-of-way by means of centre line; plans to accompany descriptions: Land Registry Office procedure, strata and space titles.

51.309, 51.409 Surveying for Civil and Structural Technology

Application of survey methods to construction surveys, topographic surveys; triangulation; base-line measurement, use of electronic measuring devices; route surveys, including preliminary profile and cross-sections, calculation of quantities and volumes, and plan preparation; site surveys, including horizontal and vertical control; bench-mark levelling and adjusting of nets; calculation of areas, volumes, closure, circular curves, transitional curves, and vertical curves; elementary photogrammetry applied to planning, site surveys, route surveys, grades, and quantities.

51.310, 51.410 Surveying for Mining Technology

Application of survey methods to underground surveying; illumination of stations; use of mining transits, connecting surface and underground surveys, location and control of tunnels, construction of plans and sections related to mining, elementary astronomy, elementary photogrammetry applied to mining, stope surveys and quantity calculations. Mining Acts related to surveying.

51.311, 51.411 Surveying (Photogrammetry Option)

Control surveys by triangulation, trilateration, and traversing; indirect optical distance measurement; electro-magnetic distance measurements; the gyro-theodolite; trigonometrical and barometric levelling.

51.315, 51.415 Cartography

Draughting principles as applied to photogrammetric compilation and cartography; inking and scribing techniques; surround detail; lettering and scales; production procedures.

51.317, 51.417 Photogrammetry

The geometry and physical nature of the photograph; optics for photogrammetry; principles of photography; dark room procedures; aerial cameras; stereoscopy, the spatial model; comparator measurements of photoco-ordinates; planning aerial photography; plotting instruments; classification and operation of stereo-plotters; aerial triangulation; photogrammetric control extension, co-ordinate transformation; use of electronic computers; photo interpretation; terrestrial and oblique photogrammetry; map compilation; cartography; remote sensing; photogrammetric refinement; general specifications.

51.401 *See* 51.301.

51.402 *See* 51.302.

51.403 Adjustments of Surveying Measurements

Definitions and classification of errors, measures of precision; propagation law of standard errors; weights and propagation of weights; principle of least squares (in matrix notation); adjustment by variation of parameters; conditional observations; combined adjustments; adjustments of triangulation—trilateration nets and of traversing.

51.404 *See* 51.304.

51.406 *See* 51.306.

51.407 *See* 51.307.

51.408 Plane Surveying II

Generally deals with surveys which do not have to account for curvature of the earth.

Analysis of methods and instrumental errors, use of specialized equipment.

Application of survey methods to engineering surveys, mining surveys, hydrographic surveys, legal surveys, and higher order surveys.

51.409 *See* 51.309.

51.410 *See* 51.310.

51.411 *See* 51.311.

51.415 *See* 51.315.

51.417 *See* 51.317.

MEDICAL LABORATORY

70.A01 Medical Laboratory Orientation

A critical review of the basic theory and use of microscopes.

70.A09, 70.B09 Clinical Laboratory Orientation

An introduction to the principles and use of precision instruments employed in the laboratory, along with an introduction to hæmatology pertinent to the nuclear medicine laboratory.

70.B01 Medical Laboratory Orientation

An introduction to principles and use of precision instruments and equipment pertaining to the clinical laboratory.

70.B09 *See* 70.A09

70.C01 Medical Laboratory Orientation

The principles and procedures of volumetric analysis.

70.E02 Instrumental Analysis in Clinical Chemistry

This course, designed primarily for the medical laboratory technologist, emphasizes the application of the following instruments: photometers and colorimeters, flame photometers, auto-analysers, fluorometers, etc. The use, care, and calibration of the instruments used in the clinical chemistry laboratory are taught, using biological specimens to demonstrate techniques involved.

70.E03 Hæmatology

Consists of a study of the composition of blood and the blood-forming tissues with emphasis placed on normal levels and functions; and an introduction to coagulation mechanism.

70.E04 Histology

The morphology of human cells, tissues, and organs. Emphasis is placed on the preparation of tissues for microscopic examinations: methods of fixation, embedding, sectioning, staining, and mounting.

70.E05 Microbiology

Introduction to principles and procedures of microbiology, including detailed study of laboratory procedures in clinical microbiology.

70.E08 Introduction to Clinical Laboratory Procedures (for Health Data Technology students)

An introduction to clinical laboratory procedures in the fields of Clinical Chemistry, Urinalysis, Hæmatology, Histology, and Blood Banking; for the purpose of interpreting laboratory reports in reference to conducting a medical audit.

70.F03 Hæmatology

Consists of detailed studies of cell series; abnormal levels and functions found in peripheral blood and in bone marrow; the anæmias; abnormal hæmoglobins; and special test procedures.

70.F05 Microbiology

Detailed study of laboratory procedures in clinical microbiology.

70.F07 Blood Banking

Involves the study of the principles of blood grouping, inheritance of human blood groups; immunity, and general methodology and techniques utilized in the identification of human blood group antigens and antibodies. Records and controls.

70.F12 Clinical Chemistry

The chemical principles and sources of error, along with the practical and theoretical aspects, of the various methodologies for the estimation in body fluids of protein, carbohydrates and lipids, in health and disease states. The biochemistry (anabolism and catabolism) of proteins, carbohydrates, and lipids (including steriods); the study of electrolytes and acid-base balance is also included.

70.G03 Hæmatology

Includes an introduction to the leukæmias; special test procedures; certain infectious disorders; and a detailed study of coagulation and test methods.

70.G05 Microbiology

Detailed study of laboratory procedures in clinical microbiology.

70.G07 Blood Banking

Specific methodology for the most important blood group systems encountered. Investigation studies for pre- and post-blood transfusions, fœtal-maternal incompatibilities, donor blood selection, screening, collection, and storage. Utilization and minimum acceptable standards for whole blood and blood products.

70.G12 Clinical Chemistry

A detailed study of enzymology, including methods of enzyme analysis. The function tests and physiology of the liver, reticulo-endothelial system, kidney, gastro-intestinal tract, and cerebro-spinal column are also stressed.

MEDICAL RADIOGRAPHY

72.A01 Introduction to Medical Radiography

This course will acquaint the student with the activities of the X-ray department and the role of a radiographer. A study is made of the application of basic factors in producing a radiograph.

72.A02 Apparatus and Image Recording

This course introduces the student to the standard equipment used in the production of a radiograph. Fundamentals of the photo-recording system are introduced. Also studied are the basic factors of X-ray exposure, transformers, simple electrical controls, X-ray film construction, and the various film holders. Laboratory work related to all of these is included.

72.B01 Basic Medical Radiography

The student becomes familiar with the fundamentals involved in setting up a technique chart and the evaluation of the patient with regard to body habitus. Basic radiographic positioning in the examination of the upper and lower extremities is studied.

72.B02 Not allocated

72.B03 Radiographic Anatomy and Physiology

This is a detailed study of the formative and mature human skeleton. The individual bones of the upper and lower extremities, the bony thorax, the vertebral column, and the skull are considered. Included in the study are the surface landmarks and radiographic appearances of each of the bones and joints.

72.C01 Basic Medical Radiography and Clinical Orientation

Basic radiographic positioning in the examinations of the vertebral column and thoracic cage is studied. An introductory study is made of radiography of the digestive, urinary, and biliary systems. During this term the students spend time in the X-ray department of one of the affiliated hospitals as an orientation to the clinical aspect of the course.

72.C02 Apparatus and Image Recording

Rectification, control circuits, and X-ray tubes comprise the apparatus studied in this course. The image-recording portion covers sensitometry and all aspects of radiographic processing. This includes developers, replenishers, fixers, ancillary chemicals, deep-tank, and various automatic processing systems.

72.C03 Radiographic Anatomy and Physiology

The organs, vessels, and other nonbony parts of the head, neck, chest, and abdomen are studied in this course. In addition to the specific structure and location of each component, emphasis is also placed upon the functions of structures as they relate to radiography.

72.E01 Radiographic Technique

This course presents a continuation of the study of the urinary, digestive, and biliary, which was introduced in 72.C01. Special techniques related to the skeletal system are studied. Instruction is given in the use of contrast media. Routine skull radiography is introduced. This course runs concurrently with 72.E06.

72.E02 Apparatus and Image Recording

The apparatus studied in this course comprises nonstandard equipment such as tomographic, fluoroscopic, photofluorographic, rapid-serial exposure, dental radiographic, and mobile units. The radiographic image is studied in detail. Included are storage and retrieval, illuminators, and photographic recording equipment such as still, rapid, and motion-picture cameras. Specialized image processing is covered. This includes videotape recording, disk, drum and tube storage, photographic reproduction, subtraction and image enhancement methods.

72.E05 Radiobiology and Protection

A study is made of ionizing radiation and its interaction with matter. The rœntgen, rad, and rem and their measurement are studied. Permissible exposures and their rationale are considered.

72.E06 Clinical Experience in Medical Radiography (Hospital)

This course runs concurrently with 72.E01. The student acquires a basic knowledge of medical radiographic techniques by applying classroom and laboratory training in actual clinical situations in the affiliated hospitals.

72.F01 Radiographic Technique

This course, given concurrently with 72.F06, provides instruction in radiographic procedures in examination of the skull, in detail. Included also is instruction in special procedures.

72.F02 Apparatus

This course includes the study of image amplifiers and closed-circuit television equipment. X-ray department planning and equipment faults are covered.

72.F05 Radiobiology and Protection

The mechanism of radiation injury is studied. Somatic and hereditary injury are considered. The operating procedures and equipment which will reduce radiation exposure to both operator and patient are covered in detail.

72.F06 Clinical Experience in Medical Radiography (Hospital)

This course runs concurrently with 72.F01. The student applies the more advanced classroom and laboratory training in the clinical situation.

72.F07 *Pathology for Medical Radiographers*

A study is made of the common pathological conditions which can be diagnosed radiologically.

72.G01 Radiographic Technique

This course, given concurrently with 72.G06, covers in detail pædiatric radiography and special radiographic procedures.

72.G06 *Clinical Experience in Medical Radiography (Hospital)*

This course runs concurrently with 72.G01. The student acquires a broad knowledge of medical radiographic techniques by applying classroom and laboratory training in special procedures in actual clinical situations. The student also acquires more clinical experience in basic radiography.

72.G07 Pathology for Medical Radiographers

A study is made of the effect of pathology upon the technical factors used in radiography. During this term the student is taught to make a critical assessment of film quality as it is affected by pathology.

NUCLEAR MEDICINE

74.B07 Introduction to Nuclear Medicine

This course provides the student with an introduction to Nuclear Medicine and its scope and role in the field of diagnostic and therapeutic medicine. The basic concepts of how and why radiopharmaceuticals yield diagnostic information are discussed and illustrated. The student gains basic knowledge of the biological hazards of radiation. Radioactive contamination and its avoidance and containment are discussed. National and international regulations regarding the procurement, storage, handling, shielding, monitoring, and disposal of radionuclides are studied. Pertinent terminology is taught throughout the course.

74.C07 *Introduction to Nuclear Medicine*

This course provides the student with a complete study of the production, quality control, and storage of radio-pharmaceuticals currently in use. The mechanisms of localization of radionuclides both in vivo and in vitro are discussed. Future trends in Nuclear Medicine techniques are considered. Study is made of the calibration and decay of radionuclides. The types and uses of radioactive "standards" are covered, along with other basic aspects of radiopharmaceutical assay.

74.E04 Applied Physiology in Diagnosis and Therapy

In this course, and 74.F04 and 74.G04, the student is instructed in all aspects of the current applied physiology, including criteria, methodology, patient problems and approach, data collection and manipulation, etc.

Subjects covered specifically in this course include the thyroid gland, hæmatological studies, and the renal and hepatic systems.

74.E05, 74.F05, 74.G05 Clinical Experience in Diagnostic and Therapeutic Procedures

This course runs concurrently with 74.E04, 74.F04, and 74.G04. The student acquires a broad knowledge of nuclear medicine techniques by applying classroom and laboratory training in actual clinical situations in affiliated hospitals and clinics.

74.E06, 74.F06 Pathology for Nuclear Medicine Technologists

This course provides the student with a basic knowledge of human disease and the associated terminology. The causes of disease are studied. Emphasis is placed on those conditions likely to be encountered by the student in his/her role as a nuclear medicine technologist.

74.E08 Imaging

This course is designed to familiarize the Nuclear Medicine Technology student with the many methods and materials used to visually display the spatial distribution of radioactivity in nuclear imaging procedures. The utilization of optical, photographic, video tape, and computer visual displays will be covered in theory and practice.

74.F02 Radiobiology and Protection

A detailed study is made of ionizing radiation and its interaction with matter. The rœntgen, the rad, and the rem are studied. Primary and secondary guide levels and their rationale are considered in detail, as well as the estimation of safe working procedures in special situations.

74.F04 Applied Physiology in Diagnosis and Therapy

This course follows 74.E04. The areas covered include the central nervous system, the respiratory and skeletal systems; the G.I. tract and the pancreas.

74.F05 *See* 74.E05.

74.F06 *See* 74.E06.

74.G02 Radiobiology and Protection

The interaction of ionizing radiation with living systems is studied. The basic principles of radiation therapy and radionuclide dosimetry are considered.

74.G04 Applied Physiology in Diagnosis and Therapy

This course follows 74.E04 and 74.F04. It deals with the cardiac system, eye tumour localization, and the parathyroid glands. Therapeutic measures using radiopharmaceuticals are also included. Considered are the newer techniques and advances such as activation analysis and radioimmunossay. A complete review of the Applied Physiology course, i.e., 74.E04, 74.F04, and 74.G04, will be presented.

74.G05 *See* 74.E05.

74.H05 Clinical Experience in Diagnostic and Therapeutic Procedures

This course consists of full-time attendance in the nuclear medicine department of an affiliated hospital. The purpose is to further develop the skills necessary for the student to function safely and adequately in a nuclear medicine laboratory. Hands on experience will be gained in all aspects of in vitro and in vivo procedures.

76.A20 Nursing I

This course combines theory and laboratory practice and is designed to introduce the student to nursing interventions that facilitate health maintenance in individuals of all ages. Basic concepts of both health and health maintenance are related to human needs. Emphasis is placed upon designing nursing interventions to assist individuals maintain health by meeting needs for protection, activity, and mental well-being.

76.A25 Clinical Experience for Nursing I

This course provides the opportunity to practice basic nursing skills in hospital and community settings. Emphasis is placed upon the assessment of health maintenance needs for protection, activity, and mental well-being; and upon the provision of nursing care related to identified needs. It must be taken concurrently with 76.A20.

76.B02 Introduction to Pharmacology

This course is designed to familiarize the student with common drugs and acceptable abbreviations used in the health field. The legal implications of drug usage are also discussed.

76.B20 Nursing II

This course combines theory and laboratory practice and continues to develop the concept of health maintenance introduced in Nursing I. Emphasis will be placed upon designing nursing interventions to assist individuals maintain health by meeting needs for nutrition, elimination, and respiration. Courses 76.A20, 76.A25, 98.A06, and 98.A30 are prerequisites.

76.B25 Clinical Experience for Nursing II

This course provides the opportunity to continue to practise basic nursing skills in hospital and community settings. Emphasis is placed upon the assessment of health maintenance needs for nutrition, elimination, and respiration and the provision of nursing care related to identified needs. It must be taken concurrently with 76.B20.

76.C02 Fundamentals of Patient Care

This course assists the student to understand the hospital environment and the health problems of the patient. Emphasis will be placed upon observation and communication appropriate for the nuclear medicine technologists. The nursing laboratory will be used to practise basic technical skills and procedures required in emergency situations.

76.C30 Nursing III

This course combines theory and laboratory practice and focuses upon health promotion and therapeutic nursing interventions designed to alleviate health problems related to difficulties in meeting needs for protection, activity, and mental well-being. Selected health problems are studied in relation to pathophysiology, psycho-social changes, diagnostic tests, and therapeutic interventions. Courses 76.B20, 76.B25, 98.B06, 98.B30, and 98.B04 are prerequisites.

76.C35 Clinical Experience for Nursing III

This course provides the opportunity to practise therapeutic nursing skills in hospital settings. Emphasis is placed upon health promotion and upon the utilization of the nursing process to plan, implement, and evaluate nursing care for adults and children who are experiencing difficulty meeting needs

for protection, activity, and mental well-being. This course must be taken concurrently with 76.C30.

76.D26 Physical Fitness

This course is designed to assist students to improve their physical fitness.

76.D30 Nursing IV

This course combines theory and laboratory practice. It continues to develop the concept of health promotion introduced in Nursing III and focuses upon therapeutic nursing interventions designed to alleviate health problems related to difficulties in meeting needs for nutrition, elimination and respiration. Courses 76.C30, 76.C35, 98.C06, 98.C30, and 98.C44 are prerequisites.

76.D35 Clinical Experience for Nursing IV

This course provides the opportunity for the further practice of therapeutic nursing skills in hospital settings. The primary focus continues to be placed upon the concept of health promotion introduced in Clinical Experience in Nursing III. Emphasis is placed upon the provision of nursing care to adults and children who are experiencing difficulty meeting needs for nutrition, elimination, and respiration. This course must be taken concurrently with 76.D30.

76.E01 Fundamentals of Patient Care

This course assists the student to function effectively in the hospital. Emphasis will be placed upon observation, communication, and the recognition that the patient and his/her health problems are the foci of activities of all members of the health team. Basic technical skills will be practised in the nursing laboratory.

76.E30 The Childbearing Family

This course is designed to focus upon the physiological, psychological, and social adjustments which occur to individuals and expectant families during child-bearing. Some emphasis will be placed upon nursing intervention in at risk situations. All first-year courses, except 76.D26, are prerequisite.

76.E35 Experience With the Childbearing Family

This course provides the student with the opportunity to apply the nursing process and related manual skills when caring for the child-bearing family. Experience in doctors' offices, health agencies, and hospital will be provided. This course must be taken concurrently with 76.E30.

76.E39 Ambulatory Care

A study of the role of the nurse in the planning and provision of health care in the community. Selected handicapping conditions of children and adults are viewed in terms of presenting problems, family dynamics, principles of ambulatory care in the community, pathophysiology of the condition, community resources, and nursing interventions. Emergency care and accident prevention are presented as vital components of nursing responsibilities in the community. All first-year nursing courses are prerequisite, except 76.D26.

76.E40 Mental Health Nursing

This course provides the student with a basic theoretical framework for the understanding of human behaviour which can be utilized in any encounter with people. Helpful ways of responding to a variety of behaviours are explored. All first-year courses are prerequisites for this course, except 98.C44 and 76.D26.

76.E41 Psychiatric Nursing I

This course introduces the basic concepts of psychiatric nursing; providing the student with an understanding of patterns of mental illness and learning problems in all age groups. All first-year courses, except 76.D26, are prerequisite.

76.E44 Clinical Experience for Ambulatory Care

A supplement to 76.D39, Ambulatory Care, this course stresses self-directed utilization of the nursing process in the assessment of health care and provides the opportunity to visit and assess community agencies, to visit the homes and communities of handicapped individuals and their families, to interview children and adults concerning their health, to observe the family physician as he/she interacts with children and adults, and to participate in health teaching and counselling.

76.E45 Experience for Mental Health Nursing

Clinical experience is provided in an acute psychiatric treatment centre, allowing the student an opportunity to directly observe a variety of behaviours as well as an opportunity to develop skills in interpersonal situations. All first-year courses are prerequisites for this course, except 98.C44 and 76.D26.

76.E46 Experience for Psychiatric Nursing I

This course provides clinical practice in psychiatric treatment areas. Emphasis is placed upon the development of skills of observation, nursing process, and communication at a beginning level. This course must be taken concurrently with 76.E41.

76.E47 Psychology I

This course discusses the relationship of basic neurological processes to behaviour. Basic neuroanatomy and physiology are reviewed and concepts of dynamic brain function are introduced.

76.E50 Medical-Surgical Nursing

This course is designed to focus upon the nursing intervention required in medical and surgical crises situations for both children and adults. Previously learned concepts such as obstruction, inflammation, hæmorrhage, stress, grief, and loss will be applied to crisis situations. All first-year courses, except 76.D26 and 98.B04, are prerequisites.

76.E55 Experience for Medical-Surgical Nursing

This course is designed to provide an opportunity for students to apply the nursing process and related manual skills to medical surgical crisis situations in hospitals. This course must be taken with 76.E50.

76.F41 Psychiatric Nursing II

This course presents concepts of family interaction as they relate to mental health and mental illness. The basic concepts of nursing intervention in distressed family situations are introduced. Course 76.E41 is prerequisite.

76.F46 Experience for Psychiatric Nursing II

The student practises in a variety of hospital and community settings, integrating his/her knowledge of behaviour patterns and family interaction and further developing therapeutic communication skills. This course must be taken concurrently with 76.F41.

76.F47 Psychology II

This course introduces concepts of learning theory as they relate to the understanding of human behaviour. Principles of learning, motivation, problem-solving are considered.

76.G11 Theatre Techniques

This course is designed to offer experiences in theatre techniques which will include self-expression exercises, theatre games, and body awareness. This course provides basic skills which can be applied to a variety of psychiatric treatment settings.

76.G26 Recreation and Activity—Nursing Tools

This course explores the use of recreation and planned activity by the psychiatric nurse in working with people who have mental health problems. The student will require to plan and participate in a variety of activities enabling him/her to explore the therapeutic value for patients.

76.G30 Self-awareness

This course will consist of structured group situations designed to teach various techniques of relaxation and body awareness which are useful in psychiatric settings.

76.G41 Psychiatric Nursing III

The student studies the major psychiatric theories and forms of treatment as they relate to an understanding of behaviour and to psychiatric nursing. Group dynamics and interactional concepts related to providing a therapeutic environment are introduced.

76.G46 Experience for Psychiatric Nursing III

The student is expected to assume responsibility for planning, implementing, and evaluating nursing care for patients in a variety of mental health settings. Emphasis will be placed upon the development of effective group skills.

76.H41 Advanced Psychiatric Nursing

This course is designed to focus upon the responsibilities of a beginning-nurse practitioner in psychiatry. Emphasis will be placed upon group dynamics in the work-setting, organizational skills, legal implications, and professional responsibilities. Career opportunities and changes in nursing education and nursing practice will also be discussed. Course 76.G46 is prerequisite.

76.H46 Experience for Advanced Psychiatric Nursing

This course involves the student in clinical practice in an area of his/her choice. Emphasis is placed on a final integration of previously acquired knowledge and skill. The student has an opportunity to assume the role of a beginning practitioner in psychiatric nursing. This course must be taken concurrently with 76.H41.

76.H70 Advanced Nursing

This course is designed to focus upon the responsibilities of a beginning-nurse practitioner. Emphasis will be placed upon group dynamics in the work-setting, organizational skills, legal implications, and professional responsibilities. Career opportunities and changes in nursing education and nursing practice will also be discussed. Prerequisite courses are 76.E50, 76.E30 76.E39, and 76.E40.

76.H75 Experience for Advanced Nursing

This course involves the student in clinical practice in an area of his/her choice. In addition to using the nursing process and reinforcing and learning new skills, an opportunity is provided to assume some of the functions of a beginning practitioner. This course must be taken with 76.H70.

BIOMEDICAL ELECTRONICS

78.A71, 78.B71, 78.C71, 78.E71, 78.F71 Electronics Principles and Practice

Teaches the Biomedical Electronics students the principles and practices current in the electrical and electronics fields.

Topics include electrical quantities, their units, and the relationships between them, with the application of d.c. and a.c. energy sources; circuit components and the techniques involved in circuit fabrication—semiconductor and tube analysis; amplifiers, oscillators, power supplies, and pulse circuits.

78.B71 *See* 78.A71.

78.C71 *See* 78.A71.

78.E01, 78.F02, 78.G03 Biomedical Electronics

This course, taken concurrently with courses in the life sciences and mathematics, provides familiarity with the instrumentation associated with treatment, diagnosis, and the electronic recording and measurement of biological and related signals.

78.E71 *See* 78.A71.

78.F02 *See* 78.E01.

78.F71 *See* 78.A71.

78.G03 *See* 78.E01.

78.G05 Practical Experience in Biomedical Electronics

During quarter G, students gain practical experience in biomedical electronics and related fields while working under supervision at a number of local hospitals, research agencies, and private companies.

HEALTH DATA

80.A01, 80.B01, 80.C01 Health Record Science

The first year Health Record Science course provides the student with a knowledge of the fundamental principles and practices of health record science. After a brief orientation to the Health Data Technology, the areas studied in Quarter A will include a detailed examination of all aspects of the health record from its formation to completion, the Canadian Council on Hospital Accreditation program, and the organization of the health care system on a National, Provincial, local, and intra-hospital basis.

In the next quarter, studies include an analysis of the Health Record Practitioner's professional responsibilities; introduction to a new record-keeping system, the Problem-Oriented Record; the patients' index; numbering and filing systems; record retention requirements; microfilming; the relationship of the HDT with B.C. Hospital Programs, the medico-legal aspects of health records; and office practice records. During the final quarter of the year, emphasis is placed on accessibility and retrieval of data involving the disease index, operation index, and physicians index, coding according to H-ICDA, and PAS abstracting.

80.A22, 80.B22 Concepts of Disease Processes

An introduction to the concepts of disease processes, which includes basic rules of medical terminology, medical specialties, operative terminology, medical abbreviations, and the problem-solving approach in pathophysiology. Diseases are studied under the headings of the body systems involved.

80.B01 *See* 80.A01.

80.B22 *See* 80.A22.

80.C01 *See* 80.A01.

80.C04 Medical and Surgical Transcription

Transcription practice with medical, pathology, and surgical report dictation for health records.

80.E01 Health Record Science

A problem-solving approach to medical record department management studied in depth, focusing on such areas as specialized hospitals and their medical record departments (psychiatric, rehabilitative, extended-care, cancer clinic), current trends in health care (community health centres, emergency departments' changing role, the problem-oriented system, record linkage, universal numbering system).

80.E02, 80.F02 Health Information Processing

This course emphasizes the processing and use of health information from an analytical and statistical point of view. Included in Quarter E are an analysis and definition of various hospital terms, services, and formulæ for compilation of certain basic data in a hospital or other health facility. The student learns how to manually tabulate data and how to prepare and present a proper statistical report using appropriate techniques. Federal and Provincial vital statistics are studied, particularly as they relate to the Health Data Technologist. Statistics for specialized records are investigated and examined from the viewpoint of what is required and how the data can be

collected. In addition, the students learn a new coding system—The Standard Nomenclature of Diseases and Operations.

In Quarter F, studies include a detailed examination of medical staff committee structure, functions, and relationship with the Health Data Technologist. The Commission on Professional and Hospital Activities and its various programs are studied in depth with emphasis on data retrieval. Another automated system, Hospital Medical Records Institute, is introduced as well as two new coding systems, SNOP and SNOMED. Both Quarters include weekly laboratory exercises in PAS coding and abstracting.

80.E04 Medical and Surgical Transcription

Practice transcribing medical, pathological, and surgical dictation for health records.

80.F01 Health Record Science

Application of health record science principles as studied in 80.E01 through term papers, seminars, and projects.

80.F02 *See* 80.E02.

80.F04 Medical and Surgical Transcription

Practice transcribing varied advanced-level medical reports.

80.G01 Health Data Practicum

Practical experience in the medical record departments of local general and specialized hospitals, and other health facilities, under the supervision of the Director of Medical Record Services and a faculty member. The student spends two intramural sessions, one of six weeks and one of four, in various hospitals and other health care facilities for a total of 10 weeks' practicum. After the first practical session, one week is spent at BCIT in comparative analysis and discussion of the health record procedures as performed at the practicum sites. The final week of the quarter concentrates on a general health record science review.

ENVIRONMENTAL HEALTH SERVICES

82.A01, 82.B01 Public Health Inspection

This course will provide the student with a knowledge of duties and responsibilities in governmental organizations. A detailed review of related environmental and health legislation will be covered, as well as the division of control and authority at the Federal, Provincial, and local levels. Control techniques and methodology used by governmental organizations is stressed.

82.B01 *See* 82.A01.

82.B02 Food Sanitation

An introductory course in sanitary practices and inspection techniques associated with the production, processing, and distribution of food. Visits are made to food premises.

82.C10 Draughting and Blueprint Reading

Fundamental introduction to draughting: lettering, oblique and isometric, perspective presentation techniques, charts and graphs, topographic maps, subdivisions, plan and profile of sewer systems, etc. Fundamental introduction to blueprint reading: principles of design of buildings, food processing plants, swimming-pools, camp-sites; plumbing, ventilation, lighting, acoustics, floor and building layouts.

82.C11 Private Water Supplies and Waste-disposal Systems

An introductory course which examines the means, methods, and the design and construction of facilities required to provide adequate potable water and sewage disposal in areas where municipal treatment systems are not available. Associated health hazards, protective measures, and how to solve problems encountered in individual systems will be considered. Further topics will include the characteristics of, and disposal methods for, agricultural wastes.

82.E02 Food Hygiene

An examination in depth is made of the production methods of the main classifications of food, i.e., milk and milk products, meat, poultry, fish, baked goods, etc. Related sanitary control measures are studied. Visits are made to appropriate production plants.

82.E04 Public Health Administration

The theoretical aspects of public health administration will be examined, showing the administrative philosophies from the classical school of administration to present-day philosophy. These administrative concepts will be dealt with as they apply to the functioning of governmental agencies and health departments. Particular reference will be made to Canadian governmental organization.

82.E11 Hydraulics, Hydrology, Surveying

Hydrostatics, properties of fluids, pressure; flow of fluids, velocity head, venturic jets, orifices, wires, water hammers; flow laminar and turbulent meters, valve pumps. The application of precipitation data to various run-off areas, measurement of storage and flows, characteristics of open channel and pipe flows, hydraulics in treatment plant design. Surveying.

82.E14 Environmental Health and Engineering

This course will cover a number of topics relevant to the field of environmental Public Health. Topics included will be Insect and Rodent Control, Solid Waste Disposal, Emergency measures, Camp and Recreational sanitation, Housing, Environment and Community planning.

82.E15 Industrial Hygiene and Toxicology

An introduction to the ways and means of anticipating and recognizing potentially harmful situations. The course will cover topics such as types of surveys, industrial hygiene records and reports, human engineering and industrial safety sanitation, the mode of entry and action of toxic materials, pulmonary dust diseases and occupational dermatosis.

82.F05 Environmental Health Relations

This course examines the inter-relationships and interactions between various government departments, agencies, and corporations. Additionally, the forces which underlie the social behaviour of groups, large organizations, and communities will be examined. Interpersonal relations in the work-setting will be exemplified through the practical application of public health education and the interaction of organized persons in the environmental health field.

82.F07 Industrial Chemical Processes

This course is designed to give the student an overview and familiarity of the various chemical processes used in industry; the chemicals used, chemical reactions, products manufactured, waste products and pollutants produced, and the hazards to personnel. Students will make field trips to selected industries.

82.F08 Public Health Law

An examination of the legal system which serves our society, followed by a detailed look at certain areas of substantive law which the public health technologist is likely to come in contact with in carrying out his/her duties. Special attention will be given to selected public health legislation.

82.F15 Industrial Hygiene and Toxicology

This is a continuation of the course 82.E15. It will cover the following areas—fire and explosion hazards of combustible gases, vapours, and dusts; physiological effects of abnormal pressure; noise and hearing conservation; radiant energy, lighting, and the control of heat and its effects on workers.

82.G06 Applied Environmental Health—Personnel Administration

An introduction to the fundamental procedures of personnel management as applied to the public health organizational complex. Particular emphasis will be placed on individual interaction within the structure and techniques used to obtain the maximum effectiveness and efficiency of public health personnel.

82.G11 Municipal Water and Sewage-treatment Systems

This course is designed to familiarize the student with the field of municipal water supplies, including protection, treatment, and distribution, and associated problems. Various methods of municipal sewage treatment, the collection system, characteristics of domestic and industrial wastes, and treatment and disposal problems will be studied. Cost factors will be considered.

82.G15 Air Pollution Control

Emphasis will be placed on the application of engineering control measures to prevent possible injury of persons working in industry. Areas considered are sampling analysis and evaluation of atmospheric contaminants, air conditioning and cleaning, ventilation, air pollution, control equipment, and the effects of air pollution.

BASIC HEALTH SCIENCES

98.A01, 98.B01, 98.C01 Human Anatomy and Physiology

These courses involve a systemic approach to the study of human anatomy and physiology designed for Medical Laboratory Technology students. The first quarter includes basic cytology, an introduction to histology, and the skeletal and muscular systems. The second quarter focuses on the nervous, circulatory, and respiratory systems. The digestive, urinary, and reproductive systems are covered in the third quarter. The primary emphasis is on the physiology of these systems. Basic biochemistry related to each system is also included.

98.A03, 98.B03 Human Anatomy and Physiology

A study of human anatomy and physiology carried out by a consideration of the body systems. During the first quarter attention is given to the structure and function of cells, tissues, and the skeletal, muscular, and nervous systems. The remaining body systems are considered during Quarter B.

98.A04, 98.B04 Basic Anatomy and Physiology

These courses, for Nuclear Medicine Technology students, involve a systemic approach to the study of human anatomy and physiology. Sections on basic cytology and histology are included. Emphasis is placed on the physiology of human systems.

98.A05, 98.B05 Basic Anatomy and Physiology

These courses, presented to Radiography students, are a systemic study of the basics of human anatomy and physiology to prepare the student for the courses 72.B03 and 72.C03. Included are basic physiological chemistry, cytology and histology.

98.A06 Anatomy and Physiology

A survey of the basic structure and function of the systems of the human body.

98.A07, 98.B07, 98.C07 Human Anatomy and Physiology

The course provides a basic knowledge of anatomy and physiology. It relates this knowledge to medical terminology used by health data technologists and to other aspects of their work, e.g., pathology, operative procedures, and coding.

98.A15 Genetics

An introduction to the basics of medical genetics. The course relates the knowledge of the basic principles of hereditary transmission to the medical terminology used by medical and paramedical personnel.

98.A21 Behavioural Sciences

This course presents basic psychological and sociological concepts of health and illness behaviour. Emphasis is placed on analytical examination of these concepts.

98.A22 Behavioural Sciences

A basic knowledge of behavioural science as it pertains to health and illness behaviour is presented. Emphasis is placed on the understanding and problem-solving of actual situations that are likely to be encountered in the working environment.

98.A23, 98.B23 Organizational Psychology

A study of organizational psychology as it pertains to health care organizations. Emphasis is placed on acquiring knowledge and skills to enable the health data technologist to communicate, supervise, and evaluate in the medical records work situation.

98.A24, 98.B24 Behavioural Sciences

An introduction to the basics of the psychological and social environment of health care organizations, with the aim of understanding how communication patterns affect task activities.

98.A30 Human Development

The course focuses on the processes of growth and development throughout the life cycle. Physical, cognitive, affective, and social development are surveyed. Emphasis is placed on relating developmental concepts to health care.

98.A42, 98.B42 Public Health and Pollution Control Microbiology

An introduction to those areas of microbiology which the public health inspector will use in his daily work. The areas include the structure and physiological characteristics of bacteria, viruses, and fungi, and their significance as related to food, water, sewage, and waste disposal.

98.A44 Microbiology

An introduction to basic microbiological concepts, including the distinguishing characteristics of micro-organisms, methods of controlling infectious disease, and host-parasite relationships.

98.A45, 98.B45 Microbiology and Epidemiology

This course deals with the basic characteristics of the various types of micro-organisms that cause disease in man. The concepts of communicability and host resistance are included. The epidemiology of specific infectious diseases is considered in Quarter C.

98.B01 *See* 98.A01.

98.B03 *See* 98.A03.

98.B04 *See* 98.A04.

98.B05 *See* 98.A05.

98.B06 Physiology

A study of physiological regulation and control based on the fundamentals established in 98.A06.

98.B07 *See* 98.A07.

98.B16 Medical Genetics

A course designed to teach the nursing student the basic principles of human genetics. By the use of actual examples, the various mechanisms in the transmission of genetic traits are discussed, and include dominant, recessive, intermediate, and sex-linked inheritance; chromosomal aberrations; mutagenic agents; consanguinity; mutants and mutant rates. A discussion on amniocentesis and genetic counselling is included.

This course should provide the student with a better understanding of some of the medical cases that will have to be administered and cared for.

98.B23 *See* 98.A23.

98.B24 *See* 98.A24.

98.B30 Human Behaviour I

This course provides an interdisciplinary approach to the study of human behaviour. Basic terminology and concepts of psychology and sociology are presented. In addition, research methods and theories of human behaviour are reviewed.

98.B42 *See* 98.A42.

, 98.C43 Introductory Principles of Immunology

basic course designed to give the medical laboratory student encounter- nmunology for the first time a general background in this broad field of study.

The course deals with body defences to disease; types of immunity and their physiological characteristics; biologicals used; nature and function of antigens and antibodies; the basic principles and mechanics of *in vitro* immunologic diagnostic tests; hypersensitivities, their characteristics and management; immune deficiency diseases, and autoimmunity.

98.B45 *See* 98.A45.

98.C01 *See* 98.A01.

98.C04 Basic Anatomy and Physiology

This course, for public health students, is designed to provide a basic knowledge of human anatomy and physiology. Emphasis is placed on the physiology of the body systems, and on how environmental factors can affect these systems.

98.C06 Pathophysiology

A consideration of the fundamentals of disease processes, emphasizing a variety of commonly encountered pathological conditions.

98.C07 *See* 98.A07.

98.C30 Human Behaviour II

This course further develops the interdisciplinary approach to the study of human behaviour introduced in 98.B30. Emphasis is placed on the study of the family as a social institution as well as on other forms of group process and collective behaviour. The relationship between behavioural sciences and problems of health care is explored.

98.C41 Microbiology and Epidemiology

An introductory course designed to present the student with a basic knowledge of medically important micro-organisms. Topics include physiologic behaviour of micro-organisms; host-parasite relationships; communicability of infection; sources of infection, particularly as they exist in a hospital environment; methods of control, including asepsis and use of destructive agents.

98.C43 *See* 98.B43.

98.C44 Principles of Immunology and Hypersensitivity

This course provides the student in nursing with a basic understanding of the broad field of immunology.

Specifically directed to nursing, the course deals with body defences to disease; the types and characteristics of immunity; humoral and cellular immunity; autoimmunity; surveillance and homeostasis; antigens and antibodies, their characteristics and functions; hypersensitivities, their diagnosis, characteristics and control; immunogenetics; hemolytic diseases; immune deficiencies and related diseases; organ and tissue transplantation.

The course requires a sound basic knowledge of physiology.

98.C46 Introductory Microbiology

An introduction to the basic characteristics of bacteria, rickettsia, viruses, and pathogenic fungi. The concepts of infection, host resistance, disinfection, sterility, and aseptic technique are included.

98.E02, 98.F02, 98.G02 Physiology

A review of human physiology, for biomedical electronics students, with emphasis on the cardio-vascular, nervous, respiratory, muscular and urinary systems.

98.F29 Sociology of Mental Health

This course examines various concepts and theories of mental health and mental ill-health as reflected in the individual, in the community, and in the society.

98.F02 *See* 98.E02.

98.G02 *See* 98.E02.

98.G48 *Communicable Disease Control*

This course is designed to provide the student with a sound knowledge of the natural history, spread, and control of communicable diseases. Emphasis is placed on specific diseases of Provincial and National importance.

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