

The University OF British Columbia



CALENDAR

TWENTY-FIFTH SESSION
1939-1940

VANCOUVER, BRITISH COLUMBIA
1939

CHANGES IN CALENDAR REGULATIONS

Students are warned not to assume that regulations remain unchanged from year to year, and attention is called particularly to the following items in this Calendar:

1. Change made in fees for Graduate students. Page 40.
2. Changes made in passing grades. Pages 100, 179, 206, 259.

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OF
British Columbia



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ACADEMIC YEAR

1939

August

15th Tuesday

Last day for submission of applications for Supplemental Examinations.

15th Tuesday

Last day for submission of applications for admission to Second Year Nursing and to the Teacher Training Course.

17th Thursday }
18th Friday }

Supplemental Examinations—Second Year Nursing.

September

1st Friday

ACADEMIC YEAR begins.

4th Monday

Labour Day. University closed September 2nd-4th, inclusive.

5th Tuesday to }
12th Tuesday }
13th Wednesday }

Supplemental Examinations.

15th Friday

Last day for Registration of all First and Second Year Students. (See Aug. 15, above.)

15th Friday

Last day for Registration of all other undergraduates except students in Extra-Sessional Classes and Directed Reading Courses.

18th Monday

First and Second Year Arts and Science, Applied Science, Agriculture, Organization.

25th Monday

Lectures begin at 8:30 a.m.

30th Saturday

Last day for change in Students' courses.

Last day for handing in graduation essays and theses (Autumn Congregation).

October

2nd Monday

Last day for payment of First Term fees. Payment of first instalment of Scholarship money. Thanksgiving Day. University closed.

4th Wednesday

Last day for payment of fees for Autumn Graduation.

11th Wednesday

Meeting of the Faculty of Arts and Science.

18th Friday

Last day for Registration and payment of fees of Graduate Students and of Students in Extra-Sessional Classes and Directed Reading Courses.

18th Friday

Meeting of the Faculty of Agriculture.

18th Wednesday

Meeting of the Senate.

25th Wednesday

Congregation.

27th Friday

Meeting of the Faculty Council.

November

11th Saturday

Remembrance Day. University closed.

December

13th Wednesday

Meeting of the Faculty of Arts and Science.

15th Friday

Meeting of the Faculty of Agriculture.

16th Saturday

First term ends.

20th Wednesday

Meeting of the Senate.

25th Monday

Christmas Day. University closed December 23rd-26th, inclusive.

1940**January**

1st Monday	New Year's Day. University closed December 30th-January 2nd, inclusive.
3rd Wednesday	Second Term begins.
15th Monday	Last day for payment of Second Term fees. Payment of second instalment of Scholarship money.

February

14th Wednesday	Meeting of the Faculty of Arts and Science.
16th Friday	Meeting of the Faculty of Agriculture.
21st Wednesday	Meeting of the Senate.
23rd Friday	Meeting of the Faculty Council.

March

22nd Friday	Good Friday. University closed March 22nd-25th, inclusive.
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April

11th Thursday	Last day of Lectures.
11th Thursday	Last day for handing in graduation essays and theses.
18th Saturday to } 26th Friday	Sessional Examinations.
	Field work in Applied Science begins immediately at the close of the examinations.
25th Thursday	Last day for payment of Graduation fees.
26th Friday	Last day for handing in applications for Scholarships.

May

4th Saturday	Meeting of the Faculty of Agriculture.
6th Monday	Meeting of the Faculty of Arts and Science.
8th Wednesday	Meeting of the Senate.
9th Thursday	Congregation.
9th Thursday	Meeting of Convocation.
24th Friday	Victoria Day. University closed.

June

9th Sunday	King's Birthday. University closed.
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July

1st Monday	Dominion Day. University closed.
3rd Wednesday	Summer session begins.

August

15th Thursday	Last day for submission of applications for Supplemental Examinations.
17th Saturday	Summer Session ends.
23rd Friday	Meeting of the Faculty of Arts and Science.
23rd Friday	Meeting of the Senate.
31st Saturday	ACADEMIC YEAR ends.

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 W. B. COULTHARD, B.Sc. (London), M.A.I.E.E., A.M.I.E.E., Assistant Professor of Electrical Engineering.
 JOHN F. BELL, O.B.E., R.N., Eng. Capt., M.E.I.C., Assistant Professor of Mechanical Engineering.
 W. O. RICHMOND, B.A.Sc. (Brit. Col.), M.S. (Pittsburg), Assistant Professor of Mechanical Engineering.
 H. M. McILROY, M.Sc. (Queen's), Assistant Professor of Mechanical Engineering.
 H. P. ARCHIBALD, B.A.Sc. (McGill), Assistant in Drawing.

Department of Mining and Metallurgy

- J. M. TURNBULL, B.A.Sc. (McGill), Professor and Head of the Department.
 GEORGE A. GILLIES, M.Sc. (McGill), Professor of Metallurgy.
 FRANK A. FORWARD, B.A.Sc. (Toronto), Assistant Professor of Metallurgy.
 W. B. BISHOP, Instructor in Metallurgy.

Department of Modern Languages

- DAVID OWEN EVANS, M.A., D.Phil. (Oxon.), D.Lett. (Univ. of Paris), Professor and Head of the Department.
A. F. B. CLARK, B.A. (Toronto), Ph.D. (Harvard), Officier d'Académie, Professor of French.
MISS ISABEL MACINNES, M.A. (Queen's), Ph.D. (California), Associate Professor of German.
MISS JANET T. GREIG, B.A. (Queen's), M.A. (Brit. Col.), Officier d'Académie, Assistant Professor of French.
MISS DOROTHY DALLAS, M.A. (Brit. Col.), D.Lett. (Univ. of Paris), Assistant Professor of French.
MISS WESSIE TIPPING, M.A. (Brit. Col.), D.Lett. (Univ. of Paris), Assistant Professor of French.
MISS JOYCE HALLAMORE, M.A. (Brit. Col.), Ph.D. (Munich), Assistant Professor of German.
RONALD HILTON, M.A. (Oxon.), Assistant Professor.
CHARLES ERNEST BORDEN, M.A., Ph.D. (California), Assistant Professor.
MADAME D. DARLINGTON, Instructor.
MRS. ALICE ROYS, A.M. (Calif.), Instructor in German.

Department of Nursing and Health

- C. E. DOLMAN, M.R.C.S. (England), M.B., B.S., M.R.C.P., D.P.H., Ph.D. (London), Acting Head of the Department.
MISS MABEL F. GRAY, R.N., Cert.P.H.N. (Simmons College), Assistant Professor of Nursing and Health.
MISS MARGARET E. KERR, R.N., B.A.Sc. (Brit. Col.), M.A. (Columbia), Instructor.
MISS FYVIE YOUNG, R.N., B.A.Sc. (Brit. Col.), M.A. (Columbia), Instructor. (Under the Rockefeller Foundation Grant.)

Department of Philosophy and Psychology

- H. T. J. COLEMAN, B.A. (Toronto), Ph.D. (Columbia), Professor and Head of the Department.
J. A. IRVING, B.A., M.A. (Toronto), B.A., M.A. (Cambridge), Professor of Philosophy.
JOSEPH E. MORSH, B.A. (Brit. Col.), Ph.D. (Johns Hopkins), Assistant Professor.
FREDERICK THOMAS TYLER, B.Sc., M.A., B.Ed. (Alberta), Assistant Professor of Education and Psychology.

Department of Physics

- GORDON MERRITT SHRUM, M.A., Ph.D. (Toronto), F.R.S.C., Professor and Head of the Department.
A. E. HENNINGS, M.A. (Lake Forest College, Ill.), Ph.D. (Chicago), Professor.
OSCAR E. ANDERSON, M.A. (Brit. Col.), Ph.D. (Calif.), Assistant Professor.
A. M. CROOKER, B.A. (McMaster), M.A., Ph.D. (Toronto), Assistant Professor.
HAROLD D. SMITH, M.A. (Brit. Col.), Ph.D. (Toronto), Assistant Professor.
KENNETH C. MANN, B.A. (Sask.), Ph.D. (Toronto), Assistant Professor.

Department of Poultry Husbandry

- E. A. LLOYD, B.S.A. (Sask.), M.S.A. (Washington State College), Professor and Head of the Department.
JACOB BIELY, M.S.A. (Brit. Col.), M.S. (Kansas State College), Instructor.

Department of Zoology

C. McLEAN FRASER, M.A. (Toronto), Ph.D. (Iowa), F.R.S.C., Professor and Head of the Department.
G. J. SPENCER, B.S.A. (Toronto), M.S. (Illinois), Associate Professor.
MRS. GERTRUDE M. WATNEY, M.A. (Brit. Col.), Ph.D. (California), Assistant Professor.

Department of University Extension

GORDON MERRITT SHRUM, M.A. Ph.D. (Toronto), F.R.S.C., Director.
MISS DOROTHY SOMERSET, A.B. (Radcliffe), Assistant in Dramatics.
LEONARD CHATWIN, Assistant for Radio and Visual Instruction.

University Health Service

DR. STEWART MURRAY, Medical Health Officer, Metropolitan Health Committee—University Health Officer.
J. S. KITCHING, B.A., M.D., D.P.H. (Toronto), Assistant Senior Medical Health Officer of the Metropolitan Health Department of Vancouver and Director of the University Health Service.
GEORGE T. CUNNINGHAM, Esq., University representative on the Metropolitan Health Committee.
MISS MURIEL UPSHALL, R.N., B.A.Sc. (Brit. Col.), Public Health Nurse.

Physical Education

MISS GERTRUDE E. MOORE, Instructor in Physical Education for Women.
MAURICE VAN VLIET, Instructor in Physical Education for Men.

Assistants

	<i>Department</i>
AISH, MISS DEBORAH, M.A. (Brit. Col.), D.Lett. (Univ. of Paris)	Modern Languages
apROBERTS, ROBERT P.	English
BARSS, WALTER M., M.A. (Brit. Col.)	Physics
BELL, ROBERT E., B.A. (Brit. Col.)	Physics
BISHOP, ROGER, B.A. (Brit. Col.)	English
BREEZE, JOHN E., B.A.Sc. (Brit. Col.)	Mathematics
BREWER, CHARLES P., B.A. (Brit. Col.)	Chemistry
BUTLER, W. ROYCE	English
CAMERON, H. DONALD, B.A. (Brit. Col.)	Mathematics
COOK, FRANCIS, M.A. (Brit. Col.)	Chemistry
CORBOULD, MISS IRIS, M.A. (Brit. Col.)	Chemistry
COVINGTON, ARTHUR E., B.A. (Brit. Col.)	Physics
CURTIS, L. COLIN, B.A. (Brit. Col.)	Botany
DALE, MISS URSULA, B.A. (Brit. Col.)	Zoology
DANGELZER, MISS JOAN, B.A. (Brit. Col.), D.Lett. (Univ. of Paris)	Modern Languages
DAVENPORT, CHARLES H., M.A.Sc. (Brit. Col.)	Chemistry
DAVIDSON, JOHN F., B.A. (Brit. Col.)	Botany
DAVIS, EDWIN P., M.A. (Brit. Col.)	Geology and Geography
DAYTON, WILLIAM A., M.A.Sc. (Brit. Col.)	Mining
DESHAW, BERNARD F., B.A.Sc. (Brit. Col.)	Mechanical and Electrical Engineering
DILL, MISS CHARLOTTE, M.A. (Brit. Col.)	Botany
DOUGHTY, JOHN H., B.Com. (Brit. Col.)	Commerce
EASTHAM, ARTHUR, M.A. (Brit. Col.)	Chemistry
ELFSTROM, ROY H., M.A.Sc. (Brit. Col.)	Mining and Metallurgy
FARLEY, MISS HELEN, M.S.A. (Brit. Col.)	Botany
FENNELL, EDWIN J., B.S.A. (Brit. Col.)	Agronomy
FISHER, HERBERT E., B.A. (Brit. Col.)	Poultry Husbandry
FITCH, FRED T., B.A. (Brit. Col.)	Chemistry
FREE, NORMAN S., M.A. (Brit. Col.)	Mathematics; Physics
FULTON, CLARENCE O., B.A. (Brit. Col.)	Bacteriology and Preventive Medicine
GALPIN, RICHARD R., B.A. (Brit. Col.)	Bacteriology and Preventive Medicine
GRIFFITH, BRAHAM, M.A. (Brit. Col.), M.F. (Harvard)	Botany
GWYN, MISS AGNES, B.A. (Brit. Col.)	Zoology
HATCHER, GILBERT T., B.S.A. (Brit. Col.)	Commerce
HUGHES, MISS NORAH, M.A. (Brit. Col.)	Botany
IDYLL, CLARENCE P., B.A. (Brit. Col.)	Zoology
KADZIELAWA, ARTHUR, M.S.A. (Brit. Col.)	Dairying
KERSEY, LORNE R., B.A.Sc. (Brit. Col.)	Civil Engineering
LEGALLAIS, DONALD R., B.S.A. (Brit. Col.)	Botany
LESLIE, JOHN D.	Mathematics
LIPS, ALAIR, B.A. (Brit. Col.)	Chemistry
MANDERS, DAVID, B.A. (Brit. Col.)	Physics
MOODIE, C. DAWSON, B.S.A. (Brit. Col.)	Botany

McCONNELL, MRS. MABEL, B.A. (Alberta)	Philosophy and Psychology; Education
McKENZIE, ROBERT T., B.A. (Brit. Col.)	History
McTAGGART-COWAN, MISS JOAN, B.S.A. (Brit. Col.)	Horticulture
NEWTON, THEODORE D., B.A. (Brit. Col.)	Mathematics; Physics
PEPPER, THOMAS P., B.A. (Brit. Col.)	Physics
PERKINS, MAURICE, B.A. (Brit. Col.)	Commerce
RETALLACK, JAMES G., B.A. (Brit. Col.)	Physics
ROGERS, E. deLANCEY, B.A. (Brit. Col.)	Mathematics; Physics
SHIPTON, C. BERNARD, M.A. (Brit. Col.)	Chemistry
STANFORTH, ALAN B., B.A.Sc. (Brit. Col.)	Mechanical and Electrical Engineering
STEVES, HAROLD L., B.S.A. (Brit. Col.)	Animal Husbandry
TODD, MISS MARJORIE, B.A. (Brit. Col.)	Bacteriology and Preventive Medicine
TOMKINSON, WILLIAM, B.A. (Brit. Col.)	Botany
WALDEN, FRANKLIN, B.Com. (Brit. Col.)	Commerce
WEST, KENNETH A., M.A. (Brit. Col.)	Chemistry
WHITE, WILLIAM H., M.A.Sc. (Brit. Col.)	Geology and Geography
WIGHTON, JAMES J., B.A.Sc. (Brit. Col.)	Physics; Mathematics; Civil Engineering
WIRICK, ARTHUR J., B.A. (Brit. Col.)	History
WRIGHT, JOHN, B.A. (Brit. Col.)	Mathematics
YATABE, EIJI, M.A.Sc. (Brit. Col.)	Chemistry
ZOTOV, GENNADY, B.A. (Brit. Col.)	Physics

THE UNIVERSITY OF BRITISH COLUMBIA

HISTORICAL SKETCH

The creation of a University in British Columbia was first advocated by Superintendent Jessop in 1877, but it was not until 1890 that the Provincial Legislature passed an Act establishing a body politic and corporate named "The University of British Columbia." In 1891 this Act was amended to require that a meeting of the Senate be held within one month after the election of the Senators by Convocation. The Senators were elected, but a quorum did not assemble on the date fixed by the Chancellor, Dr. I. W. Powell, of Victoria. Thus the first attempt to establish a University in British Columbia failed.

However, some of the work normally done in a University was begun in 1894, when an Act was passed which permitted the affiliation of high schools in the Province with recognized Canadian Universities. In 1899 Vancouver High School was affiliated with McGill University in order to provide First Year work in Arts, and took the name of Vancouver College. First Year work in Arts was offered by Victoria High School when it became Victoria College by affiliation with McGill University in 1902. In the same year Vancouver College undertook the Second Year in Arts.

In 1906 an Act was passed incorporating the Royal Institution for the Advancement of Learning of British Columbia, which, in the same year, established at Vancouver the McGill University College of British Columbia. The scope of the work undertaken by this college was gradually increased until at the time it was taken over by the University of British Columbia it was giving three years in Arts and Science, and two years in Applied Science. When the University of British Columbia opened in the autumn of 1915, both the McGill University College of Vancouver and Victoria College, which since 1907 had been a part of it, ceased to exist.

Definite steps to establish the University were taken by Dr. H. E. Young, Minister of Education, in 1907, when he introduced a "University Endowment Act." This Act was followed in 1908 by an Act establishing and incorporating the University of British Columbia and repealing the old Act of 1890-1. This Act, with its subsequent amendments, determines the present constitution of the University.

As authorized by an Act passed by the Provincial Legislature in 1910, the Lieutenant-Governor in Council appointed a Site Commission to decide upon a site for the proposed University. The Commission held its first meeting on May 25th, 1910, in Victoria,

and after a thorough examination of the Province recommended the vicinity of Vancouver. In the autumn the Executive Council decided to place the University at Point Grey—the site which the Commission had named as its first choice. In 1911 the Legislature passed an Act authorizing the Lieutenant-Governor in Council to grant this site to the University. The grant was increased in 1915, so that it now consists of 548 acres at the extremity of Point Grey. The waters of the Gulf of Georgia form more than half the boundary of the University Campus. A tract of some 3,000 acres of Government land immediately adjoining the site, and lying between it and the City of Vancouver, has been set aside by the Government in order that University revenue may be provided by its sale or lease.

In February, 1912, the Hon. H. E. Young, Minister of Education, called for competitive plans which should include plans in detail for four buildings to be erected immediately, and a block plan showing all the proposed buildings on the Campus. Messrs. Sharp and Thompson, of Vancouver, B. C., were the successful competitors, and were appointed University Architects.

The first Convocation, held on August 21st, 1912, chose Mr. F. L. Carter-Cotton as first Chancellor of the University. In March, 1913, the Lieutenant-Governor in Council appointed as President of the University F. F. Wesbrook, M.A., M.D., C.M., LL.D. On April 4th, 1918, Dr. R. E. McKechnie was elected Chancellor. Dr. McKechnie has been re-elected continuously since that date and entered on his eighth term in May, 1939. On the death of President Wesbrook, October 20th, 1918, L. S. Klinck, Dean of the Faculty of Agriculture, was appointed acting President, and on June 1st, 1919, President.

From its opening in 1915 till the Summer of 1925, the University carried on its work in temporary quarters on part of the site of the General Hospital in Fairview.

Construction work was commenced on the Science Building at the permanent site in Point Grey in 1914, but was interrupted because of war conditions. Work on this building was resumed in 1923, and in the Autumn of the same year the contract was let for the Library. These two buildings, which are of stone and are fireproof, conform closely to the original plans as prepared by the architects in 1914. The initial units of these structures, as well as nine other buildings which are of a less permanent character, were completed in 1925, and at the beginning of Session 1925-26 the University commenced work in its new quarters.

The Inauguration of the new buildings was held on October 15th and 16th, 1925, on which occasion honorary degrees were granted by the University for the first time.

THE CONSTITUTION OF THE UNIVERSITY

The Constitution of the University is governed by the British Columbia University Act, B.C.R.S. 1924, c. 265, and Amending Acts, which provide

That the University shall consist of a Chancellor, Convocation, Board of Governors, Senate, Faculty Council, and the Faculties; that the first Convocation shall consist of all graduates of any university in His Majesty's dominions resident in the Province two years prior to the date fixed for the first meeting of Convocation, together with twenty-five members selected by the Lieutenant-Governor in Council. After the first Convocation it shall consist of the Chancellor, Senate, members of the first Convocation, and all graduates of the University; that the Chancellor shall be elected by Convocation; that the Board of Governors shall consist of the Chancellor, President, and nine persons—three elected by the Senate and six appointed by the Lieutenant-Governor in Council; that the Senate shall consist of: (a) The Chancellor, and the President of the University, who shall be chairman thereof; (b) the deans and two professors of each of the Faculties elected by members of the Faculty; (c) three members to be appointed by the Lieutenant-Governor in Council; (d) the principals of the Normal Schools; (e) one member elected by the high-school principals and assistants who are actually engaged in teaching; (f) one member to be elected by the governing body of every affiliated college or school in this Province; (g) fifteen members to be elected by Convocation from the members thereof; (h) one member elected by the British Columbia Teachers' Federation.

It is further provided that the University shall be non-sectarian.

The University Act gives the University full powers to grant such degrees in the several Faculties and different branches of knowledge as the Senate may from time to time determine. It reserves for the University the sole right in this Province to confer degrees, except in Theology, and it expressly enacts that "No other university having corporate powers capable of being exercised within the Province shall be known by the same name, nor shall any such university have power to grant degrees."

LOCATION AND BUILDINGS

Location

The University is situated on the promontory which forms the western extremity of the Point Grey Peninsula. On three sides it is bounded by the Gulf of Georgia. The site comprises an area of 548 acres, of which approximately one-half is campus. In all directions appear snow-capped mountains, strikingly rugged and impressive.

Buildings

The buildings, planned to meet the requirements of fifteen hundred students, are of two classes, permanent and semi-permanent. The former were designed by the University architects, Messrs. Sharp and Thompson, the latter by architects of the Department of Public Works of the Provincial Government. The permanent buildings have been erected in the location originally assigned for them; the others in the quadrangle designated as "unassigned" in the original plan. By utilizing the "unassigned" area for the semi-permanent buildings, all the locations intended for future expansion have been left available.

The entire mechanical equipment of these buildings was designed after a close study had been made not only of present requirements, but of the ultimate development of the institution. This consideration accounts for the fact that only a part of the present equipment is permanent. After a careful survey of the whole system, a forced hot water system was found to present advantages that made its adoption advisable. Direct radiation with a system of warmed air supply and extraction for ventilation is used to take care of the heat losses in the buildings. A separate system of ventilation is installed for all sanitary conveniences, and a specially constructed system for fume closets. The various services throughout these buildings, such as hot and cold water, distilled water, gas and steam for laboratory purposes, compressed air, etc., with the necessary apparatus, are all of a modern type. An attempt has been made to reduce vibration and noise to a minimum by installing all moving apparatus on floating slabs, with a further insulation of cork.

Library

The University Library contains 118,000 volumes and about 30,000 pamphlets. It includes representative works in all the courses offered by the University, and a growing collection of books in other subjects.

It is one of three Canadian Depositories of the Library of Congress Catalogue, a collection of more than 1,500,000 printed cards, valued at \$65,000.00. The Catalogue is housed in the main lobby of the Library building. Alphabetical classification, proceeding since the gift was received three years ago, is completed, and the 40,000 new cards issued each year, are being interfiled as received.

The Library also possesses a College Art Teaching Equipment Set, organized and presented by the Carnegie Corporation of New York. This consists of about 185 specially selected works covering the fine and applied arts, and of more than 2,000 reproductions, photographed or colored, illustrating these.

Another notable gift to the University, made by the Carnegie Corporation of New York, is the College Music Set. This consists of almost 1,000 records representing musical development in all its forms, with reproducing instruments specially designed for a large auditorium, and a collection of books on musical theory and history, together with a large number of orchestral scores. The Set is regularly used for student recitals, and to illustrate lectures on the appreciation of music.

The Library receives regularly about 680 magazines and periodical publications.

The book collection is classified throughout on the Congressional system.

Books to which the teaching staff have specially referred their students are placed in a "Reserved" class. These are shelved, apart from the main collection, and are loaned only for use in the building, and for a limited period.

Unbound periodicals are not loaned. Bound periodicals, and books that are costly, rare, or unsuitable for general circulation, are loaned only under special conditions.

While the Library is primarily for the staff and students of the University, its resources are available to those of the general public engaged in research or special study, and who make personal application to the Librarian for the privilege of its use. Such persons are known as "extra-mural Readers". By order of the Board of Governors a fee of \$1.00 per calendar year is charged such readers. In addition, they pay necessary mailing costs, a deposit being required from those unable to call personally for books loaned.

The Library also administers the book collection of the University Extension Department. This consists of about 1,000 volumes, and will be increased as the Department's work develops.

These books are loanable only to students enrolled in the Extension Department's Study Groups or classes.

The University is deeply indebted to all who have made gifts to the Library. These have been both valuable and numerous. Their number prevents detailed acknowledgment, but recognition should be made of a number of sets of transactions, and complete or partial sets of scientific periodicals, given by societies and friends of the University. The most interesting and valuable of these gifts are listed in the annual report of the Library to the Senate.

Gymnasium

This building was completed in 1929 and presented to the University by the Alma Mater Society. It is situated adjacent to the tennis courts and conveniently close to the playing fields. The style of architecture and exterior finish harmonizes well with that of the other buildings on the campus. The playing floor has an area of 6,000 square feet, and is surrounded on three sides by tiers of benches which will accommodate 1,400 persons. In the space behind these seats are located the dressing rooms, drying rooms, locker rooms and shower baths. Approximately one-third of this space has been set aside for the exclusive use of the women students. The offices of the instructors in physical education are located in the gymnasium. In the building are included also a properly equipped training and first-aid room, an equipment room and a kitchen. Facilities for general gymnasium and indoor athletic work have been provided.

Stadium and Playing Fields

In accordance with the original landscape plan prepared by Mawson in 1913, the main playing field area, consisting of about 16 acres, is situated east of the East Mall and north of the University Boulevard. Development work was started early in January, 1931, as an aid to the acute unemployment situation, and was made possible by funds provided chiefly by subscriptions from the Faculty, students, and friends of the University. Much of the labour was obtained through the courtesy of the Relief Department of the City of Vancouver. Twenty thousand cubic yards of soil and gravel were used to bring the track and field to grade. The total cost to date has been approximately \$20,000.

In addition to the main playing field of the stadium, there are three other full-size fields and a number of smaller areas set aside for outdoor games.

The first section of the grandstand for the stadium was erected in the summer of 1937 on the west side of the main playing field. It is a covered, reinforced concrete structure, 126 feet long and provides seating accommodation for 1,600 spectators. On either side are two wooden bleacher sections of 500 seats each. The plan provides for the ultimate continuance of the main section around the field and therefore the present bleachers are constructed in movable sections. Underneath the present main stand there are locker rooms, dressing rooms, showers, ticket booths and specially constructed drying rooms. Space is also provided for two squash racket courts, which will be completed as soon as funds are available. Funds for the construction of the grandstand were provided through a \$40,000 bond issue by the Alma Mater Society. Each student contributes three dollars annually towards the liquidation of these bonds. The Provincial Government has undertaken to assume the annual charges for interest on the bonds.

Forest Products Laboratories

The Forest Products Laboratories of Canada, Vancouver Laboratory, which is maintained by the Forest Service of the Department of Mines and Resources, Canada, occupies three buildings provided and kept up through a co-operative agreement between the University and the Dominion Government.

Plan of Campus

The plan at the back of the Calendar shows the buildings which have been erected and indicates the nature of their construction. It also shows their relation to the other groups of buildings which are to be erected in the future.

ENDOWMENTS AND DONATIONS

It has become a tradition for each Graduating Class to make a gift to the University. That of the Class of 1938 took the form of a Motion Picture Machine.

A list of the other most important gifts received during last year is given below under the various departments or in the Annual Report of the Library.

Department of Animal Husbandry

Gift from Safeway Stores Ltd.—One new platform scale of 10,000 lbs. capacity, which has been installed at the Beef Cattle Barn for use in experimental studies.

Department of Botany

(For Herbarium and Botanical Gardens)

SEEDS

CANADA	Division of Botany, Central Experimental Farm, Ottawa. Montreal Botanical Garden, Montreal. University of Toronto. Mr. J. W. Eastham, Cranbrook, Keremeos. Professor G. Spencer, Lac du Bois. Mr. J. F. Davidson, Kamloops.
UNITED STATES	Brooklyn Botanic Garden, Brooklyn. Morton Arboretum, Lisle. The Lexington Botanic Garden, Lexington. United States Department of Agriculture, Washington.
GREAT BRITAIN	Mr. D. H. Snowberger, Payette, Idaho Botanic Gardens, Glasnevin, Dublin. Royal Botanic Gardens, Kew, England. Royal Horticultural Gardens, Surrey, England.
FRANCE	Botanical Garden, Nantes. Botanical Gardens, Parc de la tete-d'Or, Lyon.
BELGIUM	Jardin Botanique de l'Universite de Liege, Liege.
HOLLAND	Arboretum Landbouwhoogeschool, Wageningen. Jardin Botanique de l'Universite d'Amsterdam. Technical High School, Delft.
SWEDEN	Botanical Garden, Gothenburg.
NORWAY	Botanical Garden, Lund.
POLAND	Botanical Garden, King Frederick University, Oslo.
GERMANY	The Kornik Gardens and Arboretum, Kornik. Botanical Garden, Berlin-Dahlem. Botanical Gardens, Dresden. Botanical Gardens, Koln am Rhein. Botanical Gardens, University, Greifswald.
SWITZERLAND	Botanical Garden, Basel.
ITALY	Botanical Garden, University of Rome, Milano.
CZECHOSLOVAKIA	Botanical Garden, Charles University, Prague.
RIGA	University Botanic Garden, Latvia.
JUGOSLAVIA	Botanical Garden, University, Zegreb.
HUNGARY	Botanical Garden, Budapest.
ROUMANIA	University Botanical Garden, Cernauti.
LITHUANIA	Botanical Gardens, Kaunas.
JAPAN	Botanic Garden, Hakkaido Imperial University, Sapporo.

HERBARIUM AND GARDEN SPECIMENS

Mr. F. Fodor, Trail, B. C.
Mr. H. Muskett, Vancouver, B. C.
Mrs. K. C. Way, Kamloops, B. C.
Botanic Garden and Arboretum, Huntington College, Indiana.
University of Washington Arboretum, Seattle.
Mrs. F. Whaley, Vancouver, B. C., "Natural History of Plants," Kerner, Vols. I and II. (Donation to Herbarium Library.)

BOTANY

Consolidated Mining and Smelting Company of Canada Ltd., Trail, B. C.—
Certain equipment supplied in connection with research on the Smelter Smoke problem.

Department of Forestry

Under the terms of the agreement with the Caterpillar Tractor Company of Peoria, Ill., through the co-operation of Mr. J. G. Morgan and Mr. E. B. Finning of the Finning Tractor and Equipment Company, Ltd., Vancouver, the former R. D. 6 Diesel Tractor was replaced in November by a new R.D. 4 Diesel Tractor of latest design. This is for student demonstration and for use in the University Forest.

Under similar terms of agreement with the Willamette-Hyster Company of Portland, Oregon, the single-drum winch attachment of the former tractor was replaced by a new single-drum winch to fit the new tractor.

T. L. Ramsdall, Manager, Bloedel, Stewart & Welch, Ltd., Vancouver—
Exhibit of various grades of edge-grain shingles.

The Department is again indebted to the Dominion and Provincial Governments under whose auspices the Youths Forestry Training Plan and

Forest Development Project, inaugurated in previous years, were continued. Forty men were employed for a period of seven weeks in the summer project and in the winter project eighty men are now being employed in improvement and reforestation work in the University Forest and in the Forest Nursery.

Department of Geology and Geography

During the past year the University has received many gifts of minerals, ores, fossils, other specimens and publications. Thanks are due particularly to the following Institutions, companies and individuals.

California Institute of Technology.
University of Arizona.
New Mexico School of Mines.
University of Colorado.
United States National Parks Service (Boulder Dam Station).
Utah Engineering Experimental Research Station.
University of Washington.
University of Nevada.
Research Council of Australia.
Dr. E. Newton Drier, Vancouver—Collections of fossils from Switzerland, New Zealand and Australia, and a sample of Diatomite from New Zealand.
George Goodrich, Little Prairie, Peace River, B. C.—5 skulls of mammals.
Dr. Wm. C. Atkinson, Vancouver—A mounted moose head.
Mrs. H. E. Young, Victoria—A set of geological pamphlets and reprints.
J. B. Alexander, Forest Products Laboratory, Vancouver—A cut agate, large barnacles and photographs for Lantern slides.
Dr. R. E. McKechnie, Chancellor, Vancouver—Fossils from Nanaimo and Western China.
R. Thompson, Science '41—A collection of fossils from Moose Jaw, Saskatchewan.
A. R. Smith—A collection of fossils from the Bridge River area.
Black Butte Mine, Oregon—Courtesy D. J. Mill.
New Idria Mine, California—Courtesy C. Hyde Lewis.
Nevada Massachusetts Co. Inc.—Courtesy Otto F. Heiser.
Oreana Mine—Courtesy Otto F. Heiser.
Golconda—Courtesy George Crerar.
Carbonate Queen Mine—Courtesy Andrew Vigan and Cliff Welch.
Strattons Independence Mine—Courtesy C. K. Woods.
Ajax Mine—Courtesy Charles Charlton and M. H. Grice.
Cresson Mine—Courtesy Alfred H. Bebee and Howard Stone.
Golden Cycle Mining and Milling Co.—Courtesy Joseph F. Underwood and Max Bowen.
Climax Molybdenum—Courtesy William J. Coulter, W. E. Romig, R. V. King.
Anaconda Copper Mining Company—Courtesy M. H. Guidal and E. P. Shea.
Pioneer Mine—Courtesy H. T. James.
Cariboo Gold Quartz Mines—Courtesy R. R. Rose.
Kelowna Exploration Co.—Courtesy W. C. Douglass.
Britannia Mine—Courtesy V. Zanadvoroff.
Privateer Mine—Courtesy R. McConnell.
Island Mountain Mine—Courtesy E. W. Johnson.
Zeballos Ores—Courtesy W. H. Emens.
Toronto University—Courtesy Ellis Thomson.
Molybdenite Samples—Courtesy P. G. Margetts.
Cobalt Samples—Courtesy R. R. Taylor.
Stibnite Samples—Courtesy W. O. Williams.
Mercury Samples—Courtesy K. Fahrni.
Premier Mine—Courtesy Bert Smith and W. H. White.
Kootenay Bell Mine—Courtesy F. M. Black.
Geophysical Laboratory, Washington, D. C.—Courtesy George Tunell.

Department of Mechanical and Electrical Engineering

Mrs. M. B. Carlin, Chase Water Works, Chase, B. C.—A single phase, 125 cycle alternating current generator, patented in 1884, and illustrating the early design of electric generators.

Department of Modern Languages

French Government—Books to the value of 10,000 francs.

M. Jean Giraudoux—Set of his recent plays.

Mrs. Arthur F. Nation, Vancouver—A map of French Discoveries in North America by the French Admiralty (1935).

Department of Physics

Victor X-Ray Corporation of Canada Limited—1 Used New Universal X-Ray Unit 220-V 60 cy. including auto transformer, Coolidge regulator, Coolidge transformer 110-V 60-cy.; 1 Used K.K. Tube Stand; 1 Duplex Cord Reel; 1 Single Cord Reel; 2 Reel Adapters; 1 Ammeter 9-inch; 1 Milliammeter 7-inch; 1 Universal X-Ray Tube; 1 Meter Bracket for 2 meters.
Mayor J. Lyle Telford—1 High Frequency Medical Unit.

Department of Zoology

Dr. C. H. Bastin, Vancouver—Wolf's head from Prince Rupert.
Mr. E. R. Buckell, Vernon—Mink and fisher skulls from Revelstoke area.
Mr. M. G. Campbell, Kamloops—Living *Grylloblatta* ("Ice bugs") from Kamloops.
Dr. I. MacTaggart Cowan—Provincial Museum, Victoria. Ectoparasites of birds.
Mr. J. F. S. Fletcher, Dimock, Penn.—Ectoparasites of birds and mammals from Takla Lake area, B. C.
Mr. W. R. Hawke, Chilliwack—Six black fox skulls.
Mr. H. Leech, Vernon—A large series of named beetles and a valuable series of separates and publications in Entomology.
Mr. H. Lincoln, Vancouver—Tree boa from bananas.
Mr. B. E. Morgan, Prince Rupert—Per Dr. C. H. Bastin. A fine hair seal.
Mr. E. Schwantje, Vancouver—A full series of recently captured Schaeffers moles.
Mr. A. A. Scott, Vancouver—Ectoparasites of birds.
Mr. Robert Smith, Vancouver—A fine collection of spectacular tropical insects from Mr. L. H. Phillips, Bugo, Mindanao, Philippine Islands.
Mr. F. C. Whitehouse, Vancouver—Further contributions to the Odonata (Dragon Flies) of B. C. The collection made for the Department by Mr. Whitehouse now lacks only 7 species of the total number recorded from the Province.
Mr. M. J. Wilson, Provincial Game Board, Penticton—Head of Mountain Sheep, Penticton area, and separate horns from Ashnola range.
The Department is indebted to Mr. Donald Murray, University of Minnesota, for gratuitously naming and labelling to species, the Departmental collection of Sphecid wasps.
The Department is especially indebted to Mr. Max Ruhman, Provincial Entomological Service, Vernon, for a noteworthy gift to the University, of the greater portion of Seitz' *Macrolepidoptera*, a monograph of all the butterflies and the larger moths of the world. This work when completed, will consist of 750 serial numbers or 17 volumes with more than 9000 pages in quarto of descriptive text, about 1500 plates with more than 55,000 chromolithographed figures of unequalled life-like beauty, besides a supplement to the palaearctic section.
In addition, Mr. Ruhman gave the University a large number of volumes and separates in Entomology, some being very rare and valuable publications. The total monetary value of the gift is in excess of \$1600.

Department of University Extension

BOOKS.

Gift of the Royal Hungarian Consulate, Winnipeg, Man.—"Hungarian Folk Costumes."

Gift of the Players' Club of the University of British Columbia—400 plays.

PHOTOGRAPHS.

Gift of the Canadian Pacific Railway, Vancouver, B. C.—40 photographs.

SLIDES.

Loaned by the German State Railways:

1. Treasures of German Galleries.....	110 slides
2. The Rhine from Cleve to Mainz.....	65 "
3. Northern Bavaria.....	61 "
4. Wintersport.....	50 "
5. German Costumes.....	50 "
6. The Black Forest.....	76 "
7. Berlin and Potsdam.....	100 "

Loaned by the Austrian Government, through the Consul General of Austria for Canada at Montreal, Mr. Thos. Geurin,

One set..... 72 "

Loaned by the Department of Mines and Resources, Ottawa, through Mr. Robert J. C. Stead, Superintendent of Publicity and Information,

One set..... 58 "

PHOTOGRAPHS.

Loaned by the Swiss Government through Mr. E. Baeschlin, Swiss Consul at Vancouver 50 Photographs

RADIO EQUIPMENT.

Loaned by Radio Station CJOR for use in the University Radio Studio—1 three-channel amplifier, 2 microphones, 1 monitoring set.

PIANO.

Loaned by the J. W. Kelly Piano Co., for use in the University Radio Studio—1 piano.

Gifts of old postage stamps for the University Collection of "The Postage Stamps of Canada":

Dr. Robert E. McKechnie—Stamps of Prince Edward Island.

Mr. E. Durlin Fletcher—Stamps of British Columbia.

GENERAL INFORMATION

The Session

The academic year begins on the First of September and ends on the last day of August. The Winter Session is divided into two terms—the first, September to December; the second, January to May. The Summer Session consists of seven weeks' instruction in July and August, for which preparatory reading is required except in certain cases. For "Admission to the University," see Page 33, and for "Registration and Attendance," see Page 35.

Courses of Study

For the Session of 1939-40 the University offers instruction in each of the three Faculties, Arts and Science, Applied Science (including Nursing), and Agriculture, leading to the degrees of Bachelor of Arts, Bachelor of Commerce, Bachelor of Applied Science, Bachelor of Science in Forestry and Bachelor of Science in Agriculture. A course is given in the Faculty of Arts and Science leading to a Diploma of Social Service, and a Teacher Training Course is given for graduates. Advanced courses of instruction and facilities for research leading to a Master's degree are offered in each Faculty. Admission to these advanced courses, or to the privileges of research, does not in itself imply admission to candidacy for a higher degree.

Academic Dress

The undergraduate's gown is black in colour and of the ordinary stuff material, of ankle length, and with long sleeves and the yoke edged with khaki cord. The graduate's gown is the same, without cord. The Bachelor's hood is of the Cambridge pattern, black bordered with the distinctive colour of the particular Faculty, the Bachelor of Commerce hood being differentiated by the addition of a white cord; the Master's hood is the same, lined with the distinctive colour. The colours are, for Arts and Science, the University blue; for Applied Science, red; for Agriculture, maize.

Department of University Extension

Under a grant from the British Dominions and Colonies Fund of the Carnegie Corporation of New York, the University of British Columbia organized early in 1936 a Department of University Extension. This department carries on most of the usual University Extension activities, including a programme for Adult Education.

The Grant from the Carnegie Corporation has enabled the University to collect much valuable information upon the special requirements of Adult Education in British Columbia. Various experimental projects have been tried, and, based on the experience gained, have been rejected, modified, or accepted as the basis for a permanent programme. It is hoped to evolve a practicable policy—one adapted to the local conditions, sound in educational concept, comprehensive in scope, yet not unduly exacting in financial cost. It is felt that the University, through its activities in the field of Adult Education, can contribute enduring benefits to the educational and social welfare of the Province.

The present activities of the department include the following:

(a) *Extension Lectures.*

Through the department a limited number of extension lectures are offered at various centres throughout the Province.

(b) *Study-Groups.*

Study-group courses on subjects related to the general work of the University are given each year. These include:

- (i) Economics and Public Affairs.
- (ii) History of the Theatre.
- (iii) British Columbia History.
- (iv) Modern Literature.
- (v) Practical Psychology.

(c) *Short Courses.*

Short courses carrying no academic credit are offered by the department during both the Winter and Summer Sessions.

(d) *Visual Instruction.*

- (i) Lantern and Film Slide Service. Approximately 100 sets of lantern and film slides, many with lectures, are available for loan to schools, churches and organizations carrying on educational work. A catalogue of these slides may be obtained upon application.
- (ii) Moving Picture Service. Full particulars regarding films and machines available for rental will be supplied upon application.

(e) *Radio.*

From its studio on the campus, the department presents each year a number of educational broadcasts.

(f) *Library.*

Through the University Extension Library, the department offers assistance to those who wish to do systematic reading on any subject.

(g) *Art and Music.*

The facilities supplied by the Carnegie Art Teaching Set and the Carnegie Music Set enable the department to offer courses in this field.

(h) *Dramatics.*

During the winter short courses in dramatics are offered at various centres in the Province. Each summer a longer and more comprehensive course is given at the University. A play loan library has been established.

(i) *Public Relations.*

Frequently items of interest to the public are prepared and released to the press. The department of University Extension offers its services to any individual, group or organization requiring information regarding the University.

Full particulars regarding any of the above services will be furnished upon application to the Director, Department of University Extension.

University Health Service

This service was begun in 1925 when the Lieutenant-Governor in Council, upon the recommendation of the Provincial Health Officer, appointed a Medical Health Officer for the University Area.

In the Fall of 1927, the Provincial Health Officer added to the University Health Service a Public Health Nurse, thus commencing the continuous operation of a full-time local Health Department on the Campus and University Endowment Area.

In November, 1936, the University Endowment Area became part of the Metropolitan Health Area under the direction of the Metropolitan Health Board, thus affording the University the extra services and facilities enjoyed by the larger organization, which provides through its Health Units a Public Health Service to the entire Greater Vancouver Area. The University Area is now Health Unit 3A of the Greater Vancouver Area.

The offices of the University Health Service are located in the Auditorium Building. The first aid furniture and supplies for this office were the generous gift of the Graduating Class of 1927.

Purposes of the University Health Service

The first purpose of the Health Service for Students is to supervise the physical and mental health of the student from the time of his admission to University until he graduates, so that as he takes his place in the outside world he will not be handicapped by physical defects or mental breakdown during the period in which he is adjusting himself to his career.

On admission to University each student is given a complete physical examination; also all students who have not had an examination by this University for more than four years. Before participation in athletics *all* women students are given an annual examination. Later the medical officer has a personal conference during the Fall term with all those who received examination. This conference is for the purpose of individualizing the previous examination and for the rechecking and "following-up" of any physical defects which were found at the time. Students are checked as to physical fitness for participation in strenuous athletics. Evidence, satisfactory to the medical officer, of successful immunization against smallpox is required.

Preventive vaccinations and inoculations are given by the Health Service. The Medical Officer is available at specified hours for consultations with students on health problems, and personal and emotional problems, worries, etc.

One of the most important tasks of the Health Service is the control of communicable disease. Much valuable time can be saved the student body by the prompt and immediate application of preventive measures in checking the spread of communicable disease.

Tuberculosis Control

Because Tuberculosis occupies first place as a cause of death of persons of college age, it is given special attention. The University Health Service gives, therefore, to each new student at the time of his entrance examination a tuberculin skin test and an X-ray of the chest of every student who shows a reaction to tuberculin. This project is of tremendous value, for when Tuberculosis is diagnosed and treatment instituted before physical breakdown occurs, the patient is saved from years of invalidism and perhaps death, and his fellow students can be protected from infection.

Rules Governing Communicable and Other Illnesses

Students *developing* any illness or suffering from any injury while on the Campus should apply for first aid to the University Health Service. This is particularly required if the student develops any illness of any communicable nature, including the

Common Cold. Provision is made also for the diagnosis of the infectious cases and their safe removal to suitable quarters.

Students *developing* any illness or suffering any injury while at home, boarding house, fraternity house, etc., are required to report the same to the University Health Service. The development of any infectious disease in a University student or *any person living in the same house*, must be reported by the student to the University Health Service without delay.

Students *exposed* to any communicable disease must immediately report to the University Health Service. Such persons may be permitted, by special order of the Medical Health Officer, to attend the University for a prescribed period, despite the exposure.

Such students shall report daily (or oftener, at the discretion of the Medical Health Officer) to the University Health Service for such prescribed period. Failure to so report, will result in immediate exclusion from the University.

Students absent on account of illness must present Medical Certificates. If the absence occurs during the session, the student must appear in person, with the certificate, at the University Health Service immediately on return to the University, and before attendance upon class work. The University Health Service will examine the person concerned and will immediately forward the certificate, with report thereon, to the Dean of the Faculty. *If the absence occurs during the examinations*, the medical certificate must be sent to the Dean of the Faculty within two days after the termination of the examination period. A medical certificate must show the nature and the period of the disability. Medical report forms may be obtained from the Health Service Office.

The Health Service is a preventive service and can not provide treatment for sick students.

Summer Session

In the summer of 1938 the students of the Summer Session received a modified Health Service. This is now part of the regular programme of the University Health Service. During the Summer Session the office is open during the mornings only.

Physical Education

Physical Education was organized at the University during the session 1935-36. A physical education programme contributes to the health of the student body by encouraging participation in all forms of athletic games, and by offering classes in physical training suited to the needs of the various groups of students.

The work for the present is under the general supervision of a committee appointed by the President of the University. There are divisions for both men and women.

The work is on a voluntary basis and carries no University credit. The activities are limited by the accommodation at the gymnasium, but include for men: badminton, basketball, boxing, cross-country running, fencing, golf, gymnastics, volleyball, wrestling, track and field, football and rugby. The women's activities include: archery, badminton, basketball, dancing, gymnastics, light apparatus and volleyball.

Series of lectures are offered in recreational leadership, healthful living and the principles of physical education. Instruction is given also in the theory and practice of teaching physical education in schools, playgrounds and recreational centres.

The geographical location of the University precludes the possibility of any extensive inter-collegiate athletic competition and consequently great emphasis is placed for both men and women upon intramural athletics.

University Employment Bureau

The objects of the Employment Bureau are to provide students with summer employment, to provide part-time work for students during the Winter Session, and to help students in obtaining positions after graduation. This service is for employers seeking help and for students desiring employment. Those who know of positions vacant are requested to notify the Bureau. Correspondence should be addressed to the Employment Bureau, Registrar's Office.

Dean of Women

During the session the Dean of Women may be consulted by parents and students on matters pertaining to living conditions, vocational guidance, and other questions that directly affect the social and intellectual life of the women students.

Board and Residence

A list of boarding-houses, which receive men or women students, but not both, may be obtained from the Registrar. Men and women students are not permitted to lodge in the same house, unless they are members of the same family, or receive special permission from the Senate. Women students under twenty-five years of age are permitted to occupy suites in apartment houses only when accompanied by some older person. Any such arrangement must be made in consultation with the Dean of Women. The Dean of Women also undertakes the inspection and approval of the boarding houses

listed for women. The cost of good board and lodging is from \$25 per month upwards; of a room alone, \$8 to \$12 per month. A grill is operated under the supervision of the University, and lunch, afternoon tea and light supper may be obtained there at very reasonable prices. Refreshments at social functions are also supplied.

General Conduct

The University authorities do not assume responsibilities which naturally rest with parents. This being so, it is the policy of the University to rely on the good sense and on the home training of students for the preservation of good moral standards.

ADMISSION TO THE UNIVERSITY

All enquiries relating to admission to the University should be addressed to the Registrar.

The accommodation for students in the University is limited. The University, therefore, reserves the right to limit the attendance.

For the Session 1939-40 the number of students in the Second Year of the course in Nursing and Health (including Combined Course students, and students entering upon the Third Year of the Double Course) will be limited to 20, and in the Teacher Training Course to 60.

1. Except under special circumstances, no student under the age of sixteen is admitted to the University. For admission to the course in Nursing a student must be seventeen years of age, and for admission to any course in Social Service, twenty-one years of age.

2. Candidates for admission to the courses in the First Year of the Faculty of Arts and Science or the Faculty of Agriculture and to the course in Nursing in Applied Science are required to pass the Junior Matriculation Examination of the Province of British Columbia or to submit certificates showing that they have passed an equivalent examination elsewhere. Students over 18 years of age with full "Normal Entrance" standing, who hold Normal School certificates, are admitted to the University as having full Junior Matriculation standing. Special regulations are prescribed for admission to courses in Applied Science, and are given under the heading of "Admission" in the Applied Science Section of the Calendar.

3. Students who have passed the Senior Matriculation Examination are admitted to the courses of the Second Year in the Faculty of Arts and Science. Students who have partial Senior

Matriculation standing, obtained in 1927 or subsequently, will be granted credit in the First Year in each subject in which they have made 50 per cent. or over, or in each paper in which they have made 50 per cent. or over, in so far as these papers correspond with those of the First Year.

4. A student who has a failure in a subject of the Junior Matriculation examination standing against him will not be admitted to the University.

5. The Junior and Senior Matriculation Examinations of the Province of British Columbia are conducted by the High School and University Matriculation Board of the Province. This Board consists of members appointed by the Department of Education and by the University. The requirements for Matriculation are stated in the publication, "Requirements for Matriculation," issued by the University. The courses of study for the various grades in the high schools are given in the "Programme of Studies for the High Schools," issued by the Department of Education.

6. Certificates or diplomas showing that a candidate has passed the Matriculation Examination of another University will be accepted in lieu of the Junior or Senior Matriculation Examinations if the Faculty concerned considers that the examination has covered the same subjects and required the same standards. If, however, the examinations cover some but not all of the necessary subjects, the candidate will be required to pass the Matriculation Examination in the subjects not covered.

7. *A candidate who wishes to enter by certificates other than a Matriculation certificate issued in British Columbia should submit to the Registrar the original certificates. If he wishes these returned to him, he must present also a copy of each certificate for record at the University. He should under no circumstances come to the University without having first obtained from the Registrar a statement of the value of the certificates he holds, as these may lack one or more essential subjects, or the work done in a subject may not be adequate, or, again, the percentage gained may not be sufficiently high. Moreover, it must be remembered that a certificate may admit to one Faculty and not to another. When an applicant's diploma or certificate does not show the marks obtained in the several subjects of the examination, he must arrange to have a statement of his marks sent to the Registrar by the Education Department or University issuing such diploma or certificate. The fee for examination of certificates is \$2.00. This fee must accompany the application.*

8. A student of another University applying for exemption from any subject or subjects which he has already studied is required to submit with his application a Calendar of the University in

which he has previously studied, together with a complete statement of the course he has followed and a certificate of the standing gained in the several subjects.* The Faculty concerned will determine the standing of such a student in this University. The fee for the examination of certificates is \$2.00. This fee must accompany the application.

REGISTRATION AND ATTENDANCE

Those who intend to register as students of the University are required to make application to the Registrar, on forms to be obtained from the Registrar's Office. This application should be made in person or by mail early in August, or as soon as the results of the Matriculation examinations are known, and must be accompanied by the Registration Fee of \$5.00. (See regulations in reference to "Admission to the University," Page 33.)

Registration for the Second Year of the Course in Nursing and Health (including the Combined Course and the Third Year of the Double Course) is limited to 20, and for the Teacher Training Course to 60.

Application for admission to Second Year Nursing or the Teacher Training Course must be made to the Registrar on or before August 15th. A selection of candidates will be made immediately thereafter on the basis of qualifications. Forms of application for admission to these courses may be obtained from the Registrar's Office.

The last days for Registration are: for First and Second Year students, Wednesday, September 13th; for other Undergraduate students of the regular Winter Session, Friday, September 15th; for Graduate students, and for students in Extra-Sessional Classes and Directed Reading Courses, Friday, October 13th.

1. There are four classes of students:—

- (a) Graduate students—Students who are pursuing courses of study in a Faculty in which they hold a degree, whether they are proceeding to a Master's degree or not. Students, however, who are proceeding to a Bachelor's degree in another course in the same Faculty in which they hold a degree, or in another Faculty, will register as undergraduates.
- (b) Full undergraduates—Students proceeding to a degree in any Faculty who have passed all the examinations precedent to the year in which they are registered.

*For the conditions under which exemption is granted in the Faculty of Arts and Science, see "Courses Leading to the Degree of B.A."

(c) Conditioned undergraduates—Students proceeding to a degree with defects in their standing which do not prevent their entering a higher year under the regulations governing “Examinations and Advancement” of the Faculty in which they are registered.

(d) Partial students—Students not belonging to one of the three preceding classes. (See 7, below.)

2. All students are required to register at the office of the Registrar on or before the last day for registration, to furnish the information necessary for the University records, to enroll for the particular classes which they wish to attend, and to sign the following declaration:

“I hereby accept and submit myself to the statutes, rules, regulations, and ordinances of The University of British Columbia, and of the Faculty or Faculties in which I am registered, and to any amendments thereto which may be made while I am a student of the University, and I promise to observe the same.”

In the information furnished for the University records, students are requested to state what church they propose to make their place of worship. This information is available for any of the city churches desiring it.

3. A late registration fee of \$2.00 will be charged all students who register after the above dates.

No registration after Monday, October 2nd (two weeks beyond the date when lectures begin) will be accepted without the special permission of the Faculty concerned, and a candidate so accepted for registration may be required to take fewer courses than the regular year's work.

4. Students registering for the first time must present the certificates which constitute their qualification for admission to the course of study for which they wish to register. The Registrar is empowered to register all duly qualified students. Doubtful cases will be dealt with by the Faculty concerned.

5. Students doing work in two academic years will register in the lower year and fill out their course cards in such a way as to make clear which courses are required to complete the lower year.

6. Students desiring to make a change in the course for which they have registered must apply to the Registrar on the proper form for a “change of course.” Except in special circumstances, no change will be allowed after the first week of the session. If the application is approved by the Faculty concerned, the Registrar will give the necessary notifications.

7. Partial students, who are not proceeding to a degree, are not normally required to pass an examination for admission, but before

registering they must produce a certificate showing that they have satisfied the Dean and the Heads of the Departments concerned that they are qualified to pursue with advantage the course of study which they propose to undertake.

8. Students are required to attend at least seven-eighths of the lectures in each course that they take. Admission to a lecture or laboratory and credit for attendance may be refused by the Instructor for lateness, misconduct, inattention or neglect of duty. Absence consequent on illness or domestic affliction may be excused only by the Dean of the Faculty concerned, and medical certificates or other evidence must be presented. *If the absence occurs during the session*, the student must appear in person, with the certificate, at the University Health Service immediately on return to the University, and before attendance upon class work. The University Health Service will examine the person concerned and will immediately forward the certificate, with report thereon, to the Dean of the Faculty. *If the absence occurs during the examinations*, the certificate must be sent to the Dean of the Faculty within two days after the termination of the examination period. A medical certificate must show the nature and the period of the disability. Medical report forms may be obtained from the Dean's office. In cases of deficient attendance students may (with the sanction of the Dean and the Head of the Department concerned) be excluded from the Christmas or the final examinations in a course; but, in the case of a final examination, unless the unexcused absences exceed one-fourth of the total number of lectures in a course, such student may be permitted to sit for supplemental examination. (See regulation in each Faculty in reference to "Examinations and Advancement.")

9. All candidates for a degree must make formal application for graduation at least *one* month previous to the Congregation at which they expect to obtain the degree. Special forms for this purpose may be obtained from the Registrar's office.

FEES

All cheques must be certified and made payable to "The University of British Columbia."

The Registration Fee is not returnable.

If fees are not paid when due an additional fee of \$2.00 will be charged.

Fees are not transferable from one session to another.

A request for a REFUND OF FEES must be made by the student to the BURSAR within FOUR WEEKS after the student has discontinued his work; and fees for which a refund has not been so requested WILL NOT BE RETURNED.

The Sessional Fees are as follows:—

FOR FULL AND CONDITIONED UNDERGRADUATES

IN ARTS AND SCIENCE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$ 75.00
Alma Mater Fee	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 15th	75.00
	\$173.00

IN SOCIAL SERVICE COURSE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$ 75.00
Alma Mater Fee	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 15th	75.00
	\$173.00

IN TEACHER TRAINING COURSE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$ 75.00
Alma Mater Fee	13.00
Caution Money	5.00
	93.00
<i>Second Term</i> —Payable on or before January 15th	75.00
	\$173.00

IN APPLIED SCIENCE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$100.00
Alma Mater Fee	13.00
Caution Money	5.00
	<hr/> 118.00
<i>Second Term</i> —Payable on or before January 15th	100.00
	<hr/> \$223.00

IN NURSING AND PUBLIC HEALTH—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$75.00
Alma Mater Fee	13.00
Caution Money	5.00
	<hr/> 93.00
<i>Second Term</i> —Payable on or before January 15th	75.00
	<hr/> \$173.00

NOTE:—Social Service Workers taking any of Courses 1-13, and these courses only, are relieved from paying the Alma Mater fee.

For Third and Fourth Year students in Nursing the Sessional fee is \$1.00, payable with an Alma Mater fee of \$8.00, on or before October 2nd.

Students admitted to a One-year Course for Graduate Nurses and proceeding to the Certificate on a basis of part-time attendance over two or more years, will pay \$9.00 per unit.

IN AGRICULTURE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$75.00
Alma Mater Fee	13.00
Caution Money	5.00
	<hr/> 93.00
<i>Second Term</i> —Payable on or before January 15th	75.00
	<hr/> \$173.00

OCCUPATIONAL COURSE—

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$30.00
Alma Mater Fee	13.00
Caution Money	5.00
	<hr/> 48.00
<i>Second Term</i> —Payable on or before January 15th	30.00
	<hr/> \$ 83.00

FOR PARTIAL STUDENTS

Fees per "Unit"	\$12.00
<i>Registration</i> —Payable before registration—	
For 6 units or less	2.00
For over 6 units	5.00
<i>First half</i> payable on or before October 2nd, along with—	
Alma Mater Fee	13.00
Caution Money	5.00
<i>Second half</i> payable on or before January 15th.	

FOR STUDENTS IN EXTRA SESSIONAL CLASSES AND
DIRECTED READING COURSES

<i>Registration</i> —Payable before registration	\$ 2.00
Fees per 3-Unit Course	36.00
<i>First Half Unit Fees</i> payable on or before October 2nd.	
<i>Second Half Unit Fees</i> payable on or before January 15th.	

FOR GRADUATES*

<i>Registration</i> —Payable before registration	\$ 5.00
<i>First Term</i> —Payable on or before October 2nd:	
Sessional Fee	\$62.50
Caution Money	5.00
	67.50
<i>Second Term</i> —Payable on or before January 15th	62.50
	\$135.00
Each Subsequent Session:	
Registration	\$ 5.00
Caution Money	5.00
	10.00

LATE REGISTRATION

See Page 36	\$ 2.00
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The Alma Mater Fee is a fee exacted from all students for the support of the Alma Mater Society. It was authorized by the Board of Governors at the request of the students themselves.

The Caution Money is a deposit from which deductions will be made to cover breakages, wastage, and use of special materials in laboratories, Library, etc. If the balance to the credit of a student

*For Registration fee for Graduates taking 6 units or less see "Registration fee for Partial Students."

falls below \$1.50, a further deposit of \$5.00 may be required. Caution Money will be refunded after the 30th day of April.

Immediately after the last day for the payment of fees, students whose fees have not been paid will have their registrations cancelled, and will be excluded from classes. Such students will not be permitted to register again during the term until they obtain the consent of the Dean, pay all fees, and present to the Registrar a statement from the Bursar certifying that fees have been paid.

Students registering after October 2nd shall pay their fees at the time of registration, failing which they become subject to the provisions of the preceding Regulation.

Students borrowing books from the University Library for Preparatory Reading courses will be required to make the usual deposit of two dollars (\$2.00) with the Librarian to cover mailing cost.

FOR SUMMER SESSION STUDENTS

Fees are payable on registration, otherwise an additional fee of \$2.00 will be exacted.

<i>Registration</i> —Payable before registration.....	\$ 2.00
Minimum Class Fee.....	25.00
Per "Unit"	12.00
Summer Session Association	2.00

SPECIAL FEES

Regular supplemental examination, per paper.....	\$ 5.00
Special examination (Applied Science and Agriculture), per paper	7.50
Re-reading, per paper.....	2.00
Graduation	15.00

Supplemental examination fees must be paid by August 15th when application for examination is made. Special examination fees and fees for re-reading are payable with application.

Graduation fees must be paid two weeks before Congregation. (See regulation in reference to application for a degree, Page 37.)

MEDALS, SCHOLARSHIPS, PRIZES, BURSARIES AND LOANS FOR 1939-40

GENERAL REGULATIONS

1. Scholarships, prizes and bursaries which are not based solely on academic standing are indicated by an asterisk. Unless other instructions are given in the Calendar notice, intending candidates must make application *to the Registrar not later than the last day of the final examinations* on forms provided for the purpose.

2. All awards of medals, scholarships, prizes and bursaries are made by Senate, unless otherwise provided for by special resolution of Senate.

The award of a medal, prize, scholarship or bursary is final when announced by the University.

3. Medals, scholarships, prizes, bursaries and loans are open to winter session students only, unless otherwise stated, and marks obtained in summer session courses are not taken into account in awarding them.

4. If the award of a medal, scholarship, or prize is based on an examination, no award will be made to a candidate who obtains less than 75 per cent. of the possible marks.

5. To be eligible for a General Proficiency Scholarship a student must take the full year's course, which must include the required courses for the year in which he is registered, except that in the Faculty of Arts and Science and in Agriculture, other subjects may be substituted for the required courses if credit for these has already been obtained.

The standing of students taking more than the required number of units shall be determined on the basis of the required number of units to be chosen in a manner most advantageous to the students.

6. Unless otherwise specified in the Calendar notice, no student may enjoy the proceeds of more than one scholarship in the same academic year, and the scholarships thus relinquished will be awarded to the candidates next in order of merit. Winners of more than one scholarship will be given recognition in the published lists.

7. Winners of scholarships who desire to do so may resign the monetary value. Nevertheless, their names will appear as winners in the University lists. Any funds thus made available will be used for additional scholarships, bursaries, or student loans.

8. Scholarships under the jurisdiction of the University are payable in two instalments—on the last day for the payment of

fees in each term. Undergraduate winners must continue their courses to the satisfaction of the Faculty concerned during the session following the award. The payment for the second term may be withheld in the case of an undergraduate scholarship holder whose work in the first term has been unsatisfactory. A Faculty is authorized to permit a scholarship to be reserved for one year, provided the student shows satisfactory reasons for postponing attendance. In the case of Matriculation Scholarships, postponement will be granted on medical grounds only. Application for reservation should be made to the Registrar.

9. In awarding bursaries consideration will be given to the financial need of applicants.

10. Endowed scholarships and bursaries will be paid provided the invested funds produce the necessary revenue.

11. The University does not guarantee the payment of any prizes or scholarships other than those from the funds of the University. With respect to prizes or scholarships based upon the gifts of individuals or associations other than the University, no award will be made unless the funds required for the same have been actually received from the private donor or donors.

12. The Senate of the University of British Columbia reserves the right so to change the terms under which any exhibition, scholarship or prize may be established at the University of British Columbia that the terms may better meet new conditions as they arise and may more fully carry out the intentions of the donor and maintain the usefulness of the benefaction. The right so reserved shall be exercised by a resolution of the Senate duly confirmed by the Board of Governors, provided always that a year's notice shall be given in Senate of any proposed change and that the donor or his representatives, if living, shall be consulted about the proposed change.

13. Limited funds are provided from which loans, not to exceed \$100, may be made to undergraduate students *who have completed satisfactorily two years' University work and who can show they are in need of pecuniary assistance*. Interest at the rate of 5 per cent. per annum is charged on these loans. They must be secured by approved joint promissory note given for a definite term and signed by the applicant and his parent or guardian. Loans are not granted to graduate students nor to students in diploma courses. Applications for loans should be addressed to the Bursar of the University.

14. The University is in possession of a great deal of information regarding post-graduate scholarships, fellowships and assistantships which other Universities and various research bodies make available. This information may be obtained from the Registrar.

MEDALS

The Governor-General's Gold Medal

A gold medal, presented by His Excellency the Governor-General of Canada, will be awarded to the student standing at the head of the graduating class for the B.A. degree. Honour and General Course students are eligible for this medal.

The Kiwanis Club Gold Medal

A gold medal, given by the Kiwanis Club of Vancouver, will be awarded to the student standing at the head of the graduating class for the B.Com. degree.

The medal will normally be awarded to an Honours student, but if there is no outstanding Honours student, this medal may be awarded to a General Course student.

The French Government Medal

A bronze medal, offered by the French Consul for Western Canada on behalf of the French Government, will be awarded to a student of the French language on the recommendation of the Head of the Department of Modern Languages.

The United Empire Loyalists' Association Medal*

The Vancouver Branch of the United Empire Loyalists' Association of Canada is offering a silver medal for the best essay received during the Session 1939-40 on any topic dealing with the history of the United Empire Loyalists and their influence on the development of Canada.

The award will be made on the recommendation of the Department of History. The competition is open to all undergraduates of the University, but preference is given to students enrolled in a Canadian History course.

The Lefevre Gold Medal and Scholarship

Out of funds provided by the late Mrs. Lefevre in memory of her husband, Dr. J. M. Lefevre, a gold medal and scholarship will be awarded annually to the student standing highest in general proficiency and research ability in one of the following courses: (a) Honours in Chemistry in the Faculty of Arts and Science; (b) Chemistry, or (c) Chemical Engineering in the Faculty of Applied Science. The award will be based upon the work of the last two years in these courses. The value of the scholarship is approximately \$150. The winning of this scholarship will not preclude the holder from enjoying the proceeds of a further award.

*See Paragraph 1, Page 42.

SCHOLARSHIPS FOR GRADUATES

University Graduate Scholarship*

A scholarship of \$200 may be awarded to a student of the graduating class who shows special aptitude for post-graduate studies and who is proceeding in the following year to post-graduate study in this or any other approved University.

The Anne Wesbrook Scholarship*

This scholarship of \$125, given by the Faculty Women's Club of the University, is open to a student of the graduating class of this University who is proceeding in the following year to post-graduate study in this or any other approved University.

The Exhibition of 1851 Scholarship*

Under the revised conditions for the award of the Exhibition of 1851 Scholarship in Science, the University of British Columbia is included in the list of Universities from which nominations for scholarships allotted to Canada may be made. These scholarships of £275 per annum are tenable, ordinarily, for two years. Scholarship winners with special needs may receive additional money grants during the year of their tenure. They are granted only to British subjects of not more than 26 years of age who have already completed a full University course and given evidence of capacity for scientific investigation. The scholarships are open to graduates of any University who have spent not less than three years in the study of Science.

The Dr. F. J. Nicholson Scholarships*

Out of the proceeds of a fund donated by Dr. Francis John Nicholson, the following scholarships will be awarded annually for the purpose of enabling students to do graduate study in the University of British Columbia or in any other approved University: (1) One scholarship of the value of \$500 for graduate work in Chemistry. Applicants must be Honours Graduates in Chemistry of the Faculty of Arts and Science, with the degree of B.A. or M.A., or graduates in Chemistry or Chemical Engineering of the Faculty of Applied Science, with the degree of B.A.Sc. or M.A.Sc. (2) One scholarship of the value of \$500 for graduate work in Geology. Applicants must be graduates of the Faculty of Applied Science in Geological or Mining Engineering, with the degree of B.A.Sc. or M.A.Sc.

Normally the scholarships will be payable in two instalments of \$250 each to provide for two years of graduate work. The

*See Paragraph 1, Page 42.

payment of the second instalment will be subject to approval by the University of British Columbia of the first year's graduate work. In exceptional circumstances the full sum of \$500 may be made available for work to be completed in a single year.

Recipients must be qualified to undertake graduate and research work, in respect of scholarship, ability, character and health. These scholarships will be granted with due consideration for the financial status of the candidate. The spirit of the endowment is to aid those to whom financial help is necessary or of material assistance in furthering their studies.

Applicants must be graduates of the University of British Columbia, have British citizenship and be not more than 30 years of age on the last day for receiving applications. Preference will be given in making awards to native-born British Columbians.

The John and Annie Southcott Memorial Scholarship*

A scholarship of the value of \$100, given annually by Mrs. Thomas H. Kirk, will be awarded to that student, who, possessing exceptional aptitude for research, either intends to pursue, or is already pursuing some approved investigation in the field of British Columbia history. The award will be made on the recommendation of the Head of the Department of History.

The scholarship will normally be awarded to a Fourth Year student or to a graduate proceeding to a higher degree, but may be awarded to a student of the Third Year.

The Native Daughters of Canada Scholarship*

A scholarship of \$50.00 is given by the Native Daughters of Canada to a Canadian-born graduate student for research work in the early history of British Columbia, such work to be carried on in the Provincial Archives in Victoria, B. C. The award will be made on the recommendation of the Head of the Department of History.

The B'nai B'rith District No. 4 Hillel Foundation Scholarships*

From the sum of \$250 made available by District Grand Lodge No. 4, B'nai B'rith, through Samuel Lodge, Vancouver, B. C., two scholarships of the value of \$125 each were awarded in the session 1938-39. The terms of award were as follows: These scholarships will be awarded to outstanding graduate students in any of the three Faculties—Arts and Science, Agriculture and Applied Science. The winners shall indicate satisfactory plans for graduate

*See Paragraph 1, Page 42.

study at the University of British Columbia or at any other University approved by the Joint Faculty Committee on Prizes and Scholarships. Only one scholarship shall be available in any one Faculty in one year. Applications must be made on forms available at the Registrar's Office.

SCHOLARSHIPS FOR UNDERGRADUATES

1. IN ALL FACULTIES

University Great War Scholarships*

Two scholarships of \$150 each may be awarded, on the basis of the work of the First Year, to returned soldiers, their dependents and the children of deceased soldiers proceeding to a higher year.

2. IN ARTS AND SCIENCE

University Scholarships in Arts and Science

Two scholarships in Arts and Science of \$150 each will be awarded to students proceeding to the Fourth Year, the award to be based on the work of the Third Year. These scholarships will be awarded respectively: 1. To the student standing highest with majors in group (1). (See Page 77.) 2. To the student standing highest with majors in group (2). (See Page 77.) Students taking full honours in Mathematics will be classified in group (a).

Two scholarships in Arts and Science of \$150 each will be awarded on the basis of the work of the Second Year to students proceeding to a higher year.

The Shaw Memorial Scholarship†

This scholarship of \$125, founded by friends of the late James Curtis Shaw, Principal of Vancouver College, and afterwards of McGill University College, Vancouver, will be awarded upon the results of the examination of the Second Year in Arts and Science to the undergraduate student standing highest in any two of three courses, English 2, Latin 2, Greek (Beginners' Greek, Greek 1 or Greek 2), and proceeding to a higher year.

The McGill Graduates' Scholarship†

A scholarship of \$125, founded by the McGill Graduates' Society of British Columbia, will be awarded to the student standing highest in English and French of the Second Year in Arts and Science and proceeding to a higher year.

*See Paragraph 1, Page 12.

†Originally donated to the Royal Institution (See Historical Sketch), this has been transferred by that body, with the consent of the donors, to the University of British Columbia.

The Terminal City Club Memorial Scholarship

This scholarship of \$100, founded by the members of the Terminal City Club as a memorial to those members of the Club who lost their lives in the Great War, will be awarded to the student standing highest in English 2 and Economics 2 in the Second Year in Arts and Science and proceeding to a higher year.

Royal Institution Scholarship in Arts and Science

A scholarship of \$150 will be awarded to the student taking first place in the examinations of the First Year in Arts and Science, and proceeding to a higher year.

University Scholarships in Arts and Science

Two scholarships of \$150 each will be awarded to the students taking second and third places in the examinations of the First Year in Arts and Science, and proceeding to a higher year.

The Beverley Cayley Scholarship

A scholarship of \$100, in memory of Beverley Cayley, Arts '18, given under the terms of the will of his mother, the late Mrs. Cayley, will be awarded to the male student standing highest in English 1 in the First Year of the Faculty of Arts and Science.

The N. Leo Klein Memorial Scholarship

A scholarship of \$50, in memory of N. Leo Klein, given by I. J. Klein, Esq., Vancouver, B. C., will be awarded to the student obtaining first place in the examinations of the Third Year of the course in Commerce.

The Vancouver Women's Canadian Club Scholarship

A scholarship of \$100, the proceeds of a fund created by the Vancouver Women's Canadian Club, will be awarded to the undergraduate obtaining first place in Canadian History (History 2, or 3, or 20).

The Ahepa Scholarship

A scholarship of \$75, given by the Gladstone Chapter No. 6, C.J., Order of Ahepa, will be awarded on the recommendation of the Head of the Department of Classics to the student of the third or fourth year who has shown the greatest promise in Greek studies.

If possible, the award will be made to an Honour student, but if there is no outstanding Honour student the scholarship may be given to a Pass student.

The John and Annie Southcott Memorial Scholarship*

As on Page 46.

The Summer Session Students' Association Scholarship*

A scholarship of \$30, given by the Summer Session Students' Association, will be awarded at the close of the Summer Session to the Summer Session student who in that session completes the Second Year with the highest standing. To be eligible a student must have taken his entire Second Year in The University of British Columbia Summer Session, Extra-sessional classes or Reading courses, and must be proceeding to a higher year in The University of British Columbia.

The British Columbia Teachers' Federation Scholarship*

A scholarship of \$50 given by the British Columbia Teachers' Federation will be awarded at the close of the Summer Session to the Summer Session student who, having been an active member of the British Columbia Teachers' Federation for the three years previous to the granting of the scholarship, completes, in that session, the Third Year of his University work with the highest standing in that year. To be eligible a student must have taken his entire Third Year in The University of British Columbia Summer Session, Extra-sessional classes or Reading courses, and must continue in his Fourth Year at The University of British Columbia.

3. IN APPLIED SCIENCE

University Scholarship in Nursing and Health*

A scholarship of \$150 will be awarded for general proficiency in previous work of University grade (which must include a minimum of two years' work in the Province of British Columbia), to a student proceeding to the Third Year (or in the double course, proceeding to the Fourth Year) of the Course in Nursing and Health and having successfully completed the hospital probationary period. Applications shall be made to the Registrar not later than December 1st.

The Vancouver Women's Canadian Club Scholarship

A scholarship of \$100, given by the Vancouver Women's Canadian Club, will be awarded to the student who attains the highest

*See Paragraph 1, Page 42.

standing in the first four years' training, academic and practical (or in the first five years' training, academic and practical, in the double course) of the Nursing and Health course.

The Dunsmuir Scholarship†

A scholarship of \$150, founded by the Hon. James Dunsmuir, will be awarded to the undergraduate student standing highest in the Mining Engineering Course of the Fourth Year in Applied Science, and proceeding to the Fifth Year.

University Scholarship in Applied Science

A scholarship of \$150 will be awarded to the student who obtains the highest marks in the Third Year in Applied Science and who is proceeding to the Fourth Year in that Faculty.

Royal Institution Scholarship in Applied Science

A scholarship of \$150 will be awarded for general proficiency in the work of the Second Year in Applied Science to a student who is proceeding to the Third Year in that Faculty.

The G. M. Dawson Scholarship

A scholarship of \$50 will be awarded to the undergraduate student standing highest in the Geological Engineering course, in Geological subjects, in the Fourth Year of the Faculty of Applied Science, and proceeding to the Fifth Year.

The B'nai B'rith Auxiliary No. 77 Scholarship

A scholarship of \$50, given by the Women's Auxiliary No. 77 of the B'nai B'rith, will be awarded to the student in Fourth Year Applied Science standing highest in the class of Chemical Engineering or Chemistry and proceeding to the Fifth Year.

4. IN AGRICULTURE

University Scholarship in Agriculture

A scholarship in Agriculture of \$150 will be awarded to a student proceeding to a higher year, the award to be based on the work of the First Year.

The David Thom Scholarship

A scholarship in Agriculture of \$100 will be awarded to a student proceeding to a higher year in that Faculty, the award to be based on the work of the Second Year.

†Originally donated to the Royal Institution (See Historical Sketch), this has been transferred by that body, with the consent of the donors, to the University of British Columbia.

The British Columbia Fruit Growers' Association Golden Jubilee Scholarship*

This scholarship, of the annual value of \$100, donated by the British Columbia Fruit Growers' Association, will be awarded to a student taking the horticultural options of the Third Year. To qualify for this scholarship candidates must obtain scholarship standing, not only in horticultural subjects, but also in the work of the year, and must be proceeding to the Horticultural Course of the Fourth Year—the year in which the scholarship shall be enjoyed.

MATRICULATION SCHOLARSHIPS

University Senior Matriculation Scholarship

One scholarship of \$150 will be awarded upon the results of the Senior Matriculation Examination to the candidate of highest standing in the Province.

Royal Institution Senior Matriculation Scholarships

Scholarships of the value of \$150 each will be awarded to two other students upon the results of the Senior Matriculation examinations. One of these scholarships will be for open competition throughout the Province; the other will be for open competition in all school districts of the Province other than the City of Vancouver, the City of North Vancouver, the District Municipalities of North Vancouver, West Vancouver, and Burnaby, and the City of New Westminster.

Royal Institution Junior Matriculation Scholarships

Eight General Proficiency scholarships will be awarded on the result of the Junior Matriculation examinations: (a) \$150 to the candidate of highest standing in the Province, and (b) \$150 to the candidate of next highest standing in each of the following districts: (1) Victoria District, (2) Vancouver Island (exclusive of Victoria District), and Northern Mainland (exclusive of North Vancouver and West Vancouver), (3) Vancouver Central District (comprising the former limits of the City of Vancouver), together with West Vancouver and North Vancouver, (4) Part of the Lower Mainland in the Fraser Harbour area, (5) The Fraser Valley, (6) Yale, (7) Kootenays.

These scholarships will be paid only to students in attendance at the University of British Columbia, with the exception that the Victoria District Junior Matriculation Scholarship will be paid to any winner of that scholarship in attendance at Victoria College.

*See Paragraph 1, Page 42.

Winners of all Matriculation Scholarships must notify the Registrar before September 1st of their intention of attending the University (or Victoria College in the case of the Victoria District Junior Matriculation Scholarship) during the following session; failing such notification, the winner's rights will lapse.

Postponement of Matriculation Scholarships will be granted only on medical grounds.

PRIZES

1. IN ALL FACULTIES

The University Essay Prize*

A book prize of the value of \$25 will be awarded to a Fourth Year student for the best essay presented in any of the courses regularly given by the Department of English. The award will be made on the recommendation of the Head of the Department of English.

The Players' Club Prize*

A prize of \$50, given by the Players' Club, is offered for an original play suitable for the Club's Christmas performance. The award will be made on the recommendation of the Faculty members of the Advisory Board of the Players' Club. All entries for this prize must be in the hands of the Honorary President of the Players' Club not later than September 30th.

2. IN ARTS AND SCIENCE

The French Government Book Prize

A book prize, offered by the French Consul for Western Canada on behalf of the French Government, will be awarded to a student of the French language on the recommendation of the Head of the Department of Modern Languages.

The John Marr Memorial Prize*

A prize of \$25, given by J. F. K. English, Esq., known as the John Marr Memorial Prize, will be awarded to the student, enrolled in the Education Class or pursuing graduate work towards the M.A. degree with Education as a Major, who presents the best essay on some phase of Secondary Education in this Province. A list of suitable topics is available and may be secured from the University Department of Education. The Essay may be prepared

*See Paragraph 1, Page 42.

especially for the Prize Competition or it may be submitted as part of a Course Requirement. It must be submitted to the Head of the Department of Education not later than the last day of the sessional examinations.

The University Graduate Historical Society Prize

A book prize of the value of \$25, given by the University Graduate Historical Society, will be awarded to the student of the final year who has done the most outstanding work in History during the third and fourth years. The award will be made on the recommendation of the Head of the Department of History.

If in any year no student reaches the required standard, the award will be withheld and may be given as an additional prize the following year. Both Honour and Pass students are eligible for the award.

The H. Nemichi Essay Prize*

A prize of \$50, given by H. Nemichi, Esq., Consul of Japan, will be awarded to a student enrolled in the course Government 4 for the best essay on a topic relating to Japan in the Pacific Area, such topic to be approved by the Department of Economics. The second award will be made in May, 1940. All essays must be submitted not later than the last day of sessional examinations. The prize will be awarded by the Senate on the recommendation of the Department of Economics and the Faculty of Arts and Science.

3. IN APPLIED SCIENCE

The Convocation Prize

A prize of \$50, given by Convocation of The University of British Columbia, will be awarded to the student in the Fifth Year of Applied Science whose record, in the opinion of the Faculty, is the most outstanding.

The Walter Moberly Memorial Prize

A book prize of the value of \$25, given by the Vancouver Branch of the Engineering Institute of Canada in memory of the late Walter Moberly, will be awarded for the best engineering thesis submitted by any Fifth Year student in the Faculty of Applied Science.

The Association of Professional Engineers' Prizes

Five book prizes, each of the value of \$25, are offered by the Engineering Profession in British Columbia (The Association of Professional Engineers of the Province of B. C.) for competition

*See Paragraph 1, Page 42.

by those students in the Fourth Year of the Faculty of Applied Science who are enrolled as engineering pupils according to the by-laws of the Association.

One of these prizes is awarded for the best summer essay in each of any five branches of engineering, to be selected and specified by the Faculty.

The five successful essays may be made available by the Faculty to the Council of the Engineering Profession and, through the Council, may be referred to or quoted in the literature of the Profession.

The Provincial Board of Health Prizes

The Provincial Board of Health of the Province of British Columbia offers the sum of \$100 to be given as prizes in the Public Health Nursing Course.

The Engineering Institute of Canada Prize

The Engineering Institute of Canada offers an annual prize of \$25 to each of eleven Canadian Universities of which the University of British Columbia is one.

The prize will be awarded to a student of the Fourth Year in Applied Science on the basis of the marks made in his academic work in that year. His activities in the students' engineering organization or in the local branch of a recognized engineering society will also be considered.

BURSARIES

The Captain LeRoy Memorial Bursary*

This bursary of the annual value of \$250 was given by the Universities Service Club in memory of their comrades who fell in the Great War. It is named after Captain O. E. LeRoy, who commanded the overseas contingent from this University and who was killed at Passchendaele in 1917.

It will be awarded to a student, or students, requiring financial assistance to enable him, or them, to attend the University. For this purpose it may be awarded to a matriculant, to a student of any year or to a graduate student of the University proceeding to post-graduate work in this or any approved university. In making the award preference will be given first to returned soldiers, then to the dependents of soldiers, and finally to suitable candidates from the student body at large.

Application must contain a statement of the academic record and special circumstances of the applicant, with two supporting

*See Paragraph 1, Page 42.

references, and, in the case of the preferred categories, of the war record of the soldier.

The award will be made by the Senate upon the recommendation of the Faculties acting in consultation with the Executive or accredited representatives of the Universities Service Club.

The Khaki University and Young Men's Christian Association Memorial Fund Bursaries*

A sum of money given to the University by the administrators of the Khaki University of Canada provides a fund from which are awarded annually ten bursaries of the value of \$100 each, known as the Khaki University and Young Men's Christian Association Memorial Bursaries.

Under conditions specified by the donors these bursaries may be used for undergraduate purposes only, and in making the awards a preference is given to the sons and daughters of soldiers of the Great War. The financial necessities of candidates are also taken into account.

To be eligible for an award a soldier's dependent must obtain at least second class standing, *i.e.*, 65 per cent.; for all others 75 per cent. is required.

Dependents of soldiers and others who have expectations of attaining standing as stated above and who are in need of financial assistance should apply to the Registrar not later than the last day of the final examinations.

These bursaries are open to students from Victoria College proceeding to a course of study in this University.

Application forms may be obtained in the Registrar's Office.

The American Woman's Club Bursary*

A bursary of \$140, given by the American Woman's Club of Vancouver, will be available for 1939-40 to assist a woman undergraduate who has completed at least one year in Arts and Science with satisfactory standing, and who could not otherwise continue her course. Application must be made to the Registrar not later than September 1st.

The University Women's Club Bursary*

A bursary of \$100 given by the University Women's Club of Vancouver will be available for a woman student of high scholastic standing in the Third Year of the Faculty of Arts and Science who is proceeding to the Fourth Year.

*See Paragraph 1, Page 42.

The Inter-Sorority Alumnae Club Bursary*

A bursary of \$150, given by the Inter-Sorority Alumnae Club of Vancouver, will be awarded to a woman student of satisfactory academic standing, proceeding to her Third Year or any higher year or to the Education Class, or, if a graduate, to the Social Service Diploma Course. The award will be made on the recommendation of the Dean of Women, to whom applications should be sent not later than September 1st on forms available in the Registrar's Office.

The Mildred Brock Memorial Bursary*

A bursary of \$75, given by the Delta Gamma Fraternity, will be available for a woman student of high scholastic standing proceeding to the Third or Fourth Year of her undergraduate studies; or, if a graduate, to the Teacher Training Course, or to the course leading to the Social Service Diploma. Application must be made to the Registrar not later than September 1st.

The Frances Milburn Bursary*

A bursary of \$150, given by the Vancouver Chapters of the P. E. O. Sisterhood in memory of the late Frances Milburn, will be available for 1939-40 to assist a woman undergraduate who has completed at least one year in Arts and Science with high standing in English, and who could not otherwise continue her course. The award will be made on the recommendation of the Dean of Women, to whom applications should be sent not later than September 1st on forms available in the Registrar's Office.

The Lady Laurier Club Bursaries*

Two bursaries of the value of \$50 each, given by the Lady Laurier Club of Vancouver, will be awarded to women students in the Teacher Training Course or in Third or Fourth Year Arts and Science, such students to fulfil all scholarship requirements and to have real need of financial assistance. Applications must be made to the Registrar not later than September 15th, and must be on forms available at the Registrar's Office.

The Alliance Francaise Bursary*

A bursary of not less than \$50 will be awarded on a basis of merit and need to a student specializing in French at the University. The bursary will normally be awarded to a student who has completed his Second Year and is proceeding to his Third Year. The award will be made on the recommendation of the Joint Faculty Com-

*See Paragraph 1, Page 42.

mittee on Prizes and Scholarships. Applications, on forms available in the Registrar's Office, must be received by the Registrar not later than October 1st.

The William MacKenzie Swan Memorial Bursary*

A bursary of the annual value of \$250, given by Major and Mrs. W. G. Swan in memory of their son, William MacKenzie Swan, an outstanding all-round undergraduate student and popular athlete who died July 28th, 1937, as a result of injuries received in a fall from the Pattullo Bridge at New Westminster on which he was engaged as Assistant Engineer, will be awarded to a student or students registered in the Third, Fourth or Fifth Year of the Faculty of Applied Science, requiring financial assistance to enable him or them to continue studies at the University. In making the award, consideration will be given to the academic record of the applicant and to his participation in undergraduate affairs.

Applications on forms available in the Registrar's office must be filed with the Registrar not later than October 1st.

The award will be made by the Senate upon the recommendation of the Faculty of Applied Science.

The Phil Wilson Bursary in Forestry*

A bursary of \$225, given by the British Columbia Loggers' Association, will be awarded to a student registered in Fifth Year Forestry. To be eligible for the award a student must have been a resident in British Columbia for the previous two years, must have a scholastic average of at least 65 per cent. in the work of the Third and Fourth Years at the University of British Columbia, and must give evidence of leadership, sterling character and physical vigour.

Applications, on forms available in the Registrar's Office, must be received by the Registrar not later than October 5th.

The David Thom Bursaries

From the funds of the David Thom Estate a sum of \$235 is available annually for the following bursaries:

1. A sum of \$100 to be awarded to the junior or senior matriculant with the highest standing who is registering for the first time in the Faculty of Agriculture. In the awarding of this bursary Regulation 9 under General Regulations for Medals, Scholarships and Prizes does not apply.
- *2. A sum of \$60 to be awarded to a student who has satisfactorily completed the work of the First Year in Agriculture and is proceeding to a higher year in that Faculty. Application must be made to the Registrar not later than September 15th.

*See Paragraph 1, Page 42.

- *3. A sum of \$75 to be awarded to a student who has satisfactorily completed the work of the Third Year in Agriculture and is proceeding to the Fourth Year in that Faculty. Application must be made to the Registrar not later than September 15th.

The Geldart Riadore Bursary*

A sum of \$175 will be awarded to a student who has completed at least one year of work in the Faculty of Agriculture, who is proceeding to a higher year in the Faculty, and who has given evidence of possessing those qualities necessary for community leadership.

The award is to be made on the recommendation of the Joint Faculty Committee on Prizes and Scholarships in consultation with the Dean of the Faculty of Agriculture.

Special Bursaries Fund*

For the Session 1939-40 a Special Bursaries Fund has been made available by the Board of Governors to enable students to attend the University who would not otherwise be able to do so. To be eligible for an award from this fund a student must have attained at least Second Class standing in the examinations last written, and must give evidence of need.

Applications for these bursaries must be in the hands of the Registrar not later than September 15th. Application forms may be obtained in the Registrar's Office.

LOANS

General Loan Fund

The General Loan Fund is maintained by annual grants made by the Board of Governors. Its operation is described in paragraph 13 under General Regulations for Medals, Scholarships, Prizes, etc.

The Wheatley Memorial Loan Fund

The Association of Professional Engineers of the Province of British Columbia has established a loan fund in memory of Edward Augustus Wheatley, who, as Registrar of the Association during the years 1921 to 1938, exerted a vital influence on the Engineering Profession, not only in this Province but throughout Canada.

The Fund is available to Engineering Pupils of the Association in attendance at the University, and all applicants for loans must be recommended by the Dean of the Faculty of Applied Science. The fund is distributed on the recommendation of the Joint Faculty Committee on Prizes and Scholarships.

*See Paragraph 1, Page 42.

The Canadian Institute of Mining and Metallurgy, B. C. Division, Fund

This is a fund of \$100, given by the Canadian Institute of Mining and Metallurgy to the University as a trust to be used for loans to students taking the mining course. Applicants for loans must be recommended by the Departments of Geology and of Mining and Metallurgy.

The David Thom Fund

From the David Thom Estate funds a sum of \$1500 has been set aside for loans to students in Agriculture who have been unable to borrow from the General Loan Fund or who have obtained loans from that fund insufficient for their needs; of this amount, \$300 is available for students in the Occupational Course and the balance for Third and Fourth Year students.

The Alma Mater Loan Fund

Established by the Class of 1937.

This fund was established by the Graduating Classes of 1937 as a trust to be used for loans to undergraduates who have completed at least one year at University and who have attained satisfactory academic standing. The fund is administered by the University and distributed by the Joint Faculty Committee on Prizes and Scholarships. Applications for assistance under this fund must be made to the Bursar.

The University Chapter I.O.D.E. Loan Fund

This fund was established by the University Chapter, of the I.O.D.E., to assist women students of the Second, Third and Fourth Years. Loans are to be made on the basis of scholarship and financial need, and are to be distributed by the Joint Faculty Committee on Prizes and Scholarships in consultation with the Dean of Women. Applications for assistance under this fund should be made to the Bursar.

SCHOLARSHIPS ANNOUNCED BY THE UNIVERSITY BUT AWARDED BY OTHER INSTITUTIONS

The Rhodes Scholarship*

A Rhodes Scholarship is tenable at the University of Oxford and may be held for three years. Since, however, the majority of Rhodes Scholars obtain standing which enables them to take a

*See Paragraph 1, Page 42.

degree in two years, appointments are made for two years in the first instance, and a Rhodes Scholar who may wish to remain for a third year will be expected to present a definite plan of study for that period satisfactory to his College and to the Rhodes Trustees.

Rhodes Scholars may be allowed, if the conditions are approved by their own College and by the Oxford Secretary to the Rhodes Trustees, either to postpone their third year, returning to Oxford for it after a period of work in their own countries, or to spend their third year in post-graduate work at any University of Great Britain, and in special cases at any University on the continent of Europe, the overseas Dominions, or in the United States, but not in the country of their origin.

The stipend of a Rhodes Scholarship is fixed at £400 per year. At most colleges, and for most men, this sum is sufficient to meet a Rhodes Scholar's necessary expenses for Term-time and Vacations, but Scholars who can afford to supplement it by, say, £50 per year from their own resources will find it advantageous to do so.

A candidate to be eligible must:

1. Be a British subject, with at least five years' domicile in Canada, and unmarried. He must have passed his nineteenth, but not have passed his twenty-fifth birthday on October 1st of the year *for* which he is elected.
2. Have reached such a stage in his course at one of the Universities of Canada that he will have completed at least two years at the University in question by October 1st of the year *for* which he is elected.

Candidates may apply either for the Province in which they have their ordinary private domicile, home, or residence, or for any Province in which they have received at least two years of their college education before applying.

In that section of the will in which he defined the general type of scholar he desired, Mr. Rhodes wrote as follows:

"My desire being that the students who shall be elected to the Scholarships shall not be merely bookworms, I direct that in the election of a student to a Scholarship regard shall be had to:

1. His literary and scholastic attainments.
2. His fondness for and success in manly outdoor sports such as cricket, football and the like.
3. His qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindness, unselfishness and fellowship, and

4. His exhibition during school days of moral force of character and of instincts to lead and to take an interest in his school-mates, for those latter attributes will be likely in after life to guide him to esteem the performance of public duties as his highest aim."

Full particulars can be obtained from W. Tom Brown, Esq., 470 Granville Street, Vancouver, B. C., Secretary of the Selection Committee for the Province of British Columbia.

The selection for any year is made in the previous December, and each candidate for a scholarship is required to make application to the Secretary of the Committee of Selection of the Province in which he wishes to compete not later than October 31st. Application forms may be obtained from the Registrar's Office or from the Secretary of the Selection Committee.

The French Government Scholarship*

A scholarship of 18,000 francs is donated by the French Government for one year's post-graduate study in France. It is tenable for one year and is contingent upon the voting of the credits for the year by the French Chambers. As this contingency applies to every item of the French budget, the scholarship may be considered as permanent.

The award is made by the French Consul for Western Canada, residing in Vancouver, on the recommendation of the Head of the Department of French in the University.

Applications must be in the hands of the French Consul by April 15th. Further information concerning the terms of the award may be obtained from the Registrar.

The Imperial Order Daughters of the Empire Scott Memorial Scholarship*

This scholarship of \$100, derived from an endowment founded by the Imperial Order Daughters of the Empire of the City of Vancouver, in memory of Captain Robert Falcon Scott, R.N., the Antarctic explorer, who sacrificed his life in the cause of Science, will be awarded for general proficiency in biological subjects to the student who has completed his Second Year in Arts and Science, and who is proceeding in the Third Year to an Honours Course in Biology, single or combined. The award will be made by the I.O.D.E. in consultation with the Head of the Department of Botany.

*See Paragraph 1, Page 42.

1939-40

THE
FACULTY
OF
ARTS AND SCIENCE

TIME TABLE

FACULTY OF ARTS

KEY TO BUILDINGS: A, Arts; Ag, Agr
Mornings

	Monday	Room	Tuesday	Room	Wednesday	Room
8.30	Biology 2 a & b.....	Ap 101	Botany 4.....	-----	Biology 2 a.....	Ap 101
	Biology 3.....	Ap 235	Chemistry 18.....	-----	Biology 2 b, Lab.....	-----
	Botany 6 e.....	Ap 233	Commerce 5.....	A 204	Biology 3.....	Ap 235
	Chemistry 10.....	-----	English 1, Sec. 3.....	A 100, 106, 203, 206	Botany 6 e.....	Ap 233
	Chemistry 12.....	-----	English 21 a.....	A 108	Chemistry 10.....	-----
	Economics 6.....	S 210	French 2, Sec. 2.....	A 101, 104, 105	Chemistry 12.....	-----
	Education 10.....	Ag 100	German 1, Sec. 1.....	A 203	Economics 6.....	S 210
	English 1, Sec. 1.....	A 103, 106, 203, 208	German 3 a.....	A 201	Education 10.....	Ag 100
	English 13.....	A 100	Latin 2 a.....	A 108	English 1, Sec. 1.....	A 103, 106, 203, 208
	English 22.....	A 201	Latin 6.....	A 102	English 13.....	A 100
	French 2, Sec. 1.....	A 104, 105, 108	Physics A, Sec. 1.....	S 200	English 22.....	A 201
	Geology 4.....	Ap 102	Social Service 3.....	Ap 214	French 2, Sec. 1.....	A104,105, 108
	Geology 23.....	Ap 106	Zoology 2.....	Ap 101	Geology 4.....	Ap 102
	Greek 9.....	A 101	Zoology 3.....	Ap 101	Greek 9.....	A 101
	Latin 1, Sec. 1.....	A 102			Latin 1, Sec. 1.....	A 102
	Mathematics 10.....	A 204			Mathematics 10.....	A 204
	Physics 1, Sec. 1.....	S 200			Physics 1, Sec. 1.....	S 200
	Psychology A.....	Ap 100			Psychology A.....	S 300
					Social Service 12.....	A 207
9.30	Biology 1, Sec. A.....	Ap 202	Bacteriology 1.....	S 400	Biology 1, Sec. A.....	Ap 202
	Botany 5 a & c.....	Ap 111	Biology 2 d.....	-----	Biology 2 b, Lab.....	-----
	Chemistry 3.....	S 300	Botany 3 a.....	Ap 101	Botany 5 a.....	Ap 111
	Economics 1, Sec. 1.....	S 400	Botany 6 c.....	Ap 101	Chemistry 3.....	S 300
	Economics 11.....	A 108	Chemistry 9.....	S 417	Economics 1, Sec. 1.....	S 400
	Education 12.....	A 204	Economics 1, Sec. 3.....	A 108	Economics 11.....	A 108
	English 9.....	A 100	Economics 4.....	Ap 204	Education 12.....	A 204
	French 3 b.....	A 104	English 10.....	A 105	English 9.....	A 100
	French 4 b.....	A 105	French 4 a.....	A 104	French 3 b.....	A 104
	Geography 3.....	Ap 102	Geology 2 a & b.....	Ap 102	French 4 b.....	A 105
	Geology 1 a & c.....	Ap 100	German 1, Sec. 2 & 3.....	A 203, A 208	Geography 3.....	Ap 102
	History 12.....	A 101	Government 1.....	A 108	Geology 1 a & c.....	Ap 100
	Mathematics 1, Sec. 1.....	A 106, 205, 206 Ag 100	History 3.....	A 204	Geology 7.....	Ap 106
	Mathematics 13.....	A 102	History 15.....	A 101	History 12.....	A 101
	Mathematics 16.....	A 201	Latin 2 b.....	A 102	Mathematics 1, Sec. 1.....	A 106, 205, 206 Ag 100,
	Physics 1, Sec. 2.....	S 200	Mathematics 1, Sec. 2.....	A 100, 106, 205	Mathematics 13.....	A 102
	Physics 4.....	S 210	Mathematics 12.....	A 206	Mathematics 16.....	A 201
	Sociology 2.....	A 207	Philosophy 2.....	A 207	Physics 1, Sec. 2.....	S 200
	Sociology 3.....	A 103	Physics A, Sec. 2.....	S 200	Physics 4.....	S 210
	Zoology 9.....	Ap 101	Social Service 4 & 8.....	A 201	Sociology 2.....	A 207
					Sociology 3.....	A 103
					Zoology 9.....	Ap 101

CONSULT DEPARTMENT HEADS FOR

--- 1939 - 1940

AND SCIENCE

iculture; Ap, Applied Science; S, Science.

Mornings

Thursday	Room	Friday	Room	Saturday	Room	
Chemistry 18.....		Biology 2 a & b, Labs.	Ap 101	Chemistry 5 Lab.,		
Commerce 5.....	A 204	Economics 6.....	S 210	Sec. b.....		
English 1, Sec. 3.....	A 100,	Education 10.....	Ag 100	Commerce 5.....	A 204	
	106, 205,	English 1, Sec. 1.....	A 108,	Education 14.....	Ag 100	
	206		106, 208,	English 1, Sec. 3.....	A 100,	
English 21 a.....	A 108		208		106, 205,	
French 2, Sec. 2.....	A 101,	English 18.....	A 100	French 2, Sec. 2.....	A 101,	
	104, 105	French 2, Sec. 1.....	A 104,		104, 105	
German 1, Sec. 1.....	A 208		105, 108	Geology 10.....		
German 3 a.....	A 201	Geology 4.....	Ap 102	German 1, Sec. 1.....	A 208	
Latin 2 a.....	A 108	Greek 9.....	A 101	German 3 a.....	A 201	
Latin 6.....	A 102	Latin 1, Sec. 1.....	A 102	Latin 2 a.....	A 108	
Physics A, Sec. 1.....	S 200	Mathematics 10.....	A 204	Latin 6.....	A 102	
Social Service 2.....	Ap 214	Physics 1, Sec. 1.....	S 200	Physics A, Sec. 1.....	S 200	
Zoology 2.....	Ap 101	Psychology A.....	Ap 100			
Zoology 3.....	Ap 101					
						8.30
Bacteriology 1, Lab.		Biology 2 a & b, Labs.		Botany 5 b Lab.....		
Sec. 2.....		Botany 5 b.....		Chemistry 5 Lab.,		
Biology 2 d.....		Chemistry 2.....	S 800	Sec. b.....		
Botany 3 a.....	Ap 101	Economics 1, Sec. 1.....	S 400	Economics 1, Sec. 3.....	A 108	
Botany 6 c.....	Ap 101	Economics 11.....	A 108	Economics 4.....	Ap 204	
Chemistry 9.....	S 417	Education 12.....	A 204	Education 14.....	Ag 100	
Economics 1, Sec. 3.....	A 108	English 9.....	A 100	English 10.....	A 105	
Economics 4.....	Ap 204	French 3 b.....	A 104	French 4 a.....	A 104	
English 10.....	A 105	French 4 b.....	A 105	Geology 10.....		
French 4 a.....	A 104	Geography 3.....	Ap 102	German 1,		
Geology 2 a & b.....	Ap 102	Geology 7.....	Ap 106	Secs. 2 & 3.....	A 208,	
German 1, Sec. 2 & 3.....	A 208,	History 12.....	A 101		A 208	
	A 208	Mathematics 1,		Government 1.....	A 108	
Government 1.....	A 108	Sec. 1.....	A 106,	History 3.....	A 204	
History 3.....	A 204		205, 206,	History 15.....	A 101	
History 15.....	A 101		Ag 100	Latin 2 b.....	A 102	
Latin 2 b.....	A 102	Mathematics 13.....	A 102	Mathematics 1,		
Mathematics 1,		Physics 1, Sec. 2.....	S 200	Sec. 2.....	A 100,	
Sec. 2.....	A 100,	Physics 4.....	S 210		106, 205	
	106, 205	Sociology 2.....	A 207	Philosophy 2.....	A 207	
Mathematics 12.....	A 206	Sociology 3.....	A 103	Physics A, Sec. 2.....	S 200	
Philosophy 2.....	A 207					
Physics A, Sec. 2.....	S 200					
Social Service 4 & 8.....	A 201					

SUBJECTS NOT IN THIS TIME TABLE

TIME TABLE

Mornings

	Monday	Room	Tuesday	Room	Wednesday	Room
10.30	Agricultural Economics 1.....	Ag 100	Bacteriology 1 Lab., Sec. 2.....		Agricultural Economics 1.....	Ag 100
	Biology 1, Sec. B.....	Ap 100	Botany 1 a.....	Ap 101	Bacteriology 9 & 10.....	
	Botany 6 d.....		Botany 6 b.....	Ap 235	Biology 1, Sec. B.....	Ap 100
	Chemistry 1, Sec. 1.....	S 300	Chemistry 1, Sec. 3.....	S 300	Botany 6 d.....	
	Chemistry 7.....	S 417	Chemistry 4.....	S 417	Chemistry 1, Sec. 1.....	S 300
	Economics 1, Sec. 2.....	S 400	Economics 10.....	A 100	Chemistry 7.....	S 417
	Economics 8.....	S 200	Economics 13.....	A 205	Economics 1, Sec. 2.....	S 400
	Economics 12.....	Ap 202	English 19.....	A 206	Economics 3.....	S 200
	English 14.....	A 201	French 1, Sec. 2.....	A 104, 105	English 14.....	A 201
	French 1, Sec. 1.....	A 104, 105, 108	French 3 a.....	A 106, 208	French 1, Sec. 1.....	A 104, 105, 108
	French 3 c.....	A 206	Geology 6.....	Ap 102	French 3 c.....	A 206
	Geology 8.....	Ap 102	Government 2.....	A 201	Geology 8.....	Ap 102
	German, Beg., Secs. 1 & 2.....	A 205, 207	History 13.....	A 207	German, Beg., Secs. 1 & 2.....	A 205, 207
	Government 4.....	A 208	History 17.....	A 203	Government 4.....	A 208
	History 4.....	A 100	Latin 1, Sec. 2.....	A 103	History 4.....	A 100
	History 11.....	A 208	Mathematics 2 a, Sec. 2.....	A 204	History 11.....	A 208
	History 12.....	A 103	Philosophy 9.....	A 102	History 12.....	A 103
	History 19.....	A 101	Social Service 1.....	A 101	History 19.....	A 101
	Mathematics 2 a, Sec. 1.....	A 204			Mathematics 2 a, Sec. 1.....	A 204
	Philosophy 4.....	A 102			Philosophy 4.....	A 102
	Physics 5.....	S 210			Physics 5.....	S 210
	Zoology 1.....	Ap 101			Zoology 1.....	Ap 101
	Zoology 4.....				Zoology 4.....	
	Zoology 7.....				Zoology 7.....	
11.30	Agricultural Economics 2.....	Ag 100	Bacteriology 1, Lab. Sec. 2.....		Agricultural Economics 2.....	Ag 100
	Biology 4.....	Ap 101	Economics 2.....	A 100	Biology 4.....	Ap 101
	Economics 5.....	A 103	Economics 9.....	A 201	Economics 5.....	A 103
	Economics 7.....	A 104	Mathematics 1, Sec. 3.....	A 103	Economics 7.....	A 104
	English 1, Sec. 2.....	A 206	Mathematics 15.....	A 205	English 1, Sec. 2.....	A 206
	German, Beg., Sec. 3.....	A 205	Philosophy 8.....	A 206	German Beg., Sec. 3.....	A 205
	German 2, Sec. A.....	A 105	Psychology 3.....	A 204	German 2, Sec. A.....	A 105
	Greek 4.....	A 102			Greek 4.....	A 102
	History 10.....	A 207			History 10.....	A 207
	Mathematics 3.....	A 204			Mathematics 3.....	A 204
	Physics 2.....	S 200			Physics 2.....	S 200
	Psychology 1.....	A 100			Psychology 1.....	A 100
	Psychology 7.....	A 106			Psychology 7.....	A 106

CONSULT DEPARTMENT HEADS FOR

—Continued

Mornings

Thursday	Room	Friday	Room	Saturday	Room	
Bacteriology 1, Lab. Sec. 2.....		Agricultural Economics 1.....	Ag 100	Botany 5 b Lab.....		
Botany 1 a.....	Ap 101	Botany 5 a.....		Chemistry 1, Sec. 3.....	S 300	
Chemistry 1, Sec. 3.....	S 300	Chemistry 1, Sec. 1.....	S 300	Chemistry 5 Lab., Sec. b.....		
Chemistry 4.....	S 417	Economics 1, Sec. 2.....	S 400	Commerce 2.....	Ap 120	
Economics 10.....	A 100	Economics 3.....	S 200	Economics 10.....	A 100	
Economics 13.....	A 205	English 14.....	A 201	English 19.....	A 206	
English 19.....	A 206	French 1, Sec. 1.....	A 104, 105, 108	French 1, Sec. 2.....	A 104, A 105	
French 1, Sec. 2.....	A104,105	French 3 c.....	A 206	French 3 a.....	A106,208	
French 3 a.....	A106,208	Geology 8.....	Ap 102	Geology 10.....		
Geology 6.....	Ap 102	German, Beg., Secs. 1 & 2.....	A205,207	Government 2.....	A 201	
Government 2.....	A 201	Government 4.....	A 208	History 13.....	A 207	
History 13.....	A 207	History 4.....	A 100	History 17.....	A 203	10.30
History 17.....	A 203	History 11.....	A 203	Latin 1, Sec. 2.....	A 103	
Latin 1, Sec. 2.....	A 103	History 12.....	A 103	Mathematics 2 b, Sec. 2.....	A 204	
Mathematics 2 a, Sec. 2.....	A 204	History 19.....	A 101	Philosophy 9.....	A 102	
Philosophy 9.....	A 102	Mathematics 2 b, Sec. 1.....	A 204			
Social Service 1.....	A 101	Philosophy 4.....	A 102			
		Physics 5.....	S 210			
		Zoology 5.....	Ap 101			
		Zoology 6.....	Ap 101			
Economics 2.....	A 100	Agricultural Economics 2.....	Ag 100	Botany 5 b Lab.....		
Economics 9.....	A 201	Economics 5.....	A 103	Economics 2.....	A 100	
Mathematics 1, Sec. 3.....	A 103	Economics 7.....	A 104	Economics 9.....	A 201	
Mathematics 15.....	A 205	English 1, Sec. 2.....	A 206	Mathematics 1, Sec. 3.....	A 103	
Philosophy 8.....	A 206	German, Beg., Sec. 3.....	A 205	Psychology 3.....	A 204	11.30
Psychology 3.....	A 204	German 2, Sec. A.....	A 105			
		Greek 4.....	A 102			
		History 10.....	A 207			
		Mathematics 3.....	A 204			
		Physics 2.....	S 200			
		Psychology 1.....	A 100			
		Psychology 7.....	A 106			

SUBJECTS NOT IN THIS TIME TABLE

TIME TABLE

Afternoons

	Monday	Room	Tuesday	Room	Wednesday	Room
1.30	Bacteriology 5.....	-----	Bacteriology 1 Lab., Sec. 1.....	-----	Bacteriology 9 & 10, Labs.....	-----
	Botany 3 a Lab.....	-----	Biology 1 Lab., Sec. 1.....	-----	Botany 3 a Lab.....	-----
	Botany 4 Lab.....	-----	Botany 6 b Lab.....	-----	Botany 4 Lab.....	-----
	Botany 5 a & c Lab.....	-----	Botany 6 e Lab.....	-----	Botany 5 c Lab.....	-----
	Chemistry 1, Sec. 2.....	S 300	Chemistry 4 a Lab., Sec. a.....	-----	Botany 6 c Lab.....	-----
	Chemistry 5.....	-----	Chemistry 9 Lab.....	-----	Chemistry 1, Sec. 2.....	S 300
	Chemistry 7 Lab.....	-----	Commerce 1.....	A 102	Economics 12 Lab., Sec. B.....	-----
	Economics 12 Lab., Sec. A.....	-----	Economics 13 Lab.....	Ap "T"	Education 14.....	A 103
	Education 14.....	A 103	French 3 c.....	A 105	English 2.....	A 100, Ap 100
	English 2.....	A 100, Ap 100	Geology 1 b & d Lab. Sec. 1.....	Ap 120	French 1, Sec. 3.....	A 104, 105, 204
	French 1, Sec. 3.....	A 104, 105, 204	Geology 7 Lab.....	Ap 106	Geology 7 Lab.....	Ap 106
	German, Beg., Sec. 4.....	A 205	Mathematics 1, Sec. 1.....	A 106, 205, 206, Ag 100	German, Beg., Sec. 4.....	A 205
	History 18.....	A 208	Philosophy 10.....	A 201	History 18.....	A 208
	Latin 4.....	A 207	Physics 4 Lab., Sec. 1.....	-----	Latin 4.....	A 207
	Mathematics 11.....	A 101	Psychology 6.....	A 207	Mathematics 11.....	A 101
	Philosophy 7.....	A 201	Zoology 2 Lab.....	-----	Philosophy 7.....	A 201
	Psychology 4.....	Ag 100	Zoology 3 Lab.....	-----	Psychology 4.....	Ag 100
	Zoology 5.....	-----	Zoology 4 Lab.....	-----	Zoology 5 Lab.....	-----
	Zoology 6.....	-----	Zoology 7 Lab.....	-----	Zoology 6 Lab.....	-----
2.30	Bacteriology 3.....	-----	Bacteriology 1 Lab., Sec. 1.....	-----	Bacteriology 9 & 10, Labs.....	-----
	Bacteriology 5 Lab.....	-----	Biology 1 Lab., Sec. 1.....	-----	Botany 3 a Lab.....	-----
	Botany 3 a Lab.....	-----	Botany 6 b Lab.....	-----	Botany 4 Lab.....	-----
	Botany 4 Lab.....	-----	Botany 6 e Lab.....	-----	Botany 5 c Lab.....	-----
	Botany 5 a & c Lab.....	-----	Chemistry 4 a Lab., Sec. a.....	-----	Botany 6 c Lab.....	-----
	Chemistry 7 Lab.....	-----	Chemistry 5 Lab., Sec. a.....	-----	Economics 12 Lab., Sec. B.....	-----
	Commerce 2.....	Ap 120	Chemistry 9 Lab.....	-----	English 17.....	Ap 100
	Economics 12 Lab., Sec. A.....	-----	Chemistry 9 Lab.....	-----	French 2, Sec. 3.....	A 104
	English 17.....	Ap 100	Economics 13 Lab.....	Ap "T"	Geology 7 Lab.....	Ap 106
	French 2, Sec. 3.....	A 104	English 1, Sec. 3.....	A 100, 106, 205, 206	Geography 1.....	Ap 102
	Geography 1.....	Ap 102	Geology 1 b & d Lab. Sec. 1.....	Ap 120	German, Beg., Sec. 5.....	A 108, 205
	German, Beg., Sec. 5.....	A 108, 205	Geology 7 Lab.....	Ap 106	German 2, Sec. B.....	A 206
	German 2, Sec. B.....	A 206	Latin 8, Sec. b.....	A 102	History 1.....	A 100
	History 1.....	A 100	Mathematics 4.....	A 101	History 14.....	A 101
	History 14.....	A 101	Physics 4 Lab., Sec. 1.....	-----	Philosophy 1.....	S 210
	Philosophy 1.....	S 210	Zoology 2 Lab.....	-----	Sociology 1.....	A 103
	Physics 5 Lab., Sec. 1.....	-----	Zoology 3 Lab.....	-----	Zoology 5 Lab.....	-----
	Sociology 1.....	A 103	Zoology 4 Lab.....	-----	Zoology 6 Lab.....	-----
	Zoology 5 Lab.....	-----	Zoology 7 Lab.....	-----		
	Zoology 6 Lab.....	-----				

CONSULT DEPARTMENT HEADS FOR

—Continued

Afternoons

Thursday	Room	Friday	Room			
Bacteriology 1 Lab., Sec. 1.....		Biology 1, Lab., Sec. 5.....				
Biology 1 Lab., Sec. 3.....		Botany 6 d Lab.....				
Botany 6 c & e Lab.....		Chemistry 1, Sec. 2.....	S 800			
Botany 7 a.....		Chemistry 3 Lab., Sec. a.....				
Chemistry 3 Lab., Sec. b.....		Chemistry 4a Lab., Sec. b.....				
Commerce 1 Lab.....		Chemistry 5 Lab., Sec. b.....				
Economics 13 Lab.....	Ap "T"	Education 14.....	A 103			
Geology 1 b & d Lab., Sec. 2.....	Ap 120	English 2.....	A 100, Ap 100			
Geology 9.....	Ap 112					
Mathematics 1, Secs. 2 & 3.....	A100,103 106, 205	French 1, Sec. 3.....	A 104, 105, 204			1.30
Philosophy 10.....	A 201	Geology 2 Lab.....				
Physics 4 Lab., Sec. 2.....		German, Beg., Sec. 4.....	A 205			
Psychology 6.....	A 207	History 18.....	A 208			
Zoology 1 Lab., Sec. a.....		Latin 4.....	A 207			
		Philosophy 7.....	A 201			
		Psychology 4.....	Ag 100			
		Zoology 9 Lab.....				
Bacteriology 1 Lab., Sec. 1.....		Biology 1 Lab., Sec. 5.....				
Biology 1 Lab., Sec. 3.....		Biology 3 Lab.....				
Botany 6 c & e Lab.....		Botany 6 d Lab.....				
Botany 7 a Lab.....		Chemistry 3 Lab., Sec. a.....				
Chemistry 3 Lab., Sec. b.....		Chemistry 4 a Lab., Sec. b.....				
Chemistry 5 Lab., Sec. a.....		Chemistry 5 Lab., Sec. b.....				
Commerce 1 Lab.....		English 17.....	Ap 100			
Economics 13 Lab.....	Ap. "T"	French 2, Sec. 3.....	A 104			
English 1, Secs. 1 & 2.....	A 103, 106, 203, 206, 208	Geography 1.....	Ap 102			
Geology 1 b & d, Lab., Sec. 2.....	Ap 120	Geology 2 Lab.....				
Geology 9.....	Ap 112	Geology 8.....	Ap 120			
Latin 8, Sec. a.....	A 102	German Beg., Sec. 5.....	A108,205			
Mathematics 4.....	A 101	German 2, Sec. B.....	A 206			
Physics 4 Lab., Sec. 2.....		History 1.....	A 100			
Zoology 1 Lab., Sec. a.....		History 14.....	A 101			
		Philosophy 1.....	S 210			
		Physics 5 Lab., Sec. 2.....				
		Sociology 1.....	A 103			
		Zoology 9 Lab.....				
						2.30

SUBJECTS NOT IN THIS TIME TABLE

TIME TABLE

Afternoons

	Monday	Room	Tuesday	Room	Wednesday	Room
3.30	Bacteriology 3 & 5, Labs. Botany 1 a Lab. Botany 4 Lab. Chemistry 1 Lab., Sec. a Chemistry 7 Lab. Commerce 2 Ap 120 French 3 c A 208 Geology 5 Ap 102 Physics 5 Lab., Sec. 1 Zoology 5 Lab. Zoology 6 Lab.		Bacteriology 2 Lab. Biology 1 Lab., Sec. 2 Chemistry 1 Lab., Sec. b Chemistry 2 Lab. Chemistry 4 a Lab., Sec. a Chemistry 5 Lab., Sec. a Chemistry 9 Lab. Geology 6 Lab. Ap 120 Physics 4 Lab., Sec. 1 Zoology 2 Lab. Zoology 3 Lab. Zoology 4 Lab. Zoology 7 Lab.		Bacteriology 9 & 10, Labs. Botany 4 Lab. Social Service 11 A 101 Social Service 13 A 102	
4.30	Bacteriology 3 & 5, Labs. Botany 1 a Lab. Chemistry 1 Lab., Sec. a Chemistry 7 Lab. Economics 15 Ap 120 Geology 5 Ap 102 Physics 5 Lab., Sec. 1 Social Service 7 A 102 Zoology 5 Lab. Zoology 6 Lab.		Bacteriology 2 Lab. Biology 1 Lab., Sec. 2 Chemistry 1 Lab., Sec. b Chemistry 2 Lab. Chemistry 4 a Lab., Sec. a Chemistry 5 Lab., Sec. a Chemistry 9 Lab. Geology 6 Lab. Ap 120 Zoology 2 Lab. Zoology 3 Lab. Zoology 4 Lab. Zoology 7 Lab.		Bacteriology 9 & 10, Labs. Chemistry 2 Lab. Social Service 11 A 101 Social Service 13 A 102	
5.30	Chemistry 1 Lab., Sec. a		Chemistry 1 Lab., Sec. b Chemistry 2 Lab. Chemistry 9 Lab.		Chemistry 2 Lab.	

CONSULT DEPARTMENT HEADS FOR

—Continued

Afternoons

Thursday	Room	Friday	Room			
Bacteriology 2 Lab.....		Bacteriology 3 Lab.....				
Biology 1, Lab., Sec. 4.....		Biology 1 Lab., Sec. 6.....				
Biology 4 Lab.....		Biology 3 Lab.....				
Botany 7 a Lab.....		Botany 6 d Lab.....				
Chemistry 1 Lab., Sec. c.....		Chemistry 1 Lab., Sec. d.....				
Chemistry 2 Lab.....		Chemistry 3 Lab., Sec. a.....				3.30
Chemistry 3 Lab., Sec. b.....		Chemistry 4a Lab., Sec. b.....				
Chemistry 5 Lab., Sec. a.....		Chemistry 5 Lab., Sec. b.....				
Physics 4 Lab., Sec. 2		English 24.....	A 104			
Zoology 1 Lab., Sec. b		Physics 5 Lab., Sec. 2.....				
		Social Service 9 & 10	A 102			
		Zoology 9 Lab.....				
Bacteriology 2, Lab.....		Bacteriology 3 Lab.....				
Biology 1 Lab., Sec. 4.....		Biology 1 Lab., Sec. 6				
Biology 4 Lab.....		Biology 3 Lab.....				
Chemistry 1 Lab., Sec. c.....		Botany 6 d Lab.....				
Chemistry 2 Lab.....		Chemistry 1 Lab., Sec. d.....				
Chemistry 3 Lab., Sec. b.....		Chemistry 2 Lab.....				4.30
Chemistry 5 Lab., Sec. a.....		Chemistry 3 Lab., Sec. a.....				
Zoology 1 Lab., Sec. b.....		Chemistry 4a Lab., Sec. b.....				
		English 24.....	A 104			
		Physics 5 Lab., Sec. 2				
		Social Service 9 & 10	A 102			
		Zoology 9 Lab.....				
Chemistry 1 Lab., Sec. c.....		Chemistry 1 Lab., Sec. d.....				
Chemistry 2 Lab.....		Chemistry 3 Lab., Sec. a.....				5.30
Chemistry 3 Lab., Sec. b.....						

SUBJECTS NOT IN THIS TIME TABLE

1939-40

FACULTY OF ARTS AND SCIENCE

The degrees offered in this Faculty are Bachelor of Arts (B.A.), Bachelor of Commerce (B.Com.), and Master of Arts (M.A.).

Courses which do not lead to degrees are offered in Teacher Training and Social Service.

COURSES LEADING TO THE DEGREE OF B.A.

The degree of B.A. is granted with Honours or as a General Course degree. A General Course degree will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations. No distinction is made between General Course and Honours students in the First and Second Years, except as regards prerequisites for later work, but in the Third and Fourth Years there are special requirements for Honours students.

Students holding the degree of B.Com. from this University may proceed to the degree of B.A. in one year by completing 15 additional units of work open to students in their Third and Fourth Years, provided that their additional units are chosen so as to complete the requirements for the B.A. degree.

It is possible to obtain the B.A. and B.Com. degrees concurrently in five years on completion of 75 units chosen so as to cover the requirements for both degrees.

Double courses are offered in Arts and Science and Applied Science leading to the degrees of B.A. and B.A.Sc., B.A. and B.A.Sc. (in Nursing), B.A. and B.S.F., and B.Com. and B.S.F. For the regulations governing these, see Section "Double Courses," at the end of the Calendar.

It is possible to obtain the combined B.A. and B.S.F. degrees in five years on completion of the required units.

Credits obtained at the Summer Session (see "*University Summer Session*") may be combined with Winter Session credits to complete the 60 units required for the degree of B.A. The degree of B.A. will not be granted within three years from Senior Matriculation nor within four years from Junior Matriculation.

The maximum credit for Summer Session work in any one calendar year is 6 units; and the maximum credit for work other than that of the regular Summer and Winter Sessions is 3 units in each academic year, and 15 units in all subsequent to Senior Matriculation or First Year Arts.

No credit will be granted for work done at other universities in the same academic year in which work has been attempted at this University, whether in the Summer Session or in the Winter Session or otherwise. Extra-mural work done at other universities prior to registration at this University may be accepted, if approved by the Faculty, but may not exceed 3 units in respect of any one

academic year or 15 units in all subsequent to Senior Matriculation. If a student is granted credit for extra-mural work taken elsewhere, the number of units which he may take at this University without attendance at a Winter or Summer Session will be correspondingly reduced.

Pending the establishment of a department of Music in the University of British Columbia, six units of undergraduate credit towards a B.A. degree may be granted for music to a student who holds at the time of graduation any one of the following diplomas: Associate of the Toronto Conservatory of Music (A.T.C.M.), Licentiate of McGill Conservatorium (L.Mus.), Licentiate of the Royal Schools of Music, London (L.R.S.M.), Licentiate of Trinity College of Music, London (L.T.C.L.), or an equivalent diploma or certificate from other schools of Music which may be accepted by the University of British Columbia. If the student's work in music is done concurrently with the usual University work of the Third and Fourth Years, the credit will be assigned in the Fourth Year; if a student enters Third Year University having already acquired the diploma, the credits will normally be assigned evenly between the Third and Fourth Years. No credits for music will be granted in the First and Second Years and no student may get credit for music until the other requirements for the B.A. degree have been satisfied.

Candidates for the degree of B.A. are advised to attend at least one Winter Session, preferably that of the Fourth Year.

Courses are described in terms of units. A unit normally consists of one lecture hour (or one continuous laboratory period of not less than two or more than three hours) each week throughout the session, or two lecture hours (or equivalent laboratory periods) throughout a single term.

NOTE 1. Students in any of the affiliated Theological Colleges who file with the Registrar a written statement expressing their intention of graduating in Theology will be allowed to offer in each year of their Arts course, in place of optional subjects set down in the Calendar for the year and the course in which they are registered, Religious Knowledge options, to the extent of three units taken from the following list: Hebrew, Biblical Literature, New Testament Greek, Church History, Christian Ethics, and Apologetics.

NOTE 2. Students intending to enter Normal School are advised to consult *Regulations for Admission to Normal Schools*, issued by the Department of Education, Victoria.

First and Second Years

1. The requirements of the first two years consist of 30 units, 15 of which must be taken in each year. Courses must be chosen in

conformity with the requirements that follow. Details of courses are given under the various departments.

*Each student must take:	Units
(a) English 1 in the First Year and English 2 in the Second Year	6
†(b) The first two courses in a language offered for matriculation, one course in each year	6
(c) Mathematics 1, in the First Year	3
(d) Economics 1 or 2, or History 1, 2, 3, or 4, or Social Science 1, or Psychology A or 1, or Philosophy 1	3
(e) Biology 1, or Chemistry A or Chemistry 1, or Geology 1, or Physics A, or Physics 1, or Physics 2, or General Forest Botany (General Dendrology)	3
(f) Three courses—not already chosen—selected from the following: Bacteriology 1, Biology 1, Botany 1, Chemistry A, Chemistry 1, Chemistry 2, Chemistry 4, Economics 1, Economics 2, Economics 10, French 1, French 2, Geography 1, Geology 1, Geology 2, ‡Beginners' German, German 1, German 2, ‡Beginners' Greek, Greek 1, Greek 2, Greek A (see Calendar, 1935-36)**, Greek 2 (see Calendar, 1936-37)**, History 1, History 2, History 3, History 4, ‡Beginners' Latin, Latin 1, Latin 2 (a), Latin 2 (b), Mathematics 2, Mathematics 3, Mathematics 4, Psychology A, Psychology 1, Philosophy 1, Physics A, Physics 1, Physics 2, Physics 4, Social Science 1, Zoology 1, General Forest Botany (General Dendrology)	9

NOTE. Bacteriology 1, Botany 1, Zoology 1, Geology 1 and 2, Geography 1, Economics 1, Economics 10, History 4, Philosophy 1, and Psychology 1 are not open to First Year students.

History 2 is open to First Year students only if they are preparing for entrance to the Normal School. Geography 1, Geology 1, and Philosophy 1 are normally Third Year subjects, but may be taken by Second Year students (full undergraduate and conditioned).

Geology 1 must be taken in the Second Year by students intending to take the Honours course in Geology.

*For credit that can be given for Senior Matriculation standing, complete or partial, see page 33.

†See Regulation "2".

‡See Regulations "3" and "4".

**These courses are offered only by Victoria College.

General Forest Botany (General Dendrology) and Civil Engineering 2 are required of students intending to take the double degree B.A., B.S.F., except students taking major or Honours in Biology (Forestry option), for whom Botany 1 (*a*) is required.

Chemistry 4 is open to Second Year students providing that the prerequisites have been taken.

2. Students who have not matriculated in German or Greek or Latin may fulfil the language requirements for the degree by taking Beginners' German or Beginners' Greek or Beginners' Latin, to be followed by German 1 and German 2 or Greek 1 and Greek 2 or Latin 1 and Latin 2 to complete 63 units. The extra three units may be taken in any year.

3. No student in his First Year may elect more than one beginners' course in a language, and no beginners' course in a language will count towards a degree unless followed by a second year's work in that language.

4. Except in the case of beginners' courses, no course in a language may be taken by a student who has not offered that language at matriculation. A beginners' course in a language may not be taken for credit by a student who has obtained credit for that language at matriculation.

5. A student taking three languages in the first two years (18 units) may defer the course selected under Section 1 (*e*) to the Third or Fourth Year, and a student taking four science courses (12 units) may defer the course selected under Section 1 (*d*) to the Third or Fourth Year.

NOTE. Students thinking of entering Applied Science are referred to the list of subjects required to be taken by them in First Year Arts and to the regulations in reference to these, given under "Admission" and "General Outline of Courses" in Applied Science. They are advised to attend the noon hour talks on the choice of a profession and on the life and work in vocations likely to appeal to Applied Science graduates.

Third and Fourth Years

The requirements of the Third and Fourth Years consist of 30 units, of which students must take in their Third Year not less than 15 units. The graduation standing is determined by the results of the Third and Fourth Years combined.

General Course Curriculum

1. For the General Course a student must select two major subjects according to either of the following schemes:*

A. A minimum of 9 units in one subject and a minimum of 6 units in another subject, both subjects to be chosen from one of the following groups:

- (1) Bacteriology, Botany, Chemistry, Geology (including Geography), Mathematics, Physics, Zoology.
- (2) Economics, Education (not more than six units and only for those who have completed their Normal Training), English, French, German, Government, Greek, History, Latin, Mathematics, Philosophy (including Psychology), Music (6 units).

Or

B. A minimum of 9 units in each of two subjects to be chosen from the following:

Biology (including Botany and Zoology), Chemistry, Latin, Greek, English, History, Mathematics, French, German, Physics.

Work in the First or Second Year is required in each of the major subjects, except in Education and Music.

In certain cases, however, this requirement may be fulfilled by taking a First or Second Year course in the Third Year (see section 3), but a course thus taken may not count towards the required units for a major.

In addition to the major subjects a minimum of 6 units must be chosen from some other subject or subjects.

2. Details of courses available in the Third and Fourth Years are given under the various departments.

3. Only *two* subjects (6 units) of the First or Second Year courses may be taken in the combined Third and Fourth Years. In a number of these courses extra reading will be required of Third and Fourth Year students.

When two First or Second Year subjects, other than a Beginners' Language or Language 1, are taken in the Third and Fourth Years, not more than one of these subjects may be outside the departments in which the student is doing his major work.

For the purpose of this regulation the following subjects are considered Third and Fourth Year subjects: Philosophy 1, Geography 1, Geology 1, Geology 2, German 2 if preceded by Beginners' German and German 1, Greek 2 if preceded by Beginners' Greek and Greek 1, Latin 2 if preceded by Beginners' Latin and Latin 1, Mathematics 4, Botany 1 or Zoology 1 if both are taken, and

*Those who intend to enter the Teacher Training Course should consult section 3, page 95.

*Chemistry 4; also the subjects under 1 (d) or 1 (e) postponed to the Third or Fourth Year, as provided for under paragraph 5, page 76.

4. No credit will be given for a language course normally taken in the First Year unless it is taken in the Third Year and continued in the Fourth Year.

5. Students in the Third and Fourth Years, with the consent of the departments concerned, may take one or two courses of private reading (each to count not more than 3 units), provided that:

- a. (1) The candidate for a reading course shall have completed his First and Second Years and shall have taken at least 6 units either of Second or Third Year work or of Second and Third Year work in the subject in which the reading course is taken; and
- (2) Shall have made an average of at least Second Class in the 6 units in question.
- b. Both reading courses shall not be chosen in the same subject.
- c. A reading course shall not be taken concurrently with Extra-Sessional or with Summer Session courses except by a student in the Fourth Year.

Credit for a course of private reading is part of the maximum of 15 units which may be taken in addition to the regular work of Winter and Summer Sessions; and no other additional work may be taken in the same academic year.

Honours Curriculum

1. Students whose proposed scheme of work involves Honours courses must obtain the consent of the departments concerned and of the Dean before entering on these courses; and this consent will normally be granted only to those students who have a clear academic record at the end of their Second Year with at least Second Class standing in the subject or subjects of specialization. (Cards of application for admission to Honours courses may be obtained at the Registrar's office.)

2. Certain departments offer Honours courses either alone or in combination with other departments. For Honours in a single department, at least 18 of the requisite 30 units must be taken in the department concerned, and at least 6 outside it. For Honours in combined courses, at least 12 units are required in each of two subjects. Particulars of these courses are given below.

3. Candidates for Honours, with the consent of the department concerned, may offer a special reading course (to count not more than 3 units) in addition to the reading courses offered above under *General Course Curriculum*, section 5.

*See prerequisite for Chemistry 4.

4. All candidates for Honours, at the option of the department or departments concerned, may be required to present a graduating essay embodying the results of some investigation that they have made independently. Credit for the graduating essay will be not less than 3 or more than 6 units. The latest date for receiving graduating essays in the Spring Term shall be the last day of lectures; and the corresponding date for the Autumn Congregation shall be October 1.

5. Candidates for Honours are required to take at the end of their Fourth Year a general examination, oral or written, or both, as the department or departments concerned shall decide. This examination is designed to test the student's knowledge of his chosen subject or subjects as a whole, and is in addition to the ordinary class examinations of the Third and Fourth Years.

6. Honours are of two grades, First Class and Second Class. Students who, in the opinion of the department concerned, have not attained a sufficiently high ranking, may be awarded a General Course degree. If a combined Honours course is taken, First Class Honours will be given only if both the departments concerned agree; and an Honours degree will be withheld if either department refuses a sufficiently high grade.

7. It is hoped to offer the following Honours courses during the session 1939-40. But if it is found impossible to do so, the University reserves the right to refuse new registrations in any of them.

HONOURS COURSES IN SINGLE DEPARTMENTS

Bacteriology

Prerequisites: Chemistry 1 and Biology 1.

Required Courses: Bacteriology 2. Candidates must select the remaining 15 units required in consultation with the Head of the Department.

Biology (Botany Option)

Prerequisites: Biology 1, Chemistry 1, Botany 1.

Chemistry 2 and 3, Physics 1 or 2*, and Zoology 1 are required before completion of the course and should be taken as early as possible.

Required Courses: Botany 3 (a), 4, 5 (a), and 6 (c) or 6 (e).

Optional Courses: Biology 2 and 3; courses in Botany not specifically required; and courses in Zoology. Optional courses should be selected in consultation with the Department.

Biology (Zoology Option)

Prerequisites: Biology 1, Chemistry 1, Zoology 1.

Physics 1 or 2†, Botany 1, and Chemistry 2 and 3 are required

*Or, with the consent of the Department of Botany, Physics A.

†Or, with the consent of the departments concerned, Physics A.

before completion of the course and should be taken as early as possible.

Required Courses: Zoology 2, 3, 5, 6.

Students specializing in entomology may substitute Zoology 9 for one of the required courses given above.

Optional Courses: Zoology 4, 7, 8, 9; courses in Botany; Geology 6. These optional courses should be selected in consultation with the Head of the Department of Zoology.

Biology (Forestry Option)

Prerequisites: First Year, Biology 1; Second Year, Botany 1, Civil Engineering 2; Zoology 1, Physics 1 or 2*, and Chemistry 1, 2, and 3 (to be taken as early as possible).

Required Courses: Botany 3 (*a*), Botany 4, Botany 5 (*a*), 5 (*b*), Botany 6 (*c*) or 6 (*e*), Botany 7, Zoology 4, a thesis; and the following courses which are common to all Third and Fourth Year options leading to a degree in Forestry: General Forestry and Civil Engineering 6, in the Third Year; Forest Economics, in the Fourth Year. Botany 5 (*b*) should be taken in the Third Year.

Other courses to complete the requirements to be arranged in consultation with the heads of the two departments. Agronomy 51 and Botany 6 (*b*) are recommended.

Students completing this course for the B.A. degree may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see Faculty of Applied Science).

Chemistry

Prerequisites: Chemistry 1 and 2, Physics 1, and Mathematics 2.

Course: Candidates are required to complete the following courses: Chemistry 3, 4, 5, 7, 9, and 10.

Classics

Course: Any three of Greek 3, 5, 6, 7; any three of Latin 3, 4, 5, 6; and either Greek 9 or Latin 7.

As proof of ability to write Greek and Latin prose, candidates must attain not less than Second Class standing in Greek 8 and Latin 8. During the candidate's Fourth Year, papers will be set in sight translation, and the candidate is advised to pursue a course of private reading under the supervision of the Department.

There will also be a general paper on antiquities, literature, and history.

Economics

Prerequisites: A reading knowledge of French or German. A paper in translation to be written at the end of the Fourth Year will be required to ensure that this knowledge has been kept up.

Course: Social Science 1, if not already taken (for students matriculating in or after 1937), Economics 2, if not already taken, any 15 further units in the department, to include Economics 4, Economics 9, and Statistics 1, and two from the following group:

Economics 3, 5, 6, 7, 11, Statistics 2, Government 1, Sociology 1.

Also a graduating essay which will count 3 units. (Tutorial instruction will be arranged in connection with the essay.)

Students must pass an oral examination, and, if required, address a general audience on a designated subject.

Attendance at the seminar in Economics is required in the Third and Fourth Years.

For the regulations governing the double course leading to the degrees of B.A. (Economics) and B.S.F., see the section, "Double Courses" at the end of the Calendar.

Economics and Political Science

Prerequisites: A reading knowledge of French or German. A paper in translation to be written at the end of the Fourth Year will be required to ensure that this knowledge has been kept up.

Course: Economics 2, if not already taken, any 15 further units in the department, to include Government 1, Statistics 1, and three from the following group:

Sociology 1, Sociology 2, Government 2, 3, 4, Economics 3, 4, 5, 6, 7, 9, Statistics 2.

Also a graduating essay which will count 3 units. (Tutorial instruction will be arranged in connection with the essay.)

Students must pass an oral examination and, if required, address a general audience on a designated subject.

Attendance at the seminar in Economics is required in the Third and Fourth Years.

For the regulations governing the double course leading to the degrees of B.A. (Economics and Political Science) and B.S.F., see the section, "Double Courses," at the end of the Calendar.

English Language and Literature

Students who intend to take Honours must have the permission of the Department before beginning the course.

Prerequisites: (1) A First Class or high Second Class in English 2. Ordinarily, special work is required of students who intend to take Honours. Such work, if required, is announced at the beginning of the session. (2) A reading knowledge of French or German. The Department may require candidates to write a paper in translation at the end of the Fourth Year.

Course: English 25 (involving an examination on the life, times, and complete works of some major English author), 20, 21 (a) (in the Third Year), 22 (in the Fourth Year), 24 (the seminar, which must be attended in both years, though credit will be given only

for the work of the final year), and a graduating essay which will count 3 units.

Candidates will be required to take the following final Honours examinations on the history of English literature:

1. From the beginning to 1500.
2. From 1500 to 1660.
3. From 1660 to 1780.
4. From 1780 to 1890.

One of these examinations will be oral.

In the award of Honours special importance will be attached to the graduating essay and to the final Honours examinations.

If the candidate's work outside the Department does not include a course in English history, he must take an examination in that subject.

Geology

Prerequisites: Geology 1. If possible, Geology 2 and Geography 4, also, should be taken in the Second Year. Chemistry 1 and if possible Physics 1 should be taken in the First Year, as these are required for Geology 2 and 7 and are of great value in Geology 1. Biology 1 is recommended in the Second Year, as it is prerequisite to Zoology 1, which should be taken in the Third Year as a valuable preparation for Geology 6.

Course: Eighteen units to be chosen from Geology 4, 5, 6, 7, 8, 9, 10, and 23a. If Geology 2 has not been taken in the Second Year it must be taken in the Third Year, as it is prerequisite to Geology 7 and 8.

History

Prerequisites: (1) A First Class or high Second Class average in the History course or courses taken in the First and Second Years. (2) A reading knowledge of French or German.

Students whose standing in Honours History during the Third Year is inadequate may, at the discretion of the Department, be required to discontinue the Honours course.

Course: History 10 and twelve other units which normally must be chosen from courses offered in the Third and Fourth Years plus a graduating essay which will count three units. The seminar (which carries no credit) must be attended in the Third and Fourth years.

An Honours paper will be set at the end of the Fourth Year on the work of the seminar and of the courses studied in the Third and Fourth Years. There will be an oral examination on the field covered in the graduating essay.

French

Course: French 3 (a), 3 (b), 3 (c) in the Third Year.

French 4 (a), 4 (b), 4 (c) in the Fourth Year.

A graduating essay (in French) which will count 3 units.

Latin

Course: Latin 3, 4, 5, 6, and 7, and Greek 9. The candidate must also take Latin 8 in both years, obtaining at least Second Class standing. His general knowledge will be tested by papers on antiquities, literature, and history at the end of the Fourth Year.

Mathematics

Prerequisites: Mathematics 2, Physics 1.

Course: Any 18 units in Mathematics, and Physics 4 and 5. A final Honours examination is required.

Physics

Prerequisites: Mathematics 2, Physics 1, Chemistry 1.

Course: Mathematics 10, 12, 16; Physics 4 and 5, and 15 additional units. Students are advised to take Chemistry 4 and 7, if possible.

COMBINED HONOURS COURSES

(a) Biology (Botany and Zoology) and Bacteriology and Preventive Medicine

Prerequisites: Chemistry 1 and 2; Biology 1; Botany 1 or Zoology 1.

Course: Bacteriology 1, 2, and 5; the required courses for either the Botany option or the Zoology option of the Honours course in Biology.

(b) Biology (Botany and Zoology) and Geology

Prerequisites: Chemistry 1; Biology 1; Geology 1.

Course: Geology 2 and 6; the required courses for either the Botany option or the Zoology option of the Honours course in Biology.

(c) Chemistry and Biology (Botany and Zoology)

Prerequisites: Chemistry 1 and 2; Physics 1 or 2; Biology 1.

Course: Chemistry 3, 4, 5, 7, and 9; the required courses for either the Botany option or the Zoology option of the Honours course in Biology.

(d) Chemistry and Physics

Prerequisites: Chemistry 1; Physics 1; Mathematics 2.

Course: Chemistry 2, 3, 4, 5, and 7; Physics 4, 5, and 8 or 19; and two units from Physics 7, 10, 12, 13, 14. Candidates are advised to take Mathematics 10.

(e) Chemistry and Geology

Prerequisites: Chemistry 1; Physics 1; Geology 1.

Course: Chemistry 2, 3, 4, 5, and 7, and at least 12 units in Geology.

(f) Chemistry and Mathematics

Prerequisites: Chemistry 1; Physics 1 or 2; Mathematics 2.

Course: Chemistry 2, 3, 4, 5, 7, and at least 12 units in Mathematics, including Mathematics 10.

(g) Mathematics and Physics

Prerequisites: Mathematics 2; Physics 1.

Course: Mathematics, at least 12 units, including Mathematics 10, 12, and 16; Physics 4, 5, 8, and six additional units.

(h) Any Two of

Economics or Economics and Political Science, English, French, German, History, Latin, Philosophy.

Economics or Economics and Political Science

Prerequisites: A reading knowledge of French or German. A paper in translation to be written at the end of the Fourth Year will be required to ensure that this knowledge has been kept up.

Economics 2 is not available as an option in Economics to students taking combined Honours courses including either History 16 or History 17.

Course in Economics: Twelve units, including Economics 4, Economics 9, Statistics 1, and Economics 2, if not already taken.

Course in Economics and Political Science: Twelve units, including Government 1, and Economics 2, if not already taken.

English

Students who intend to take Honours must have the permission of the Department before beginning the course.

Prerequisites: (1) A First Class or high Second Class in English 2. Ordinarily, special work is required of students who intend to take Honours. Such work, if required, is announced at the beginning of the session. (2) A reading knowledge of French or German. The Department may require candidates to write a paper in translation at the end of the Fourth Year.

Course: English 20 and 24, and any three of the English courses specified for the Third and Fourth Years. The seminar must be attended during both the final years, but credits which count for the B.A. degree will be given only for the work of the Fourth Year.

Candidates will be required to take the following final Honours examinations on the history of English literature:

1. From 1500 to 1660.
2. From 1660 to 1780.
3. From 1780 to 1890.

In the award of Honours special importance will be attached to these examinations. One of them will be oral.

French

Course: If the graduating essay is written on a French subject, 3 (a) and 3 (c), 4 (a) and 4 (c); otherwise either these courses or 3 (a) and 3 (b), 4 (a) and 4 (b).

Courses 3 (b) and 4 (b) are intended primarily for Honours students and should be taken whenever possible, even if they are not required to make up the minimum number of units.

German

Prerequisites: A First Class or high Second Class in German 2.

Course: German 3 (a), 3 (b), 4 (a), and 4 (b) or 5 (a).

In addition, a comprehensive examination in the history of German literature.

History

Prerequisites: (1) First Class or high Second Class average in the History course or courses taken in the First and Second Years, including Social Science, if taken. (2) A reading knowledge of French or German.

Students whose standing in Honours History during the Third Year is inadequate may, at the discretion of the Department, be required to discontinue the Honours course.

Course: History 10 and any nine additional units, of which the graduating essay, if written in History, will count three units. The seminar (which carries no credit) must be attended in the Third and Fourth Years.

An Honours paper will be set at the end of the Fourth Year on the work of the seminar and of the courses studied in the Third and Fourth Years. There will be an oral examination on the field covered by the graduating essay.

Latin

Course: Latin 8 and any four of 3, 4, 5, 6, 7. In the final year candidates must pass an examination (a) in sight translation, and (b) in Latin literature, history, and antiquities. Private reading under the direction of the Department is recommended.

Philosophy and Psychology

Course: Any 12 units besides Philosophy 1, six units in each year.

COURSE LEADING TO THE DEGREE OF B.Com.

The degree of B.Com. is granted with Honours or as a General Course degree. A General Course degree will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations.

It is also possible to obtain the B.A. and B.Com. degrees concurrently in five years on completion of 75 units chosen so as to cover the requirements for both degrees.

No distinction is made between General Course and Honours students in the First and Second Years; but a student will not be accepted as a candidate for Honours in the Third Year unless he has obtained an average of Second Class on the courses required to be taken in the Second Year.

While the B.A. degree may be completed in one year by students holding the B.Com. degree, the converse is not true, as work in two consecutive years is required for the B.Com. degree in both Accountancy and Commercial Law. It is possible, however, for students who are taking the combined degrees in five years to qualify for the B.A. degree at the end of four years by taking additional courses either in Winter or Summer Session to make up for the six units of Accountancy and Commercial Law 1 which do not count towards the B.A. degree.

Options in Forestry have been added in the Second, Third, and Fourth Years of the B.Com. course for the benefit of students who look forward to work with the forest industries. Students who complete the work for the B.Com. degree with these options and take the field work incidental to them may qualify for the degree of B.S.F. by taking the Fifth Year Forestry course in Applied Science.

For the regulations governing the double course leading to the degrees of B.Com. and B.S.F., see the section "Double Courses" at the end of the Calendar.

The regulations as to Summer Session credits, number of units to be taken in any academic year, etc., apply to courses leading to the degree of B.Com. in the same way as to courses leading to the degree of B.A.

During the summer vacations students are advised to obtain as much business experience as possible.

First Year

The following courses comprising 15 units are required:
English 1.

The first course in a language offered for matriculation (Latin or French or German or Greek).

Mathematics 1.

Economics 2.

One course selected from the following: Biology 1, Chemistry A or 1, Economics 10, Physics A or 1.

Second Year

The following courses comprising 15 units are required:

English 2.

A continuation course in the language taken in the First Year.

Mathematics 2 or 3.

Economics 1 or 2, whichever has not been already taken.

Economics 10 if not already taken.

*General Forest Botany (General Dendrology) and Civil Engineering 2, if Economics 10 has already been taken or, in the case of students entering by Senior Matriculation, if Economics 10 is carried as an extra subject.

A clear academic record at the end of the Second Year will be required of students proceeding to the Third Year.

In view of the importance which rightly attaches to the capacity for adequate and clear expression in writing, regulation 13, on page 101 of the Calendar, will be rigidly enforced at the end of the Second Year, and reasonable legibility in handwriting will be insisted on.

Third and Fourth Years

The requirements of the Third and Fourth Years comprise 30 units, of which students must take, in their Third Year, not less than 15 units. The graduation standing is determined by the results of the Third and Fourth Years combined. Courses must be chosen in conformity with the requirements that follow.

Each student must take:

- (a) An additional course in a language already taken for credit in the first two years, that is French, German, or Latin (to be taken in the Third Year) or an additional course in English. 3 units.
- (b) The following seven courses:
 - Economics 4 (*Money and Banking*).
 - Economics 6 (*Foreign Trade*).
 - Economics 12 (*Statistics 1*).
 - Commerce 1 (*Accountancy 1*).
 - Commerce 4 (*Commercial Law 1*).
 - Commerce 5 (*Commercial Law 2*).
 - Commerce 2 or 3 (*Accountancy 2 or 3*). 21 units.
- (c) One of the following courses:
 - Commerce 6 (*Marketing*).
 - Economics 7 (*Corporation Economics*).
 - Economics 11 (*Transportation*).
 - Economics 13 (*Statistics 2*).
 - Forest Economics 1. 3 units.

*For Double Course students in B.Com. and B.S.F. only.

(d) One course — not already chosen — selected from the following:

Commerce 2 or 3 (*Accountancy 2 or 3*).

Economics 7 (*Corporation Economics*).

Economics 11 (*Transportation*).

Economics 13 (*Statistics 2*).

Government 1.

Government 4.

Economics 5 (*Taxation*).

Mathematics 2 or 3.

Education (3 units).

English (3 units).

Additional course in Latin, French, or German.

Geography 3.

Geology (3 units).

General Forestry.

Mining (3 units).

Agricultural Economics 1.

Biology (3 units).

3 units.

In the Fourth Year satisfactory work must be done in connection with a discussion class of one hour a week.

Honours (B.Com.)

1. Candidates for Honours are required to take Statistics 2 and to present a graduating essay embodying the results of some investigation that they have made independently. Credit for the graduating essay will be 3 units. These requirements take the place of the options offered to General Course students under (c) and (d) above.

2. Candidates for Honours are required at the end of their Fourth Year to take a general examination, oral or written or both. This examination is designed to test the student's knowledge of his chosen subject as a whole and is in addition to the ordinary class examinations of the Third and Fourth Years.

3. Honours are of two grades, First Class and Second Class. First Class Honours will not be given unless the graduating essay is First Class nor will Second Class Honours be given unless the graduating essay is at least Second Class. Students who, in the opinion of the Department, have not attained a sufficiently high ranking for Honours may be awarded a General Course degree.

COURSES LEADING TO THE DEGREE OF M.A.

1. Candidates for the M.A. degree must hold the B.A. degree from this University, or its equivalent. Students, however, who have not more than six units of the undergraduate course to complete will be allowed to take courses counting towards a graduate

degree; but these courses will not be counted as graduate credits until the students have registered as graduate students.

2. A graduate of another university applying for permission to enter as a graduate student is required to submit with his application, on or before September 1, an official statement of his graduation together with a certificate of the standing gained in the several subjects of his course. The Faculty will determine the standing of such a student in this University. The fee for examination of certificates is \$2.00. This fee must accompany the application.

3. Candidates with approved degrees and academic records who proceed to the Master's degree shall be required:

To spend one year in resident graduate study; or

- (a) To do two or more years of private work under the supervision of the University, such work to be equivalent to one year of graduate study; or
- (b) To do one year of private work under University supervision and one term of resident graduate study, the total of such work to be equivalent to one year of resident graduate study.

4. A major, including a thesis, and a minor will be required. In general the minor shall be taken outside the department in which the student is taking his major, but special permission may be given to take both major and minor in the same department, provided the subjects are different and are under different professors. The major or the minor, with the consent of the department or the departments concerned, may be extended to include work in an allied subject.

Both major and minor must be taken in the Faculty of Arts and Science.

Candidates must have their courses approved by the heads of the departments concerned, by the Committee on Graduate Studies, and by the Dean. Special forms of "Application for a Course Leading to the Master's Degree" may be obtained from the Registrar's office.

5. Two typewritten copies of each thesis, on standardized thesis paper, shall be submitted. (See special circular of "Instructions for the Preparation of Masters' Theses.") The latest date for receiving Masters' theses in the Spring Term will be the last day of lectures; and the corresponding date for the Autumn Congregation will be October 1.

6. Application for admission as a graduate student shall be made to the Registrar on or before October 1.

7. The following minimum requirements apply to all departments. For the details of the special requirements of the various department see pages 91-94.

Prerequisites:

For a minor at least six units and for a major at least eight units of courses regularly offered in the Third and Fourth Years.

A standing of at least Second Class must have been obtained in each course.

Students who have not fulfilled the requirements outlined above during their undergraduate course may fulfil them by devoting more than one academic year's study to the M.A. work.

M.A. Courses:

For a minor five or six units and for a major nine or ten units (totalling at least fifteen units) chosen from courses regularly offered in the Third and Fourth Years, or from graduate or reading courses.

At least Second Class standing is required in the work of the major and in the work of the minor.

The thesis shall count from three to six units.

There will be a general examination on the major field.

Examinations may be written or oral or both.

Languages: No candidate shall receive the degree of M.A. who has not satisfied the head of the department in which he is majoring of his ability to read technical articles either in French or in German, except a candidate majoring in certain subjects, where a knowledge of Latin may be accepted in lieu of French or German.

To fulfil the language requirement for the M.A. degree, a candidate who elects a language not taken in his undergraduate work to conform with Calendar regulations, will be required to have, as a basis, French 1 or Beginners' German, as the case may be, or the equivalent of this.

In any case, during the period in which he is preparing for the degree, he will be required to read articles in the accepted language so as to make use of them, either in his course work, or in the preparation of his thesis.

No formal examination will be required at the end of the preparatory period.

8. Philosophy 7 and Psychology 4 will be accepted as prerequisites for a minor in Education, if these subjects have not already been counted as prerequisites towards a major or a minor in Philosophy.

Graduate students who are Assistants, giving not more than four hours a week of tutorial instruction, are permitted to qualify for the M.A. degree after one regular Winter Session of University attendance, provided they have done, in the summer vacation, research work of a nature and extent satisfactory to the head of the department concerned. Such students must be registered as graduate students and must have secured the approval of the head of the department concerned and of the Faculty before entering upon the

research in question. Other graduate students doing tutorial work will not be allowed to come up for final examination in less than two academic years after registration as M.A. students.

The following special requirements are prescribed by different departments.

Bacteriology and Preventive Medicine

Prerequisites:

Minor: A minimum of six units in the Department, among which Bacteriology 2 must be included.

Major: Bacteriology 5, and six additional units in the Department.

M.A. Course:

Minor: A minimum of five units chosen in consultation with the Department.

Major: Thesis, three to six units, and other courses to complete the required units.

Biology (Botany Option)

Prerequisites:

Minor: Biology 1, and six additional units in Botany and Zoology.

Major: Biology 1, Botany 1, and eight additional units, including Zoology 1.

M.A. Course:

Minor: A minimum of five units chosen in consultation with the Department.

Major: Thesis, at least five units, and other courses to complete the required units.

Biology (Zoology Option)

Prerequisites:

Minor: Biology 1, and six additional units in Botany and Zoology.

Major: Biology 1, Zoology 1, and eight additional units, including Botany 1.

M.A. Course:

Minor: A minimum of five units chosen in consultation with the Department.

Major: Thesis, at least five units, and other courses to complete the required number of units.

Chemistry

Prerequisites:

Minor: Six units of work regularly offered in the Third and Fourth Years.

Major: Honours standing in Chemistry.

M.A. Course:

Minor: At least six units of work regularly offered in the Third and Fourth Years.

Major: Nine or ten units in advanced courses in Chemistry, including a thesis.

Economics

Prerequisites:

Minor: A minimum of fifteen units of work in subjects in the Department, or an equivalent. The fifteen units must include Economics 4, Economics 9, and Statistics 1.

Major: Honours in Economics; or in Economics in combination with some other subject; or an equivalent.

Economics and Political Science

Prerequisites:

Minor: A minimum of fifteen units in the Department (or an equivalent), including Government 1.

Major: Honours in Economics and Political Science; or in Economics; or in Economics in combination with some other subject; or an equivalent.

M.A. Course:

All candidates for the Master's degree in this department must attend the Honours seminar.

Education

Prerequisites:

Minor: Six units chosen from the following: Education 10, 11, 12, Philosophy 7, Psychology 4.

Major: Teacher Training Course or its equivalent and Philosophy 7.

M.A. Course:

Minor: (a) With the consent of the head of the department in which the candidate is taking his major, the Teacher Training Course with at least Second Class standing in Education 10, 11, and 12 will be accepted for both the prerequisites and the course; *or*

(b) Any six units chosen from Education 10, 11, 12, 20, 21, 22, 23; Philosophy 7, Psychology 4.

Major: Any three of the graduate courses and a thesis (3 units).

NOTE. The Teacher Training Course may not be counted as a minor if Education is taken as the major.

English

Prerequisites:

Minor: At least nine units of credit for English courses elective in the Third and Fourth Years of the undergraduate curriculum.

Major: At least fifteen units of credit for courses elective in the Third and Fourth Years.

M.A. Course:

Minor: Six units of credit in advanced courses in English not already taken.

Major: (a) Twelve units of credit in advanced courses not already taken, one of which courses must be English 21 (a), or its equivalent, if this has not been previously offered for credit.

(b) A graduating essay which will count as an advanced course involving three units of credit.

(c) Oral examinations on the history of English literature.

(d) A reading knowledge of either French or German. A student who offers both languages will be allowed three units of credit towards the M.A. degree.

French

Prerequisites:

Minor: Six units of work in Third and Fourth Year French.

Major: Twelve units of work in Third and Fourth Year French.

M.A. Course:

Minor: Six units of credit in advanced courses in French not already chosen for undergraduate credit.

Major: At least nine units of credit for advanced courses, which must include:

(a) A thesis in French on a subject approved by the Head of the Department (3 units);

(b) A detailed study of the Mediæval and Renaissance authors listed under French 5 (b);

(c) The study of some special subject not related to the subject matter of the candidate's thesis.

For this purpose candidates are advised to select French 5 (c), *History of French Literary Criticism* (3 units).

NOTE. A sound general knowledge of French literary history is an essential part of a candidate's qualifications for the M.A. degree in French, and none will be recommended for that degree who has not satisfied the Department that he possesses it.

It is further desirable that candidates for this degree acquire a reading knowledge of another foreign language, preferably German.

History

Prerequisites:

Minor: Three courses (nine units) to be chosen from History 10 to 20 inclusive.

Major: Four courses (twelve units) to be chosen from History 10 to 20 inclusive.

M.A. Course:

Minor: Two courses (six units) to be chosen from History 10 to 20 inclusive, or the equivalent in reading courses.

Major: Two related courses (six units) to be chosen from History 10 to 20 inclusive, or the equivalent in reading courses, and a thesis embodying original work to which 3 units of credit are given. All candidates for a major in History who have not already done so must attend the Honours seminar in historical method, and the M.A. seminar, History 23, or submit to an examination on a parallel reading course approved by the Department.

Mathematics

Prerequisites:

Minor: Mathematics 10 and at least two other Honours courses.

Major: Candidates must have completed the Honours course in Mathematics, or its equivalent.

In advanced work a reading knowledge of French and German is desirable.

M.A. Course:

Minor: Six units chosen from the Honours courses and including Mathematics 16.

Major: Any four of the graduate courses and a thesis.

Physics

Prerequisites:

Minor: Physics 4 and 5 and at least two more units of work regularly offered in the Third or Fourth Year.

Major: At least eight units of work regularly offered in the Third and Fourth Years.

M.A. Course:

Minor: Six units of work in advanced courses in Physics not already taken.

Major: (a) At least six units of work in the graduate courses;
(b) A thesis.

TEACHER TRAINING COURSE

Candidates qualifying for the "Academic Certificate" (given by the Provincial Department of Education, Victoria, on the com-

pletion of the Teacher Training Course) take the courses prescribed on pages 132-134.

Registration for the Teacher Training Course is limited to sixty (60). Applications for admission, on forms to be obtained from the Registrar's office, should be made to the Registrar on or before August 15th.

1. REGISTRATION.

Documentary evidence of graduation in Arts and Science, Applied Science, or Agriculture from a recognized university must be submitted to the Registrar by all candidates other than graduates of the University of British Columbia. All correspondence in connection with the Teacher Training Course should be addressed to the Registrar.

2. CERTIFICATES AND STANDING.

At the close of the University session successful candidates in the Teacher Training Course will be recommended to the Faculty of Arts and Science for the University Diploma in Education and to the Provincial Department of Education for the Academic Certificate. Successful candidates will be graded as follows: First Class, an average of 80 per cent. or over; Second Class, 65 to 80 per cent.; Passed, 50 to 65 per cent.

All students registered in the Teacher Training Course at the University are entitled to the privileges accorded to students in the various faculties, and are also subject to the regulations of the University regarding discipline and attendance at lectures.

In the case of students who have completed the Teacher Training Course, First or Second Class standing in each of Education 10, 11, and 12 is accepted as equivalent to a minor for an M.A. degree, subject in each case to the consent of the head of the department in which the student wishes to take his major.

3. PREPARATORY COURSES.

Students who intend to proceed to the Teacher Training Course are required to take Psychology A or 1 as prerequisite to Educational Psychology, and must have fulfilled one of the following:

- (a) They must have obtained at least nine (9) units of credit in each of the corresponding subjects from the academic courses normally offered in the Third and Fourth Years, or in the equivalent courses in the Faculty of Applied Science. [The academic courses referred to above are Biology (including Botany and Zoology), Chemistry, Latin (including Greek), English, History, Mathematics, French, German, Physics.] Candidates offering History may substitute six units of Economics for three units of History, subject to the approval of their courses by the heads of the departments of History and Economics. Two courses at least in High School

Methods are required, but students are advised to attend a third course;

- (b) They must have completed an Honours course in any one or two of the subjects listed above;
- (c) They must have completed the Course for High School Teachers of Science;
- (d) They must have obtained at least nine (9) units of credit in Agriculture in addition to Agriculture 1 and 2, and at least nine (9) units of credit in any one of the following subjects: Chemistry, Physics or Biology (including Botany and Zoology) in addition to Chemistry 1, Physics 1, and Biology 1. Furthermore, students planning to enter the Teacher Training Course through Agriculture are required to select undergraduate courses in such a way that, in addition to English 1 and 2, they will have obtained either six units of credit in one, or three units of credit in each of two, of the following: English, Mathematics, Matriculation Language, Social Sciences (History, Economics, Political Science, and Sociology).

A description of the courses offered is given under the Department of Education.

Course for High School Teachers of Science

The following course has been designed especially for high school teachers of science:

<i>First and Second Years:</i>	Units
1. English 1 and 2.	6
2. Language 1 and 2.	6
3. Mathematics 1 and 2.	6
4. Biology 1, Chemistry 1, and Physics 1.	9
5. A second course in one of the sciences named in 4.	3
	—30
<i>Third and Fourth Years:</i>	
6. Three courses in the science taken under 5.	9
7. One course in each of the sciences named in 4 and not taken under 5 and 6, to be followed by a general course in each of these two sciences, namely, two of Biology 4, Chemistry B, and Physics 3.	12
8. Psychology A or 1.	3
9. Two electives from Third and Fourth Year subjects.	6
	—30
	—
Total	60

German may be taken under the language option in 2, with 63 units for graduation, if Beginners' German is taken in the First Year.

Candidates will be admitted to the Teacher Training Course, however, who have Honours in Biology, Chemistry, or Physics, or who have to their credit 9 units of Third and Fourth Year courses in any two of these sciences.

Course for High School Teachers of Health

Students who are preparing to teach Health are recommended to take the Course for High School Teachers of Science and to select as the options under 9, Bacteriology 1 and Bacteriology 2. (Regulation 3, page 77, will be waived for this purpose.) They should also take Nursing 16 in their Teacher Training Course.

Course for High School Teachers of Physical Education

Students who wish to prepare for teaching Physical Education should take in their undergraduate years a minimum programme of five courses in Physical Education, three of which should be selected as follows:

Men: (a) Tumbling and Apparatus;

(b) Physical Education Activities (Boxing, Wrestling, etc.);

(c) Games.

Women: (a) Gymnastics and Tumbling;

(b) Rhythmics and Dancing;

(c) Games.

The remaining two courses should consist of an advanced course in each of two of the above fields.

Each course is organized on the basis of two hours a week per term. No academic credit towards a degree is assigned to these courses, and they must be taken in addition to the regular work of the year.

COURSE LEADING TO THE SOCIAL SERVICE DIPLOMA

A student must be a university graduate or be of the full age of twenty-one years for admission to the Social Service Course.

The Diploma in Social Service will be granted on the completion of courses amounting to 45 units chosen in conformity with the following outline:

First Year:

Biology 1 (<i>Introductory Biology</i>)	3 units.
Economics 1 (<i>General Economics</i>)	3 units.
English 1 (<i>Literature and Composition</i>)	3 units.
Mathematics 1 (<i>Introductory Mathematics</i>)	3 units.

The first course in a language offered for matriculation
(Latin or French or German or Greek) 3 units.

NOTE. Chemistry A or 1 or Physics A or 1 may be substituted for Biology 1 by permission of Faculty.

Second Year:

Psychology A or 1 (<i>Elementary Psychology</i>)	3 units.
Sociology 1 (<i>Introduction to Sociology</i>)	3 units.
Nursing 27 (<i>The Family</i>)	1 unit.
Social Service 1 (<i>Introductory and Historical</i>)	2 units.
Social Service 2 (<i>Case Work</i>)	1 unit.
Social Service 3 (<i>Child Welfare</i>)	1 unit.
Social Service 7 (<i>Group Work</i>)	1 unit.
Social Service 4, 8 (<i>Hygiene and Public Health</i>)	2 units.
Social Service 9 (<i>Field Work Seminar</i>)	1 unit.

Third Year:

Psychology 4 (<i>Child Psychology</i>)	3 units.
Economics 3 (<i>Labour Problems</i>) or Sociology 3 (<i>Urban Community</i>)	3 units.
Nursing B5 (<i>Mental Hygiene</i>)	1 unit.
*Social Service 5 (<i>Advanced Case Work</i>)	2 units.
*Social Service 6 (<i>Advanced Child Welfare</i>)	1 unit.
Social Service 10 (<i>Field Work Seminar</i>)	2 units.
Social Service 11 (<i>Administration</i>)	1 unit.
Social Service 12 (<i>Social Legislation</i>)	1 unit.
Social Service 13 (<i>Public Welfare Seminar</i>)	1 unit.

NOTE. Three other units selected from the Social Sciences may be substituted for Economics 3 by permission of Faculty.

Undergraduates contemplating social work as a profession are advised to select in undergraduate courses not less than 15 units in Psychology and Sociology.

Students registered in the Combined Course in Nursing who have completed the third and fourth year of professional work will be granted the Social Service Diploma in one Winter Session and the succeeding Summer Session on the completion of the following courses:

Social Service 1 to 13 inclusive	16 units.
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Mature persons with some experience in social work may (subject to the approval of the Department of Economics) take individual courses as partial students, but are not eligible for the Diploma unless they have satisfied matriculation requirements.

A minimum of eight hours' field work each week for four terms is required. A student must, in addition, spend two months with an accredited social agency as a full-time worker under supervision prior to registration for the technical courses of the Third Year.

*These courses will be given in the Summer Session of 1939.

Students are required to obtain a passing mark in their field work as well as in lecture work and students whose field work is unsatisfactory may be required to discontinue it at any time. The agency is not responsible for expenses (such as carfare) incident to the field work.

Graduates in Arts and Science who have some experience in social work, and who have taken as part of their undergraduate courses a sufficient number of the subjects required for the Diploma in Social Service to enable them to devote additional time to field work, may be allowed to obtain the Diploma in one Winter Session and the succeeding Summer Session.

PRE-MEDICAL COURSES

Candidates who plan to enter Medicine at other universities can be exempted from one year of their course in Medicine by spending two years at the University of British Columbia and selecting their courses properly. The following outline for the First and Second Years will fulfil the minimum requirements for admission to most of the Canadian medical schools.

First Year:

English 1, Modern Language 1, Mathematics 1, Physics 1, Chemistry 1, Biology 1. 18 units.

Second Year:

English 2, Modern Language 2, Physics 2, Chemistry 2, 3; Zoology 1. 18 units.

As most of the Canadian medical schools are overcrowded and as each school gives preference to applicants from the province in which the school is situated, applicants from British Columbia have no assurance that they will be accepted for medical courses even when they have fulfilled the minimum requirements for admission. They are therefore strongly advised to complete the work for their B.A. degree before seeking admission to a medical school. Some medical schools wish the course for the B.A. degree to be as broad as possible so as to include several courses in the humanities while others prefer Honours courses in the sciences.

EXAMINATIONS AND ADVANCEMENT

1. Examinations in all subjects, obligatory for all students, are held in April. Examinations in December are obligatory in all First and Second Year courses, and in all Third and Fourth Year courses except where exemption has been granted by Faculty. Applications for special consideration on account of illness or domestic affliction must be submitted to the Dean not later than two days after the close of the examination period. In cases where illness is the plea for absence from examinations, a medical certificate must be pre-

sented on the appropriate form which may be obtained from the Dean's office.

2. In any course which involves both laboratory work and written examinations, students may be debarred from examinations if they fail to present satisfactory results in laboratory work, and they will be required to pass in both parts of the course.

3. Successful candidates will be graded as follows: First Class, an average of 80 per cent. or over; Second Class, 65 to 80 per cent.; Passed, 50 to 65 per cent.

4. A student who makes 50 per cent. of the total required for a full year's work (at least 15 units chosen in conformity with Calendar regulations) but who fails in an individual subject will be granted a supplemental examination in that subject if he has not fallen below 30 per cent. in that subject. If his mark is below 30 per cent. a supplemental examination will not be granted. Notice will be sent to all students to whom supplemental examinations have been granted.

A student who makes less than 50 per cent. of the total required for a full year's work (15 units) will not be allowed a supplemental examination.

5. A request for the re-reading of an answer paper must be forwarded to the Registrar **WITHIN FOUR WEEKS** after the results of the examinations are announced. Each applicant must state clearly his reasons for making such a request in view of the fact that the paper of a candidate who makes less than a passing mark in a subject is read at least a second time before results are tabulated and announced. A re-reading of an examination paper will be granted only with the consent of the head of the department concerned. The fee for re-reading a paper is \$2.00.

6. Supplemental examinations will be held in September in respect of Winter Session examinations, and in June or July in respect of Summer Session examinations. In the Teacher Training Course, supplemental examinations will be held not earlier than the third week in June.

In the first three years a candidate who has been granted a supplemental may try the supplemental only once. If he fails in the supplemental, he must either repeat his attendance in the course or substitute an alternative chosen in accordance with Calendar regulations. In the case of Fourth Year students two supplemental examinations in respect of the same course will be allowed.

A candidate with a supplemental examination outstanding in any subject which is on the Summer Session curriculum may clear his record by attending the Summer Session course in the subject and passing the required examinations.

7. Applications for supplemental examinations, accompanied by the necessary fees (see Schedule of Fees), must be in the hands of the Registrar by August 15.

8. No student may enter a higher year with standing defective in respect of more than 3 units. (See regulations in regard to advancement to Third Year Commerce, page 87, and in reference to admission to Second Year Applied Science, page 76.

No student who has failures or supplementals outstanding in more than 3 units, or who has any failure or supplemental outstanding for more than a year of registered attendance, shall be allowed to register for more than 15 units of work, these units to include either the subject (or subjects) in which he is conditioned or permissible substitutes. But a student in the Fourth Year will be permitted to register for 15 units of work in the Fourth Year, even though he may have failures or supplementals outstanding against him, providing that these failures or supplementals do not carry more than three units of credit and that they do not involve the repetition of a course. Such a student will not be permitted to complete his examinations until September.

9. A student may not continue in a later year any subject in which he has a supplemental examination outstanding from an earlier year, except in the case of compulsory subjects in the Second Year.

10. A student who is not allowed to proceed to a higher year may not register as a partial student in respect of the subjects of that higher year. But a student who is required to repeat his year will be exempt from attending lectures and passing examinations in subjects in which he has already made at least 50 per cent. In this case he may take, in addition to the subjects of the year which he is repeating, certain subjects of the following year.

11. A student who fails twice in the work of the same year may, upon the recommendation of the Faculty, be required by the Senate to withdraw from the University.

12. Any student whose academic record, as determined by the tests and examinations of the first term of the First or Second Year, is found to be unsatisfactory, may, upon the recommendation of the Faculty, be required by the Senate to discontinue attendance at the University for the remainder of the session. Such a student will not be readmitted to the University as long as any supplemental examinations are outstanding.

13. Term essays and examination papers will be refused a passing mark if they are deficient in English; and, in this event, students will be required to pass a special examination in English to be set by the Department of English.

DEPARTMENTS IN ARTS AND SCIENCE

Department of Bacteriology and Preventive Medicine

Professor: C. E. Dolman.

Assistant Professor: D. C. B. Duff.

Assistant Professor: Lawrence E. Ranta.

Assistant: D. Gordon B. Mathias.

1. *Introductory Bacteriology*.—A course consisting of lectures, demonstrations, and laboratory work.

The history of bacteriology, the place of bacteria in nature, the classification of bacterial forms, methods of culture and isolation, the relation of bacteria to agriculture, to industrial processes, to household and veterinary science, and to public health and sanitation.

References: Henrici, *Biology of Bacteria*, latest edition, Heath; Lutman, *Microbiology*, latest edition, McGraw-Hill.

Prerequisites: Chemistry 1 and Biology 1, the latter of which may be taken concurrently.

One lecture and four hours laboratory a week. 3 units.

Lectures: Tuesday, at 9.30.

Laboratory: Section 1, 1.30-3.30, Tuesday and Thursday; Section 2, 10.30-12.30 Tuesday, 9.30-11.30 Thursday.

2. *Immunology*.—A course consisting of lectures, demonstrations, and laboratory work.

The protective reactions of the animal body against pathogenic micro-organisms; cellular and humoral immunity. The course will include demonstrations of immunity, and of various diagnostic methods used in public health laboratories.

References: Park, Williams & Krumwiede, *Pathogenic Micro-organisms*, latest edition, Lea & Febiger; Topley & Wilson, *Principles of Bacteriology and Immunity*, latest edition, Wood; Wadsworth, *Standard Methods*, latest edition, Williams & Wilkins.

Prerequisite: Bacteriology 1.

One lecture and four hours laboratory a week. 3 units.

Lectures: To be arranged.

Laboratory: 3.30-5.30, Tuesday and Thursday.

3. *Bacteriology in Relation to Health and Disease*.—A special course for Combined Course Nursing students only, consisting of lectures, demonstrations, and laboratory work.

Methods of isolation, culture, and identification of pathogenic micro-organisms; aseptic technique; disinfection and antisepsis; infection and resistance; active immunization procedures; bacteriology in relation to public health.

References: Henrici, *Biology of Bacteria*, latest edition, Heath; Broadhurst & Given, *Bacteriology Applied to Nursing*, latest edition, Lippincott.

Prerequisites: As for Bacteriology 1.

One lecture and four hours laboratory a week. 3 units.

Lectures: 2.30-3.30, Monday.

Laboratory: 3.30-5.30, Monday and Friday.

4. *Dairy Bacteriology.*

(a) The bacteriology of milk; sources of bacteria in milk, and quantitative and qualitative determinations of the bacterial content of milk; normal and abnormal fermentations of milk and a study of certain organisms responsible therefor.

References: Orla-Jensen, *Dairy Bacteriology*, latest edition, Churchill; Hammer, *Dairy Bacteriology*, latest edition, Wiley.

Prerequisite: Bacteriology 1.

Four hours a week. First Term. 1½ units.

(This course is the same as Dairying 4 (a), and is given by the Department of Dairying.)

(b) The physical and chemical properties of milk and their influence on the growth of bacteria in milk and in milk products; the handling and management of milk for city consumption; grading of milk and milk products on bacterial standards.

Reference: Rogers, *Fundamentals of Dairy Science*, latest edition, A. C. S. Monograph.

Prerequisite: Bacteriology 1.

Four hours a week. Second Term. 1½ units.

(This course is the same as Dairying 4 (b), and is given by the Department of Dairying.)

5. *Advanced Bacteriology and Immunology.*—A course of lectures, demonstrations, and laboratory work, on the antigenic structure of bacteria; serological reactions; theories of susceptibility and immunity; sensitization; preparation and assay of bacterial toxins, toxoids, and antitoxins.

References: Topley, *Outline of Immunity*, 1933 edition, Arnold; *A System of Bacteriology*, latest edition, Medical Research Council, H. M. Stationery Office.

Prerequisites: Bacteriology 1 and 2, with at least Second Class standing in both courses.

Four hours a week. 3 units.

Lectures: 1.30-2.30, Monday.

Laboratory: 2.30-5.30, Monday.

This course must be taken by all students working for nine or more units credit in the Department.

6. *Soil Bacteriology.*—A laboratory and lecture course, in which the bacteria of soils are studied qualitatively and quantitatively, with special reference to soil fertility.

Reference: Waksman, *Principles of Soil Microbiology*, latest edition.

Prerequisite: Bacteriology 1.

Five hours a week.

3 units.

(This course is the same as Agronomy 20, and is given by the Department of Agronomy.)

7. *Advanced Dairy Bacteriology*.—The ripening of hard-pressed cheese and a systematic study of the lactic acid bacteria.

Reference: Orla-Jensen, *The Lactic Acid Bacteria*, Copenhagen.

Prerequisites: Bacteriology 1 and 4 (a).

One lecture and two laboratories per week.

3 units.

(This course is the same as Dairying 7, and is given by the Department of Dairying.)

8. *Reading Course in Bacteriology*.—A directed reading course in some advanced problem within the scope of bacteriology and preventive medicine. No class instruction will be given, but regular meetings will be held for critical discussion, and there will be an examination, either written or oral.

3 units.

Prerequisites: Bacteriology 1 and 2; also one of Bacteriology 5, 9, or 10, with which this course may run concurrently.

9. *Microbiological Physiology*.—Lectures and laboratory work on bacteria, yeasts, and moulds, and their application to medical, sanitation, and industrial problems; study of growth phases, growth rates, and rates of metabolic activity under defined conditions; use of mathematical methods in planning investigations, and in expressing and evaluating results.

Reference: Stephenson, *Bacterial Metabolism*, latest edition, Longmans.

Prerequisites: Bacteriology 1 and 2 with at least Second Class standing in both courses; also Bacteriology 5, which may be taken concurrently.

Five hours a week. First Term.

1½ units.

Lectures: 10.30-11.30, Wednesday.

Laboratory: 1.30-5.30, Wednesday.

10. *Pathology of Infection*.—A course of lectures, laboratory work, and demonstrations. Stages in the development of infections in the animal body, illustrated by post-mortem specimens, and by microscopic sections; modes of conveyance of communicable infections, considered in relation to the prevention of disease; the history, techniques, and objectives of preventive medicine.

References: MacCallum, *A Text-book of Pathology*, 1936, Saunders; Gay, *Agents of Disease and Host Resistance*, 1935, Thomas.

Prerequisites: Bacteriology 1 and 2 with at least Second Class standing in both courses; also Bacteriology 5, which may be taken concurrently.

Five hours a week. Second Term.

1½ units.

Lectures: 10.30-11.30, Wednesday.

Laboratory: 1.30-5.30, Wednesday.

11. *Methodology of Bacteriological Research.*—A course of lectures, seminars, and discussion periods designed to equip the student preparing for Honours in the Department with a critical appreciation of historic reports and current literature in the field of bacteriology and preventive medicine; the technique of planning experiments for a given research problem; the design of protocols, and the general presentation of results. 3 units.

This course to be taken in their Third Year by Honours course students.

Prerequisites: Bacteriology 1 with at least Second Class standing, and Bacteriology 2, with which this course may be taken concurrently.

Department of Botany

Professor: A. H. Hutchinson.

Associate Professor: Frank Dickson.

Associate Professor: John Davidson.

Assistant Professor: John Allardyce.

Instructor: E. Miriam R. Ashton.

Biology

1. *Introductory Biology.*—The course is introductory to more advanced work in Botany or Zoology; also to courses closely related to biological science, such as Agriculture, Forestry, Medicine.

The fundamental principles of biology; the interrelation of plants and animals; life processes; the cell and division of labour; life-histories; relation to environment.

The course is prerequisite to all courses in Botany and Zoology.

A list of reference books is supplied.

Two lectures and two hours laboratory a week.

3 units.

Lectures: Section A, 9.30-10.30, Monday and Wednesday;

Section B, 10.30-11.30, Monday and Wednesday;

Laboratory: Section 1, 1.30-3.30, Tuesday;

Section 2, 3.30-5.30, Tuesday;

Section 3, 1.30-3.30, Thursday;

Section 4, 3.30-5.30, Thursday;

Section 5, 1.30-3.30, Friday;

Section 6, 3.30-5.30, Friday.

2. (a) *Principles of Genetics.*—The fundamentals of genetics illustrated by the race histories of certain plants and animals; the

physical basis of heredity; variations; mutations; acquired characters; Mendel's law with suggested applications.

Text-book: Castle, *Genetics and Eugenics*, Harvard.

Prerequisite: Biology 1.

Two lectures and one laboratory period a week. First Term. $1\frac{1}{2}$ units.

Lectures: 8.30-9.30, Monday and Wednesday.

Laboratory: 8.30-10.30, Friday, and one hour to be arranged.

2. (b) *Principles of Genetics*.—A continuation of the studies of genetic principles with suggested applications. A lecture and laboratory course. The laboratory work will consist of problems, examination of illustrative material, and experiments with *drosophila*.

Text-book: Sinnott and Dunn, *Principles of Genetics*, McGraw-Hill.

Prerequisite: Biology 2 (a).

One lecture and four hours laboratory a week. Second Term. $1\frac{1}{2}$ units.

Lectures: 8.30-9.30, Monday.

Laboratory: 8.30-10.30, Wednesday and Friday.

2. (c) An introduction to genetical methods.

Prerequisite: Biology 2 (a) and 2 (b).

One lecture and two hours laboratory a week. 2 units.

2. (d) A review of advanced phases and the more recent developments in genetics.

Prerequisite: Biology 2 (b).

Two hours a week. First Term. 1 unit.

Lectures: 9.30-10.30, Tuesday and Thursday.

3. *General Physiology*.—A study of animal and plant life processes. Open to students of Third and Fourth Years having prerequisite Biology, Chemistry, and Physics; the Department should be consulted.

Text-book: Bayliss, *Principles of General Physiology*, Longmans; or Mitchell, *General Physiology*, McGraw-Hill.

Two lectures and three hours laboratory a week. Reference reading. 3 units.

Lectures: 8.30-9.30, Monday and Wednesday.

Laboratory: 2.30-5.30, Friday.

4. *General Biology*.—A course primarily for students who intend to teach science in the high schools and whose major is not Biology. (See statement under the Teacher Training Course). A review of the modern approaches to the morphology, histology, physiology, and ecology of animals and plants, with applications to man.

A list of reference books is supplied.

Prerequisite: Biology 1.

Two lectures and two hours laboratory a week. 3 units.

Lectures: 11.30-12.30, Monday and Wednesday.

Laboratory: 3.30-5.30, Thursday.

Botany

1. (a) *General Botany*.—A course including a general survey of the several fields of botany and introductory to more specialized courses in botany.

This course is prerequisite to all other courses in Botany, except the Evening Course and Botany 1 (b). Partial credit (2 units) toward Botany 1 may be obtained through the Evening Course.

Text-book: Holman and Robbins, *General Botany*, Wiley; or Hill, Overholtz, Popp, *Botany*, McGraw-Hill.

Prerequisite: Biology 1.

Two lectures and two hours laboratory a week. 3 units.

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Monday.

1. (b) *General Forest Botany (General Dendrology)*.—An introductory course open only to Forestry students, and including the study of tree characteristics, identification, structure, nutrition, and ecology.

This course is the first of a series of courses, optional for Arts students in Economics, Commerce, and Biology proceeding to Forestry; these courses are prerequisite to the Fifth Year in Forestry.

Text-book: Büsgen and Münch, *Structure and Life of Forest Trees*, Wiley.

Biology 1 is recommended as a preceding course.

Two lectures and two hours laboratory a week. 3 units.

1. (c) *General Forestry*.—Silvics and a general survey of forest distribution, influences, protection, and utilization.

Text-book: Moon and Brown, *Elements of Forestry*, 3rd edition, Wiley.

Prerequisite: Botany 1 (b) or equivalent.

Three lectures a week. 3 units.

2. (a) *Morphology*.—A comparative study of plant structures; the relation of plant groups; comparative life histories. Emphasis is placed upon the increasing complexity of plant structures, from the lower to the higher forms, involving a progressive differentiation accompanied by an interdependence of parts.

Text-book: Coulter, Barnes & Cowles, *Text-book of Botany*, Vol. I, University of Chicago.

Prerequisite: Botany 1.

Two lectures and four hours laboratory a week. First Term.

2 units.

(Not given in 1939-40.)

2. (b) *The Algae*.—A course dealing with the morphology, taxonomy, and specific physiology of the *algae*, with a discussion of

evolution within the group; practical acquaintance with the fresh water and marine forms, their identification and habitats, and with methods of collection and preservation.

References: Smith, *Freshwater Algae of the United States*, 1933, McGraw-Hill; Fritsch, *The Structure and Reproduction of the Algae*, Vol. I, 1935, Macmillan; Tilden, *The Algae and Their Life Relations*, 1935, The University of Minnesota.

Prerequisite: Botany 1.

Two lectures and four hours laboratory a week. Second Term.

2 units.

3. *Plant Physiology.*

(a) A course dealing with the fundamental life processes in plants, such as nutrition, photosynthesis, absorption, permeability, respiration, transpiration, and growth. This course is prerequisite for Botany 3 (b) and 3 (c).

Text-book: Raber, *Principles of Plant Physiology*, 1929, Macmillan.

Prerequisite: Botany 1.

Two lectures and four hours laboratory a week. First Term.

2 units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-3.30, Monday and Wednesday.

(b) This course comprises a more advanced study of the organic constituents of plants and the physiological changes occurring during plant growth. (Same as Horticulture 41.)

Prerequisite: Botany 3 (a).

Two lectures and four hours laboratory a week. First Term.

2 units.

(c) An advanced course to supplement 3 (a) and designed to train students of the plant sciences in an understanding of the interrelation of plants and soils. (Same as Horticulture 42.)

Prerequisite: Botany 3 (a).

Two lectures and four hours laboratory a week. Second Term.

2 units.

4. *Histology.*—A study of the structure and development of plants; methods of killing, fixing, embedding, sectioning, staining, mounting, drawing, reconstruction; use of microscope, camera lucida, photo-micrographic apparatus.

Text-books: Eames and McDaniels, *Introduction to Plant Anatomy*, McGraw-Hill; Chamberlain, *Methods in Plant Histology*, University of Chicago.

Prerequisite: Botany 1.

Seven hours a week. Second Term.

2 units.

Lectures: 8.30-9.30, Tuesday.

Laboratory: 1.30-4.30, Monday and Wednesday.

5. *Systematic Botany.*

(a) *Economic Flora*.—An introduction to the classification of plants through a study of selected families of economic plants of British Columbia; plants useful for food, fodder, medicine, and industrial arts; plants harmful to crops and stock; weeds and poisonous plants; methods of control.

Prerequisite: Botany 1.

Text-books: Jepson, *Economic Plants of California*, University of California; Thompson & Sifton, *Poisonous Plants and Weed Seeds*, University of Toronto.

Two lectures and two hours laboratory a week. First Term.

1½ units.

Lectures: 9.30-10.30, Monday and Wednesday.

Laboratory: 1.30-3.30, Monday.

(b) *Dendrology*.—A study of the forest trees of Canada, the common shrubs of British Columbia, the important trees of the United States which are not native to Canada; emphasis on the species of economic importance; identification, distribution, relative importance, construction of keys.

Prerequisite: Botany 1.

Text-books: Morton & Lewis, *Native Trees of Canada*, Dominion Forestry Branch, Ottawa; Sudworth, *Forest Trees of the Pacific Slope*, Superintendent of Documents, Washington; Davidson and Abercrombie, *Conifers, Junipers and Yew*, Unwin; Tredlease, *The Woody Plants*, Urbana.

One lecture and one period of two or three hours laboratory or field work a week.

2 units.

Lectures: 9.30-10.30, Friday.

Laboratory: 9.30-12.30, Saturday.

(c) *Descriptive Taxonomy*.—An advanced course dealing with the collection, preparation, and classification of "flowering plants"; methods of field, herbarium, and laboratory work; plant description, the use of floras, preparation of keys, identification of species; systems of classification; nomenclature.

Prerequisite: Botany 5 (a).

Text-books: Hitchcock, *Descriptive Systematic Botany*, Wiley; Henry, *Flora of Southern British Columbia*, Gage.

One lecture and four hours laboratory a week. Second Term.

1½ units.

Lectures: 9.30-10.30, Monday.

Laboratory: 1.30-3.30, Monday and Wednesday.

6. (b) *Forest Pathology*.—Nature, identification, and control of the more important tree-destroying fungi and other plant parasites of the forest.

Text-book: Rankin, *Manual of Tree Diseases*, Macmillan.

One lecture and two hours laboratory a week during one-half of the Second Term. 1/2 unit.

Lectures: 10.30-11.30, Tuesday.

Laboratory: 1.30-3.30, Tuesday.

6. (c) *Plant Pathology (Elementary)*.—A course dealing with basic concepts of plant disease and plant disease control. A number of economically important plant diseases are studied in detail.

Text-book: Heald, *Manual of Plant Diseases*, McGraw-Hill.

Prerequisite: Botany 1.

Two lectures and four hours laboratory a week. Second Term.

2 units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-3.30, Wednesday and Thursday.

6. (d) *Plant Pathology (Advanced)*.—A course designed for Honours or graduate students. Technique, isolation, and culture work; inoculations; details concerning the various stages in the progress of plant diseases; a detailed study of control measures.

Prerequisite: Botany 6 (c).

Two lectures and four hours laboratory a week.

3 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Friday.

6. (e) *Mycology*.—A course designed to give the student a general knowledge of the fungi from a taxonomic point of view.

Text-book: Stevens, *Plant Disease Fungi*, Macmillan.

Prerequisite: Botany 1.

Two lectures and four hours laboratory a week. Credit will be given for a collection of fungi made during the summer preceding the course. First Term.

2 units.

Lectures: 8.30-9.30, Monday and Wednesday.

Laboratory: 1.30-3.30, Tuesday and Thursday.

6. (f) *History of Plant Pathology*.—A lecture course dealing with the history of the science of plant pathology from ancient times to the present.

Text-book: Whetzel, *An Outline of the History of Phytopathology*, Saunders.

Prerequisite: Botany 6 (c).

One lecture a week. Second Term.

1/2 unit.

7. *Plant Ecology*.

(a) *Forest Ecology and Geography*.—The interrelations of forest trees and their environment; the ecological characteristics of important forest trees; forest associations; types and regions; physiography.

References: Weaver and Clements, *Plant Ecology*, McGraw-Hill; Whitford and Craig, *Forests of British Columbia*, Ottawa; Zon and Sparhawk, *Forests of the World*, McGraw-Hill; Hardy, *The Geography of Plants*, Oxford.

Prerequisite: Botany 1.

One lecture and one period of field and practical work a week.
First Term. 1 unit.

Lectures: 1.30-2.30, Thursday.

Laboratory: 2.30-4.30, Thursday.

Evening and Short Courses in Botany

A course in general botany, comprising approximately fifty lectures, is open to all interested in the study of plant life of the Province. No entrance examination and no previous knowledge of the subject is required.

The course is designed to assist teachers, gardeners, foresters, and other lovers of outdoor life in the Province. As far as possible, illustrative material will be selected from the flora of British Columbia.

The classes meet every Tuesday evening during the University session (September-May) from 7.30 to 9.30 p.m. Field or laboratory work, under direction, is regarded as a regular part of the course.

No examination is required except in the case of University students desiring credit for this course. Biology 1 is a prerequisite for such students. This course may be substituted for the lecture part of Botany 1; but credit is not given until the laboratory work is complete.

Other students desiring to ascertain their standing in the class may apply for a written test.

A detailed statement of requirements and of work covered in this course is issued as a separate circular. Copies may be had on request.

Department of Chemistry

Professor: R. H. Clark.

Professor of Analytical Chemistry: E. H. Archibald.

Professor: W. F. Seyer.

Associate Professor: M. J. Marshall.

Associate Professor: William Ure.

Assistant Professor: J. Allen Harris.

A. Introduction to Chemistry.—This course will give a general survey of the field of chemistry for students not intending to specialize in any of the sciences. Laboratory experiments designed to give an insight into scientific methods will be performed.

This course will not be accepted as fulfilling the prerequisite for Chemistry 2, or any subsequent Chemistry course.

References: Deming, *Introductory College Chemistry*, Wiley; McPherson and Henderson, *An Elementary Study of Chemistry*, Ginn.

Two lectures and one laboratory period a week.

3 units.

1. *General Chemistry*.—The course comprises a general survey of the whole field of chemistry and is designed on the one hand to provide a thorough groundwork for further study in the sciences and on the other to give an insight into the methods of chemical investigation, the fundamental theories, and some important applications such as are suitable to the needs of a cultural education. Students must reach the required standard in both lecture and laboratory work.

Text-books: *Smith's College Chemistry*, revised by Kendall, 1935 edition, Century. For the laboratory: Harris and Ure, *Experimental Chemistry for Colleges*, McGraw-Hill.

Three lectures and two and one-half hours laboratory a week.

3 units.

Lectures: Section 1, 10.30-11.30, Monday, Wednesday, Friday;

Section 2, 1.30- 2.30, Monday, Wednesday, Friday;

Section 3, 10.30-11.30, Tuesday, Thursday, Saturday.

Laboratory: 3.30-6, Monday, Tuesday, Thursday, or Friday.

2. *Qualitative and Quantitative Analysis*.

(a) *Qualitative Analysis*.—A study of the chemical reactions of the common metallic and acid radicals, together with the theoretical considerations involved in these reactions.

Text-book: Noyes, *Qualitative Analysis*, Macmillan.

References: Miller, *The Elementary Theory of Qualitative Analysis*, Century; Hammett, *Solutions of Electrolytes*, McGraw-Hill.

One lecture and six hours laboratory a week. First Term.

(b) *Quantitative Analysis*.—This course embraces the more important methods of gravimetric and volumetric analysis.

Text-book: Willard and Furman, *Quantitative Analysis*, Van Nostrand.

Prerequisite: Chemistry 1.

One lecture and six hours laboratory a week. Second Term.

3 units.

Course (b) must be preceded by Course (a).

Lectures: 9.30-10.30, Friday.

Laboratory: 3.30-6, Tuesday and Thursday and 5-6, Wednesday.

B. *General Chemistry for Teachers*.—This course is intended only for those students who plan to teach science in high school. The course will consist of a more advanced study of general chemistry than Chemistry 1, with special emphasis upon topics in the high school curriculum. The laboratory work will include experiments suitable for high school demonstration purposes.

Prerequisites: Chemistry 1 and 2.

NOTE. Students may substitute Chemistry 3 and 4 for this course.

Text-book: Partington, *Inorganic Chemistry*, Macmillan.

Two lectures and one laboratory period a week.

3 units.

3. *Organic Chemistry*.—This introduction to the study of the compounds of carbon will include the methods of preparation and a description of the more important groups of compounds in both the aliphatic and the aromatic series.

Chemistry 3 will be given only to those students taking Chemistry 2, or those who have had the equivalent of Chemistry 2.

References: Holleman-Walker, *Text-book of Organic Chemistry*, Wiley; Richter, *Text-book of Organic Chemistry*, Wiley; Gatterman-Wielands, *Laboratory Methods of Organic Chemistry*, Macmillan.

Two lectures and one laboratory period a week. 3 units.

Lectures: 9.30-10.30, Monday and Wednesday.

Laboratory: 1.30-6, Thursday or Friday.

4. (a) *Theoretical Chemistry*.—An introductory course in the development of modern theoretical chemistry, including a study of gases, liquids, and solids, solutions, ionization and electrical conductivity, chemical equilibrium, kinetics of reactions, thermochemistry and thermodynamics, colloids.

Text-book: Millard, *Physical Chemistry for Colleges*, McGraw-Hill.

Reference: Noyes and Sherrill, *Chemical Principles*, Macmillan.

Laboratory Text-books: Findlay, *Practical Physical Chemistry*, Longmans; Sherrill, *Laboratory Experiments on Physical Chemical Principles*, Macmillan.

Prerequisites: Chemistry 2 (except for students taking Honours in Physics) and Mathematics 2. Honours students majoring in Chemistry should take Mathematics 10 concurrently.

Two lectures and one laboratory period a week. 3 units.

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: 1.30-5, Tuesday or Friday.

4. (b) This course is the same as Chemistry 4 (a) with the omission of the laboratory, and is open only to students not taking Honours in Chemistry. 2 units.

5. *Advanced Qualitative and Quantitative Analysis*.

(a) *Qualitative Analysis*.—The work of this course will include the detection and separation of the less common metals, particularly those that are important industrially.

One lecture and six hours laboratory a week. First Term.

(b) *Quantitative Analysis*.—The determinations made will include the more difficult estimations in the analysis of rocks as well as certain constituents of steel and alloys. The principles on which analytical chemistry is based will receive a more minute consideration than is possible in the elementary course.

Prerequisite: Chemistry 2.

One lecture and six hours laboratory a week. Second Term.

3 units.

Lectures: 1.30-2.30, Monday.

Laboratory: 2.30-5.30, Tuesday and Thursday, or 1.30-4.30, Friday and 8.30-11.30, Saturday.

6. *Industrial Chemistry*.—Those industries which are dependent on the facts and principles of chemistry will be considered in as much detail as time will permit. The lectures will be supplemented by visits to manufacturing establishments in the neighbourhood, and it is hoped that some lectures will be given by specialists in their respective fields.

Prerequisites: Chemistry 2, 3, and 4.

Two lectures a week.

2 units.

7. *Physical Chemistry*.—This course is a continuation of Chemistry 4 and treats in more detail the kinetic theory of gases, properties of liquids and solids, elementary thermodynamics and thermochemistry, properties of solutions, theoretical electrochemistry, chemical equilibrium, kinetics of reactions, radioactivity.

Text-books: Getman, *Outlines of Theoretical Chemistry*, Wiley; Noyes and Sherrill, *Chemical Principles*, Macmillan. References for laboratory: Sherrill, *Laboratory Experiments on Physico-Chemical Principles*, Macmillan; Findlay, *Practical Physical Chemistry*, Longmans.

Prerequisites: Chemistry 2, 3, and 4; Mathematics 10, which may be taken concurrently.

Two lectures and one laboratory period a week.

3 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5, Monday.

8. *Electrochemistry*.—(a) Solutions are studied from the standpoint of the osmotic and dissociation theories. The laws of electrolysis, electroplating, electromotive force, and primary and secondary cells are considered in detail.

Text-books: LeBlanc, *Elements of Electrochemistry*, Macmillan; Creighton-Fink, *Theoretical Electrochemistry*, Vol. I, Wiley; Allmand, *Applied Electrochemistry*, Longmans.

Two lectures and three hours laboratory a week. First Term.

1½ units.

(b) As in Applied Science.

9. *Advanced Organic Chemistry*.—(a) The lectures will deal with some of the more complex carbon compounds, such as the carbohydrates and their stereochemical configurations, fats, proteins, ureides and purine derivatives, and enzyme action.

Two lectures and three hours laboratory a week. First Term.

1½ units.

(b) The terpenes and alkaloids will be considered. The more complicated types of organic reaction and various theoretical conceptions will be presented. In the laboratory some complex com-

pounds will be prepared and quantitative determinations of carbon, hydrogen, nitrogen, sulphur, and the halogens made.

References: Cohen, *Organic Chemistry*, 3rd edition, Arnold; Gilman, *Organic Chemistry*, Wiley.

Prerequisites: Chemistry 2 and 3.

Two lectures and one laboratory period a week. Second Term.

1½ units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-6, Tuesday.

10. *History of Chemistry*.—A general survey of the development of chemical knowledge from the earliest times up to the present day, with particular emphasis on chemical theory.

References: Moore, *History of Chemistry*, McGraw-Hill; Campbell-Brown, *History of Chemistry*, Blakiston's Son.

Two hours a week. Second Term.

1 unit.

Lectures: 8.30-9.30, Monday and Wednesday.

11. *Physical Organic Chemistry*.—Stereochemical theories will be discussed in greater detail than in Chemistry 9, and chemical and physico-chemical methods employed in determining the constitution of organic compounds will be studied. The electronic conception of valency as applied to organic compounds will be considered, and an outline of the work done in electro-organic chemistry will be given.

Prerequisites: Chemistry 7 and 9.

One hour a week.

1 unit.

(Given in 1939-40 and alternate years.)

PRIMARILY FOR GRADUATE STUDENTS

12. *Colloid Chemistry*.—A consideration of the principles which underlie the behaviour of disperse systems and reactions at surfaces, including electro-capillary phenomena, preparation of colloids, Brownian movement, surface tension, adsorption, emulsions, membrane equilibria, and gels.

References: Thomas, *Colloid Chemistry*, McGraw-Hill; Svedberg, *Colloid Chemistry*, Chemical Catalog Co.; Freundlich, *Colloid Chemistry*, Methuen.

Prerequisites: Chemistry 3 and 4.

Two hours a week. First Term.

1 unit.

Lectures: 8.30-9.30, Monday and Wednesday.

17. *Chemical Thermodynamics*.—Study of first, second, and third laws; derivation of fundamental equations and their application to the gas laws, chemical equilibrium, theory of solutions, electro-chemistry, and capillarity.

Text-book: Lewis & Randall, *Principles of Thermodynamics*, McGraw-Hill.

Prerequisite: Chemistry 7.

One lecture a week.

1 unit.

(Given in 1939-40 and alternate years.)

18. *Advanced Inorganic Chemistry*.—A more detailed treatment of chemistry of the metals than is possible in Chemistry 1, together with the chemistry of the rare elements.

Prerequisites: Chemistry 2 and 4.

Two lectures a week. First Term.

1 unit.

Lectures: 8.30-9.30, Tuesday and Thursday.

(Given in 1940-41 and alternate years.)

19. *Biochemistry*.—This course will deal with such topics as, some special applications of colloid chemistry to biology, the determination of hydrogen-ion concentration, the chemical and physical processes involved in the digestion, absorption, and assimilation of foodstuffs in the animal body, the intermediate and ultimate products of metabolism, and nutrition.

Prerequisites: Chemistry 3 and 9 (a). Chemistry 9 (a) and 19 may, on permission, be taken conjointly.

Two lectures a week. Second Term.

1 unit.

One afternoon laboratory may be offered.

1 unit.

20. *Methods in Teaching High School Chemistry*.—This course is offered primarily for students in the Teacher Training Course and does not carry undergraduate credit.

References: Black and Conant, *Practical Chemistry*, Macmillan; *Smith's College Chemistry*, revised by Kendall, 1935 edition, Century.

Two lectures a week. First Term.

21. *Chemical Kinetics*.—The applications of statistical mechanics to chemical problems, such as the rates of thermal and photochemical reactions, and the emission and absorption of radiation by molecules; the *quantum* theory as applied to molecular processes and band spectra.

Reference: Tolman, *Statistical Mechanics with Applications to Physics and Chemistry*.

Two lectures a week. Second Term.

1 unit.

(Given in 1939-40 and alternate years.)

22. *Surface Chemistry*.—Thermodynamics of surfaces, adsorption equations, heats of adsorption, theory of combustion, clean-up of gases in vacuum tubes, reactions on hot filaments, theory of contact catalysis, industrial uses of adsorption phenomena.

References: McBain, *The Sorption of Gases by Solids*, Routledge; Adam, *The Physics and Chemistry of Surfaces*, Clarendon Press; Rideal, *Surface Chemistry*, Cambridge.

Prerequisite: Chemistry 7.

One lecture per week.

1 unit.

(Given in 1940-41 and alternate years.)

Department of Classics

Professor: Lemuel Robertson.

Professor: O. J. Todd.

Associate Professor:

Instructor: Patrick C. F. Guthrie.

Lecturer: Jean M. Auld.

Lecturer: Geoffrey B. Riddehough.

Greek

Beginners' Greek.—Text: White, *First Greek Book*, Chap. I-XLVIII, Ginn.

Four hours a week.

3 units.

1. Texts: White, *First Greek Book*, Chap. XLIX-LXXX; Xenophon, *Anabasis I*, Goodwin and White, Ginn; North and Hillard, *Greek Prose Composition* (one exercise each from sections 1-16), Rivington; Robertson and Robertson, *The Story of Greece and Rome*, Chap. I-XXXII, Dent.

Four hours a week.

3 units.

2. Texts: Plato, *Apology*, Adam, Cambridge Elementary Classics; Aeschylus, *Prometheus Vincetus*, Sikes and Willson, Macmillan; North and Hillard, *Greek Prose Composition* (sections 17-44), Rivington; Norwood, *The Writers of Greece*.

Four hours a week.

3 units.

3. Texts: Thucydides, *History, Book VII*, Marchant, Macmillan; Sophocles, *Antigone*, Jebb and Shuckburgh, Cambridge; Euripides, *Heracles*, Byrde, Oxford.

Three hours a week.

3 units.

(Given in 1940-41 and alternate years.)

5. Texts: Homer, *Iliad* (selections), Monro, 2 vols., Oxford; *Greek Elegiac, Iambic, and Lyric Poets*, Harvard; Demosthenes, *Third Olynthiac* and *Third Philippic*, Butcher, Oxford (Vol. I).

Three hours a week.

3 units.

(Given in 1939-40 and alternate years.)

6. Texts: *Herodoti Historiae* (selections), Hude, Oxford; *Lysiae Orationes XVI* (selections), Shuckburgh, Macmillan; Aristophanes, *Aves*, Hall and Geldart, Oxford. (Open only to those who have taken or are taking Greek 3 or 5.)

Three hours a week.

3 units.

(Given in 1940-41 and alternate years.)

7. Texts: Aristotle, *Ars Poetica*, Bywater, Oxford; Plato, *Res-publica* (selections), Burnet, Oxford. (Open only to those who have taken or are taking Greek 3 or 5.)

Three hours a week.

3 units.

(Given in 1939-40 and alternate years.)

8. *Composition.*—Obligatory for Honours students; to be taken in both Third and Fourth Years.

1 unit.

9. *Greek History to 14 A.D.*—The course will begin with a brief survey of contributory civilizations, and will include a study of social and political life in the Greek world during the period. Knowledge of Greek is not prerequisite.

Text: Laistner, *Greek History*, Heath.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

(Given in 1939-40 and alternate years.)

4. (a) *Greek Art and Literature*.—A survey of architecture, sculpture, and the minor arts from the Aegean period to the Hellenistic, with consideration of their aesthetic value and their relation to Hellenic life and thought.

Lectures illustrated with lantern slides and photographs from the Carnegie Collection. One hour a week.

(b) *Greek Epic and Tragedy*.—A study, in translation, of the *Iliad*, the *Odyssey*, and selected plays of Aeschylus, Sophocles, and Euripides. Collateral reading will be assigned.

Texts: Homer, *Iliad*, translated by Lang, Leaf, and Myers, Macmillan; Homer, *Odyssey*, translated by Butcher and Lang, Macmillan; Aeschylus, *The House of Atreus*, three plays translated by Morshead, Macmillan, Golden Treasury Series; Sophocles, *Ajax* and *Oedipus the King*, translated by Jebb, Macmillan; Euripides, *Medea* and *Hippolytus*, translated by Murray, Allen.

Two hours a week.

Either part of this course may be taken separately, for a credit of one and two units respectively. Knowledge of Greek is not essential.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

PRIMARILY FOR GRADUATE STUDENTS

21. Text: Aristotle, *Politica*, Immisch, Teubner.

Three hours a week.

3 units.

Latin

Beginners' Latin.—Texts: Collar and Daniell, *First Year Latin*, revised by Jenkins, Ginn; Neville, Jolliffe, Dale, and Breslove, *A Book of Latin Poetry*, Macmillan.

This course is intended for students who have no previous knowledge of Latin. It is open for credit only to students who have not offered Latin for credit at matriculation.

The aims of the course include: (1) a mastery of what is fundamental in Latin grammar and composition and the learning of a basic Latin vocabulary; and (2) a continuous correlation with English, in a careful study of the origins and meanings of English

words derived from Latin and of the structure of the English sentence. During the latter part of the year selections from Latin poetry will be read.

Four hours a week.

3 units.

1. Texts: *Latin Prose and Poetry*, Bonney and Niddrie, Ginn; Robertson and Robertson, *The Story of Greece and Rome*, Chap. I-XXXII, Dent; Marchant and Watson, *Latin Prose Composition*, Bell.

Three hours a week.

3 units.

Lectures: Section 1, 8.30-9.30, Monday, Wednesday, Friday;
Section 2, 10.30-11.30, Tuesday, Thursday, Saturday.

2. (a) Texts: Cicero, *Catilinarian Orations*, Upcott, Oxford; Virgil, *Aeneid VI*, Page, Macmillan; Robertson and Robertson, *The Story of Greece and Rome*, Chap. XXXIII-LIV, Dent.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

2. (b) Texts: Cicero, *Catilinarian Orations*, Upcott, Oxford; Virgil, *Aeneid VI*, Page, Macmillan; Robertson and Robertson, *The Story of Greece and Rome*, Chap. XXXIII-LIV, Dent; Pilsbury, *Latin Prose Composition*, Chap. XXV-XXXVIII, Oxford.

All students are advised to provide themselves with Allen and Greenough, *New Latin Grammar*.

Three hours a week.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

NOTE. 2 (a) and 2 (b) are alternate courses; students intending to read for Honours in the Third and Fourth Years are expected, and students intending to offer Latin as a subject in the Education course are advised to take Latin 2 (b).

3. Texts: Terence, *Phormio*, Bond and Walpole, Macmillan; Virgil, *Bucolics and Georgics*, Page, Macmillan.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

4. Texts: Tacitus, *Selections*, Marsh and Leon, Prentice-Hall; Horace, *Epistles*, Wilkins, Macmillan; Duff, *Writers of Rome*, Oxford.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

(Given in 1939-40 and alternate years.)

5. Texts: Cicero, *Selected Letters*, Pritchard and Bernard, Oxford; Juvenal, *Satires*, Duff, Cambridge.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1940-41 and alternate years.)

6. Texts: Seneca, *Select Letters*, Summers, Macmillan; *Oxford Book of Latin Verse* (selections), Garrod, Oxford.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1939-40 and alternate years.)

NOTE. In Latin 3, 4, 5, and 6 additional reading will be arranged for Honours students.

7. *Roman History from 133 B.C. to 180 A.D.*

Text-book: Boak, *A History of Rome to 565 A.D.*, Macmillan.

A knowledge of Latin is not prerequisite for this course.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

8. *Composition*.—Obligatory for Honours students; to be taken in both Third and Fourth Years.

One lecture a week; individual conferences at the pleasure of the instructor.

1 unit.

Lectures: 2.30-3.30, Tuesday or Thursday.

9. *Methods in High School Latin*. This course is offered primarily for students in the Teacher Training Course, and does not carry undergraduate credit. Readings to be assigned.

Two hours a week. Second Term.

PRIMARILY FOR GRADUATE STUDENTS

21. Text: Cicero, *Select Letters*, 2 vols., How, Oxford.

Three hours a week.

3 units.

22. Text: Caesar, *De Bello Gallico*, Holmes, Oxford.

Students are referred to the chapters covering the period concerned in the pages of Mommsen, Rice Holmes, or Ferrero, or in *Cambridge Ancient History*, Vol. IX, also to Hubert's volumes on the Celts in Kegan Paul's *History of Civilisation* series, or to Rice Holmes' books, *Ancient Britain* and *Caesar's Conquest of Gaul*.

Three hours a week.

3 units.

23. *Roman Comedy*.

Department of Commerce

Professor: Ellis H. Morrow.

Associate Professor of Economics and Commerce: J. Friend Day.

Lecturer in Accountancy: Frederick Field.

Lecturer in Commercial Law: R. H. Tupper.

1. *Accountancy 1*.—An introductory course to give a broad perspective of accounting principles and methods, and to promote an intelligent appreciation of business transactions in their relation to the balance sheet and income account. Consideration is given to single proprietorships and partnerships, with attention to the basis of corporation organization from which the study of the final year in accounting can be developed.

Text-book: To be announced.

Assigned readings.

Prerequisites: Economics 2, Economics 10, Mathematics 2 or 3.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Tuesday.

Laboratory: 1.30-3.30, Thursday.

2. *Accountancy 2*.—More advanced work in connection with the accounting and financial problems of corporations, including consolidations, special reference to depreciation, and the miscellaneous details connected with balance sheet valuations in general.

Text-book: Kester, *Accounting Theory and Practice*, Vol. II, Ronald Press.

Assigned readings.

Prerequisite: Accountancy 1.

Three hours a week.

3 units.

Lectures: 2.30-4.30, Monday, and 10.30-11.30, Saturday.

3. *Accountancy 3*.—A study of the principles involved in cost accounting, including the practical working through a model set of accounts and a consideration of the managerial use of cost records.

Prerequisite: Accountancy 1.

Three hours a week.

3 units.

4. *Commercial Law 1*.—The formation, operation, construction, and discharge of contracts; bills and notes; agency; and company law. If time permits, consideration will be given to the principles of bankruptcy law.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

(Given in 1940-41 and alternate years.)

5. *Commercial Law 2*.—Sale of goods; fraudulent conveyances; fraudulent preferences; bills of sale; assignment of book accounts;

bulk sales; partnership; trusts; certain principles in the law of real property; mortgages, and landlord and tenant.

Three hours a week.

3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

6. *Marketing and Problems in Sales Management*.—A detailed study of marketing functions, leading up to the analysis of problems which have to be solved by sales executives.

Three hours a week.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

Department of Economics, Political Science, and Sociology

Professor: H. F. Angus.

Professor:

Associate Professor: G. F. Drummond.

Associate Professor: J. Friend Day.

Associate Professor: C. W. Topping.

Lecturer: Joseph A. Crumb.

HONORARY LECTURERS

Mabel Blackley, Y.W.C.A. Training School, Part-time Lecturer (Social Service Course).

H. M. Cassidy, B.A. (U.B.C.), Ph.D. (Brookings), Part-time Lecturer (Social Service Course).

James H. Creighton, M.A. (U.B.C.), Part-time Lecturer, Supervisor of Field Work (Social Service Course).

G. F. Davidson, B.A. (U.B.C.), M.A., Ph.D. (Harvard), Part-time Lecturer (Social Service Course).

Dorothy Coombe, B.A. (U.B.C.), Supervisor of Field Work (Social Service Course).

Isobel Harvey, M.A. (Brit. Col.), Part-time Lecturer (Social Service Course).

Laura Holland, C.B.E., R.N., Cert. School of Social Work (Simmons College), Honorary Lecturer (Social Service Course).

Elizabeth King, B.A., M.A. (Acadia), Part-time Lecturer (Social Service Course).

Mary McPhedran, Diploma, Social Science Department (Toronto University), Part-time Lecturer (Social Service Course).

Zella Collins, Diploma, Social Service Department (Toronto) (Social Service Course).

Economics

Social Science 1.—This course is accepted in lieu of Economics 1 as a prerequisite for Sociology 1 or Government 1.

A survey of man's relation to his environment and to his social heritage, designed to serve as an introduction to more advanced courses in the departments of Economics and History. It will begin

with a description of institutional origins and the rise and fall of civilization and will then deal with the political and economic institutions of the world today.

This course is offered with the collaboration of the Department of History.

Readings to be assigned.

3 units.

(Not given in 1939-40.)

1. *Principles of Economics*.—An introductory study of general economic theory, including a survey of the principles of value, prices, money and banking, international trade, tariffs, monopoly, taxation, labour and wages, socialism, the control of railways and trusts, etc.

Text-books: Deibler, *Principles of Economics*, McGraw-Hill; Garver and Hansen, *Principles of Economics*, 1937, Ginn.

References: *Canada Year Book*, 1937; Slichter, *Modern Economic Society*, Holt.

Additional readings will be assigned for students offering this course for credit in the Third or Fourth Year.

Economics 1 is the prerequisite for all other courses in this department except Economics 2 and Economics 10, but may be taken concurrently with Sociology 1 or Government 1.

Three hours a week.

3 units.

Lectures:

Section 1, 9.30-10.30, Monday, Wednesday, and Friday;

Section 2, 10.30-11.30, Monday, Wednesday, and Friday;

Section 3, 9.30-10.30, Tuesday, Thursday, and Saturday.

2. *Economic History*.—A survey of the factors of social and economic significance in the development of society from early times, leading to a consideration of the more important phases of European organization with special reference to Great Britain, and in particular to the village community, feudal organization, governmental control of industry and trade, the domestic system, the industrial revolution, and agricultural progress, including a survey of economic development on the North American continent during the nineteenth century.

Text-book: Southgate, *English Economic History*, Dent.

Readings: Peake, *The English Village*, Benn; Knight, Barnes, and Flugel, *Economic History of Europe*, Houghton Mifflin; Day, *History of Commerce*, Longmans; Knowles, *Industrial and Commercial Revolutions*, Dutton; Fay, *Great Britain from Adam Smith to the Present Day*, Longmans; Hobson, *Evolution of Modern Capitalism*, Scott; Ashley, *Economic Organisation of England*, Longmans; Mantoux, *The Industrial Revolution in the Eighteenth*

Century, Cape; Ernle, *English Farming Past and Present*, Longmans; Faulkner, *American Economic History*, Harpers; Innis, *Economic History of Canada*, Ryerson; Bland, Brown and Tawney, *English Economic History Select Documents*, Bell.

Three hours a week.

3 units.

Lectures: 11.30-12.30, Tuesday, Thursday, and Saturday.

3. *Labour Problems and Social Reform*.—A study of the rise of the factory system and capitalistic production, and of the more important phases of trade unionism in England, Canada, and the United States. A critical analysis of various solutions of the labour problem attempted and proposed; profit-sharing, co-operation, arbitration and conciliation, scientific management, labour legislation, and socialism.

Text-books: Daugherty, *Labour Problems*, revised ed., 1938, Houghton Mifflin; Yoder, *Personnel and Labour Relations*, 1938, Prentice-Hall.

Assigned readings.

Three hours a week. Mr. Topping.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

4. *Money and Banking*.—A study of the origin and development of money and credit and their economic effects, the trade cycle, proposed monetary reforms, banking and credit, foreign exchange, together with a study of the Canadian and other banking systems, such as those of Great Britain, the United States, France, Germany, and Sweden.

Text-books: Dowrie, *Money and Banking*, Wiley; Kilborne and Woodworth, *Principles of Money and Banking*, McGraw-Hill.

References: Willis and Beckhart, *Foreign Banking Systems*, Holt; Hayek, *Prices and Production*, Cape; Hayek, *Monetary Theory and the Trade Cycle*, Cape; Durbin, *The Problem of Credit Policy*, Wiley; Durbin, *Purchasing Power and Trade Depression*, Cape; Keynes, *The General Theory of Employment, Interest and Money*, Macmillan; League of Nations Publications, viz., *World Economic Survey*, *World Production and Prices*, *Money and Banking* (Vols. I and II), *Prosperity and Depression*.

Three hours a week. Mr. Crumb.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

5. *Government Finance*.—Principles and problems surrounding the public funds and the administration of government enterprises. Topics include the development of the science; the growth and distribution of the tax burden; complications introduced by the increased scope of government activity in relief and welfare problems;

private versus public enterprise; the Canadian and Empire tax systems; Dominion-provincial relations; duplication and overlapping under a Federal organization; personal, property, and business taxes; income and inheritance tax laws; public borrowing and deficit financing.

Text-book: Lutz, *Public Finance*.

Readings: Seligman, *Essays in Finance*, 1925; Dalton, *Principles of Public Finance*, 1929; Comstock, *Taxation in the Modern State*, 1931; Shirras, *Science of Public Finance*, 1936, Macmillan.

Three hours a week. Mr. Crumb.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

6. *International Trade*.—A survey of the theory of international trade and the foreign exchanges; the balance of trade, foreign investments, and other fundamental factors; the problem of reparations and of war debts; the protective tariff and commercial imperialism; the commercial policy of the leading countries, with considerable attention to Canada.

Text-books: Taussig, *International Trade*, Macmillan; Griffin, *Principles of Foreign Trade*, Macmillan; Viner, *Studies in the Theory of International Trade*, Allen and Unwin; Haberler, *The Theory of International Trade*, William Hodge & Co.

References: League of Nations Publications, viz., *World Economic Survey*, *Statistical Year Book of the League of Nations*; *Prosperity and Depression*; Ohlin, *Inter-regional and International Trade*, Cambridge, Mass.

Assigned references.

Three hours a week. Mr. Drummond.

3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

7. *Corporation Economics*.—Historical development of the different forms of industrial organization, including the partnership, joint stock company, and the corporation, and the later developments, such as the pool, trust, combination, and holding company; methods of promotion and financing, over-capitalization, stock market activities, the public policy toward corporations, etc.

Readings to be assigned.

Three hours a week. Mr. Currie.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

8. *Social Statistics*.—This course is introductory in character and designed to familiarise the student with the collection and analysis of statistical data in the social sciences. It covers the collection of data by the government services; analysis of forms and question-

naires; the tabulation of data; the structure and use of statistical tables and graphical presentations; grouping and averaging; simple trends and variation. Reference will be made to the actual forms and methods employed by the Provincial and Dominion statistical services; population and vital statistics; the statistics of the Public Health and Social Welfare Services, etc.

Readings to be assigned.

Two hours a week. Mr. Drummond.

2 units.

(May not be given in 1939-40.)

9. *History of Economic Thought*.—A study of the development of modern economic theory, with special reference to the Mercantilists, the Physiocrats, Adam Smith, the Classical School and its critics, the Historical School, Jevons and Austrian School, Marshall, together with a study of recent trends in economic thought.

Text-books: Gray, *The Development of Economic Doctrine*, Longmans; Scott, *The Development of Economics*, Century; Gide and Rist, *A History of Economic Doctrine*, Harrap; Patterson, *Readings in the History of Economic Thought*, McGraw-Hill.

Three hours a week. Mr. Crumb.

3 units.

Lectures: 11.30-12.30, Tuesday, Thursday, and Saturday.

10. *Economic Geography*.—A general survey of the principal resources and industries of the world, with emphasis on those entering into international trade, leading to a study of the principles and problems of transportation by sea.

Text-books: MacFarlane, *Economic Geography*, latest edition, Pitman; Whitbeck and Finch, *Economic Geography*, McGraw-Hill; Chisholm, *Handbook of Commercial Geography*, Longmans.

Assigned readings: Leith, *World Minerals and World Politics*, McGraw-Hill; Holland, *Mineral Sanctions as an Aid to International Security*, Oliver & Boyd; Brookings Institute Lectures, *Mineral Economics*, McGraw-Hill; A.I.M.E. Essays, edited by Mathewson, *Modern Uses of Non-ferrous Metals*, Maple Press; Crerar, *Future of Canadian Mining*, King's Printer.

Some lectures in this course will be given by an instructor from the Department of Geology and Geography.

Three hours a week. Mr. Day.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

11. *Transportation*.—A comprehensive study of the fundamentals of railroad development and organization, with the legal and economic problems involved; theory and practice of rate-making; discriminations; factors in public control, etc.

Text-books: Acworth, *Elements of Railway Economics*, Claren-

don Press; Jackman, *Economics of Transportation*, University of Toronto.

Assigned readings.

Three hours a week.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

12. *Statistics 1*.—Statistical methods in relation to economic and social investigations; statistical groups; types of average; statistical series in time; trend and fluctuation; index numbers; methods of measuring correlation; elementary probabilities and the normal curve of error; problem of sampling.

Text-books: Mills, *Statistical Methods*; Mills and Davenport, *A Manual of Problems and Tables in Statistics*, Holt.

Prerequisite: Mathematics 2 or 3.

One lecture and two hours laboratory work a week. Mr. Drummond.

3 units.

Lectures: 10.30-11.30, Monday.

Laboratory Periods (Statistics Laboratory, Vocational Guidance Building):

Section A, 1.30-3.30, Monday.

Section B, 1.30-3.30, Wednesday.

13. *Statistics 2*.—This course is a continuation of Statistics 1, and aims at giving an understanding of statistical technique in its application to problems of business and economic research. It involves a study of more advanced methods of correlation analysis, cyclical fluctuations, and business forecasting. In addition to covering a wide course of reading, students will be required to construct tables, diagrams, etc., based on original data (official or private) of the statistics of trade, production, sales, prices, wages, etc., and to write reports and précis.

Text-books: Ezekiel, *Methods of Correlation Analysis*, Wiley; Fisher, *Statistical Methods for Research Workers*, Oliver and Boyd; Goulden, *Methods of Statistical Analysis*, Burgess Publishing Co.; Snedecor, *Statistical Methods*, Collegiate Press, Ames, Iowa; Snedecor, *Calculation and Interpretation of Analysis of Variance and Covariance*, Collegiate Press; Riggleman and Frisbee, *Business Statistics*, McGraw-Hill; Snider, *Business Statistics*, McGraw-Hill; Haney, *Business Forecasting*, Ginn; Brown, Bingham and Temnomeroff, *Laboratory Handbook of Statistical Methods*, McGraw-Hill; Mills, *Economic Tendencies in the United States*, National Bureau of Economic Research.

Assigned references.

Three hours a week. Mr. Drummond.

3 units.

Lectures, First Term: 10.30-11.30, Tuesday and Thursday.

Laboratory Periods (Statistics Laboratory, Vocational Guidance Building): 1.30-3.30, Tuesday and Thursday.

Agricultural Economics

1. *Agricultural Economics*. — The principles of economics as applied to agriculture; historical background; the agricultural problem; and some special topics, such as the agricultural surplus, production in relation to population growth, the farm income, and the share of agriculture in the national income.

Text-book: Taylor, *Agricultural Economics*, Macmillan.

References and assigned readings from Gray, Carver, Nourse, and others.

Three hours a week. Mr. Clement.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

2. *Marketing*.—The principles of marketing as applied to the individual farm and to agriculture as a whole. The general principles of marketing, the marketing of agricultural products as compared to wholesale and retail distribution of manufactured goods, the contributions of national Farmer Movements, co-operative marketing as illustrated by the marketing of wheat, fruit, and milk in Canada.

Text-books: Hibbard, *Marketing Agricultural Products*, Appleton; Patton, *Grain Growers' Co-operation in Western Canada*, Harvard.

References and assigned readings from Macklin, Boyle, Benton, Black, Patton, and others.

Three hours a week. Mr. Clement.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

Forest Economics

1. *Forest Economics*.—This course is devoted to the economic aspects of land use, forestry resources, timber production, and the forest industries, especially the distribution of lumber and other products.

Government

1. *Constitutional Government*. — This course deals with the nature, origin, and aims of the State; and with the organization of government in the British Empire, the United States of America, and France.

Readings to be assigned.

Three hours a week. Mr. Angus.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

2. *Introduction to the Study of Law*.—(a) A rapid survey of legal history; (b) outlines of jurisprudence.

Readings to be assigned.

Three hours a week. Mr. Angus. 3 units.
Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

3. *Imperial Problems*.—A course on problems of government within the British Empire.

Readings to be assigned.

Three hours a week. Mr. Angus. 3 units.

4. *Problems of the Pacific*.—A course on the problems of the Pacific Area discussed at the conferences of the Institute of Pacific Relations. Each problem will be related to its economic and political background.

Readings to be assigned.

Three hours a week. Mr. Angus. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

Sociology

1. *Introduction to Sociology*.—The approach to the study of society is by way of the local community and its institutions. An evaluation of the importance of the geographic, the biological, the psychological, and the cultural factors in the determination of the rise, growth, and functioning of groups will be undertaken. There will be an attempt to discover fundamental principles and to trace these principles in their interrelations. Several of the problems resulting from group contacts will be studied.

Text-books: Davis and Barnes, *Introduction to Sociology*, Heath; Dawson, Gettys, *Introduction to Sociology* (revised ed.), Ronald.

The rule that Economics 1 or Social Science 1 must be taken prior to this course or concurrently with it may be waived in the case of students in Nursing.

Three hours a week. Mr. Topping. 3 units.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

2. *Social Origins and Development*.—The different views relating to the origin and evolution of human society; the geographic factor and economic methods in their bearing upon social life; primitive mental attitudes; the development of ethical, etc., ideas among primitive peoples; primitive institutions, tools, art, and their modern forms; the growth of cardinal social ideas through the ancient and classical period to the present time.

Text-books: Lowie, *Introduction to Cultural Anthropology*, 1934, Farrar and Rinehart; Goldenweiser, *Anthropology*, 1937, Crofts.

Three hours a week. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Not given in 1939-40.)

3. *The Urban Community*.—The structural characteristics of the modern city will be outlined and the sociological significance of the functions performed by its inhabitants discussed. A factual study will be made of urban personalities, groups, and cultural patterns. Methods of urban social control will be investigated and solutions for urban problems will be evaluated.

Text-books: Woolston, *Metropolis*, 1938, Appleton - Century; Queen and Thomas, *The City*, 1939, McGraw-Hill.

Three hours a week. Mr. Topping. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Given in 1939-40 and alternate years.)

4. *Social Problems and Social Policy*. — A detailed study of significant modern social problems, together with a statement and evaluation of the more promising suggested solutions for these problems.

Text-books: Gillett and Reinhardt, *Current Social Problems*, 1933, American Book Co.; Elliott and Merrill, *Social Disorganization*, 1934, Harpers.

Three hours a week. Mr. Topping. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

Courses Open Only to Candidates for the Diploma of Social Service

NOTE. A student must be a university graduate or be of the full age of twenty-one years for admission to any of these courses.

1. *Introduction to Social Service*.—An introductory course in which is presented a general view of the entire field of social service as illustrated by its present scope and methods.

Two hours a week. Mr. Topping. 2 units.

Lectures: 10.30-11.30, Tuesday and Thursday.

2. *Social Organization and Case Work Methods*.—An introductory course in which the general principles of the social treatment of unadjusted individuals and disorganized families are elucidated.

One hour a week. Miss McPhedran. 1 unit.

Lectures: 8.30-9.30, Thursday.

3. *Child Welfare*.—An introductory course in which methods of caring for dependent, neglected, and delinquent children are presented and discussed.

One hour a week. Miss Holland, Miss Harvey. 1 unit.

Lectures: 8.30-9.30, Tuesday.

4 and 8. *Hygiene and Public Health*.—The purpose of the course is to provide social workers with the information needed to understand and help most effectively persons suffering from mental and physical handicaps; social implications of illness, the need for an interpretative diagnosis, and the ethics involved in the relations of doctors, nurses, social workers, and patients.

Two hours a week. Miss Kerr.

2 units.

Lectures: 9.30-10.30, Tuesday and Thursday.

5. *Case Work Methods*.—Selected case records which present complex or difficult situations are studied with a view to determining the principles of diagnosis and treatment involved.

Summer Session, 1939. Miss Feder.

2 units.

6. *Child Welfare Case Studies*.—An intensive study of the problems met by a child welfare organization through discussion of specific records.

Summer Session, 1939. Miss Feder.

1 unit.

7. *Group Work*.—The course covers the principles of group and community organization and provides an opportunity to understand the educational processes of group work.

One hour a week. Miss Blackley.

1 unit.

Lectures: 4.30-5.30, Monday.

9 and 10. *Field Work Seminar*. — The problems met by the students in connection with field work are discussed, as well as certain other selected problems. The object of the seminar is to unify and integrate the whole course.

One and one-half hours a week. Mr. Topping, Miss Collins.

3 units.

Lectures: 4.00-5.30, Friday.

11. *Administration*.—Elements of administrative organization in social agencies; functions and interrelations of boards of directors, executives, and staff; principles involved in formulation and administration of finance policy, budgeting, and accounting; office management; principles of executive efficiency.

One and one-half hours a week. First Term. Mr. Davidson.

1 unit.

Lectures: 3.30-5.00, Wednesday.

12. *Social Legislation*.—An outline of the background and underlying principles of British Columbia social legislation and its relation to similar legislation in European and other countries.

One hour a week. Miss King.

1 unit.

Lectures: 8.30-9.30, Wednesday.

13. *Public Welfare Seminar*.—The object of the course is to bring out the major characteristics of public welfare organization, particularly in British Columbia, and to raise for discussion and study certain pressing problems in this field.

One and one-half hours a week. Second Term. Mr. Cassidy, Mr. Creighton. 1 unit.

Lectures: 3.30-5.00, Wednesday.

Department of Education

Professor: G. M. Weir. (On leave of absence.)

Associate Professor: Maxwell A. Cameron.

Associate Professor: W. G. Black.

Assistant Professor of Education and Psychology: Frederick T. Tyler.

Lecturers in High School Methods: The following professors:

R. H. Clark, A. C. Cooke, O. E. Anderson, Janet T. Greig,
D. O. Evans, A. H. Hutchinson, L. Richardson, O. J. Todd,
T. R. Hall, Isabel MacInnes.

NOTES

1. Registration for the Teacher Training Course is limited to sixty (60). Applications for admission should be made to the Registrar on or before August 15.

2. Philosophy 7 and Psychology 4 may be counted as courses in Education.

3. Undergraduates who intend to proceed to the Teacher Training Course are required to take Psychology A or 1 and are advised to select at least one of the following: Philosophy 1, 7, Psychology 4.

4. Two of the three courses, Education 10, 11, 12, may be taken for undergraduate credit, but only by students who have completed their Normal training.

TEACHER TRAINING COURSES

10. *Educational Psychology*.

Part 1: *Elementary Statistics Applied to Education*.—Graphical representation of data; measures of central tendency; measures of variability; the normal curve; correlation.

Part 2: *The Application of Psychology to Education*.—Maturation and the development of behaviour; individual differences; the handicapped and the "problem" child; motivation—discipline, interests, and incentives; emotions; intellectual efficiency; fatigue; the learning process; transfer of training; the social adjustments of childhood and adolescence; educational engineering.

Text-books: Rugg, *A Primer of Graphics and Statistics for*

Teachers, Houghton Mifflin; Gates, *Psychology for Students of Education*, Macmillan.

Prerequisite: Psychology 1.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

11. *History of Education*.—A study of educational developments in theory and practice, with special attention to the period since 1800.

Text-book: Cubberley, *A Brief History of Education*, Houghton Mifflin.

Chief references: Cubberley, *Readings in the History of Education*; Reisner, *The Evolution of the Common School*; Kandel, *History of Secondary Education*.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

12. *School Administration and Law*.—The organization of the school system; the aims and characteristics of the elementary, junior high, and senior high schools; principles of curriculum construction; fundamentals of school administration and class management; the supervision of instruction; the place of the library in the school; the aims and organization of guidance; the school law of British Columbia.

Text-book: To be announced.

References: *Manual of the School Law of British Columbia*; *Report of the School Survey Commission of British Columbia*; King, *School Finance in British Columbia*.

Selected reading to be assigned.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

13. *Tests and Measurements*.

14. *Methods, Observation, and Practice*.

(a) *General Methods*. First Term.

(b) *Elementary School Subjects*. First Term.

(c) *High School Subjects*.—English, Social Studies, Latin, French, German, Mathematics, Biology, Chemistry, Physics, Agriculture.

Two hours a week in each course. Second Term.

Two courses are required under (c), but students are advised to attend a third course.

(d) *Additional Subjects*.—Art, Music, Physical Education.
Both Terms.

Geography, Librarianship.

Second Term.

(e) Observation and Practice.

- (1) First Term: At least forty (40) hours in the elementary schools of the Province.
- (2) Second Term: At least sixty (60) hours in the high schools of the Province.

15. *Seminar*.—A special study, with an essay or report, in one of the three fields, Education 11, 12, 13.

One hour a week.

COURSES FOR GRADUATE STUDENTS

20. *History of Education*.

21. *Educational Psychology*.

22. *Philosophy of Education*.

23. *Problems in Education*.

Course 23 will be limited to those having experience in teaching or administration.

Department of English

Professor: G. G. Sedgewick.

Professor: W. L. MacDonald.

Professor: F. G. C. Wood.

Professor: Thorleif Larsen.

Professor: Ira Dilworth (on leave of absence, 1938-39).

Assistant Professor: M. L. Bollert.

Assistant Professor: H. C. Lewis.

Assistant Professor: Dorothy Blakey.

Assistant Professor: Edmund Morrison.

Lecturer: John H. Creighton.

Lecturer: T. Roy Hall.

FIRST YEAR

1. *(a) Literature*.—Elementary study of a number of literary forms to be chosen from the short story, the play, the novel, the essay, the simpler sorts of poetry.

Texts for 1939-40: Bates, *Twentieth Century Short Stories*, Houghton Mifflin; Euripides, *Bacchae*, in Gilbert Murray's paraphrase; Shakspeare, *Julius Caesar*; Sheridan, *The School for Scandal*, Everyman; Ibsen, *A Doll's House*, Everyman; Monroe, *Twentieth Century Poetry*, Chatto and Windus.

Two hours a week.

(b) Composition.—Elementary forms and principles of composition.

Text-book: Kierzek, *The Macmillan Handbook of English*, Macmillan.

Two hours a week.

3 units.

The work in composition consists (i) of themes and class exercises,

and (ii) of written examinations. Students will be required to make a passing mark in each of these two parts of the work.

Lectures:

Section 1, 8.30-9.30, Monday, Wednesday, Friday, and 2.30-3.30, Thursday;

Section 2, 11.30-12.30, Monday, Wednesday, Friday, and 2.30-3.30, Thursday;

Section 3, 8.30-9.30, Tuesday, Thursday, Saturday, and 2.30-3.30, Tuesday.

SECOND YEAR

2. *Literature*.—Studies in the history of English literature.

Lectures and texts illustrative of the chief authors and movements from Tottel's *Miscellany* to Shelley. Legouis, *A Short History of English Literature*, Oxford.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

3. *English Composition for Students in Agriculture and Applied Science*.—See Applied Science and Agriculture sections of the Calendar.

4. *Technical Writing for Students in Applied Science*.—See Applied Science section of the Calendar.

THIRD AND FOURTH YEARS

9. *Shakspeare*.—This course may be taken for credit in two successive years. In 1939-40, 9 (a) will be given as follows:

i. A detailed study of the text of *Romeo and Juliet*, *Twelfth Night*, *Hamlet*, *King Lear*, *A Winter's Tale*.

ii. Lectures on Shakspeare's development, on his use of sources, and on his relation to the stage and the dramatic practice of his time.

Students will provide themselves with annotated editions of the five plays named above, and with *The Facts About Shakespeare*, by Neilson and Thorndike, Macmillan. They are advised to get *The Complete Works of Shakespeare*, ed. Kittredge, or the *Cambridge Shakespeare*, ed. Neilson, or the *Oxford Shakespeare*, ed. Craig.

Three hours a week. Mr. Sedgewick.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

9. (b) (Given in 1940-41 and alternate years.)

10. *The Drama to 1642*.—The course begins with a study of the Theban plays of Sophocles and of Aristotle's theory of tragedy. The main subject of the course is Elizabethan drama: (1) its beginnings in the Miracle and Morality Plays and in the Interludes; (2) its development in Shakspeare's predecessors — Lyly, Peele,

Greene, Kyd, and Marlowe; (3) its culmination in Shakspeare; and (4) its decline in Jonson, Beaumont and Fletcher, Middleton, Webster, Massinger, Shirley, and Ford.

Texts: Campbell, *Sophocles in English Verse*, World's Classics, Oxford; *Everyman and Other Interludes*, Dent; *Elizabethan Dramatists, Other Than Shakespeare*, ed. Oliphant, Prentice-Hall; *Shakespeare*, Shakespeare Head Press, or the *Cambridge Shakespeare*, ed. Neilson, Houghton Mifflin.

Three hours a week. Mr. Larsen. 3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

13. *The English Novel from Richardson to the Present Time*.—The development of English fiction will be traced from Richardson, Fielding, Smollett, and Sterne through Goldsmith, Mrs. Radcliffe, Jane Austen, Scott, C. Brontë, Dickens, Thackeray, and George Eliot to Trollope, Meredith, Stevenson, Hardy, and a few representative novelists now living.

A fair knowledge of the works of Jane Austen, Scott, Dickens, Thackeray, and George Eliot is a prerequisite for those taking this course.

Three hours a week. Mr. Wood. 3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

14. *Eighteenth Century Literature*.—This course aims to give a view, as comprehensive as possible, of the main currents of English thought and literature during the period 1660-1800. It is concerned mainly with the work of such men as Dryden, Pope, Swift, Addison, Steele, Johnson, Goldsmith, Burke, and Burns.

Three hours a week. Mr. MacDonald. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

16. *Romantic Poetry, 1780-1830*.—Studies in the beginnings and progress of Romanticism, based chiefly on the work of Wordsworth, Coleridge, Byron, Keats, Shelley, Scott.

Text-book: Bernbaum, *Guide Through the Romantic Movement*.
For reference: Elton, *A Survey of English Literature, 1780-1830*.

Three hours a week. 3 units.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

(Not given in 1939-40.)

17. *Victorian Poetry*.—This course is concerned chiefly with the work of Tennyson, Browning, and Arnold. A few weeks at the close of the term will be devoted to a survey of the development of later poetry.

Texts: Browning, *Complete Poetical Works*, Cambridge edition; Arnold, *Poems*, Oxford edition; Tennyson, *Poems*, Globe edition;

Pierce, *Century Readings in the Nineteenth Century Poets*, Century.

For reference: Elton, *A Survey of English Literature, 1830-1880*.

Three hours a week. 3 units.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

18. *Victorian Prose Literature*.—Literary, social, religious, and scientific currents of thought as represented by the work of Mill, Ruskin, Carlyle, Newman, Arnold, Darwin, Huxley, and Butler. The following texts in whole or part will be dealt with in lectures and class discussion: Mill, *Utilitarianism and Liberty*, Everyman; Ruskin, *Unto This Last*, Everyman; Carlyle, *Sartor Resartus* (selections), *Heroes and Hero Worship* (selections), *Past and Present*, Everyman; Newman, *Apologia Pro Vita Sua*, Everyman; *Idea of a University* (selections), ed. Yardley, Cambridge; Arnold, *Representative Essays*, ed. Brown, Macmillan, *Literature and Dogma* (selections), Burt's Home Library; Darwin, *Origin of Species*, Chapter IV, Everyman, or World's Classics, Oxford; Huxley, *Readings from Huxley*, ed. Rinaker, 1934, Harcourt, Brace; Butler, *Erewhon*, Everyman.

Three hours a week.

3 units.

(Not given in 1939-40.)

19. *Contemporary Literature*. — Some tendencies of English literature of the present generation, in poetry and the essay and the novel, will be studied in this course.

Texts: Brown, *Essays of Our Times*, Scott, Foresman; Roberts, *The Faber Book of Modern Verse*, Faber & Faber. Three novels, to be assigned.

Three hours a week. Mr. Lewis.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

25. (a) *Private Reading*.—Students who are candidates for an Honours degree in English may elect a course of private reading in their Third Year. 3 units.

25. (b) *Private Reading*.—Students of the Fourth Year may pursue, with the consent and under the direction of the Department, a course of private reading. 3 units.

In such courses examinations will be set, but no class instruction will be given.

20. *Chaucer and Middle English*.—(a) Middle English grammar with the reading of representative texts; (b) *The Canterbury Tales*.

Texts: *Chaucer's Complete Works*, ed. Robinson, Houghton

Mifflin; Manly, *The Canterbury Tales*, Holt; a Middle English reader.

Three hours a week. Mr. Sedgewick. 3 units.
(Given in 1940-41 and alternate years.)

21. (a) *Anglo-Saxon*.—Moore & Knott, *The Elements of Old English*, Wahr; Anderson and Williams, *Old English Handbook*, Houghton Mifflin.

Two hours a week. Mr. MacDonald. 2 units.
Lectures: 8.30-9.30, Tuesday and Thursday.

22. *The History of the English Language*.—The study of the vocabulary, syntax, accidence, and phonology of the English language from the historical point of view. A brief introduction to philological method; the ancestry of English; the language in the Old and Middle English periods, with illustrative readings; the development of modern English.

Prerequisite: English 21 (a).

Text-books: To be announced.

Two hours a week. Miss Blakey. 2 units.
Lectures: 8.30-9.30, Monday and Wednesday.

24. *Seminar*.—In this class advanced students will get practice in some of the simpler methods of criticism and investigation.

Two hours a week. 2 units.
Seminar: 3.30-5.30, Friday.

TEACHER TRAINING COURSE

26. *Methods in High School English*.—This course does not carry undergraduate credit.

Two hours a week. Second Term.

Department of Geology and Geography

Professor: M. Y. Williams.

Professor of Physical and Structural Geology: S. J. Schofield.

Professor of Mineralogy and Petrography: Clarence Otto Swanson.

Professor of Geology: Henry C. Gunning.

Assistant Professor of Mineralogy and Petrography: H. V. Warren.

Instructor: Gordon Davis.

Lecturer: Victor Dolmage.

Geology

1. *General Geology*.—This course serves as an introduction to the science of geology. The following subjects are treated in the lectures and laboratory.

(a) *Physical Geology*, including weathering; the work of the

wind, ground water, streams, and glaciers; the ocean and its work; the structure of the earth; earthquakes, volcanoes, igneous intrusions, metamorphism, mountains, plateaus, and ore deposits.

Two hours a week. First Term. Mr. Williams.

Lectures: 9.30-10.30, Monday and Wednesday.

(b) *Laboratory Exercises in Physical Geology*, including the study and identification of the commoner minerals and rocks, the interpretation of topographical and geological maps, and the study of structures by the use of models.

Field Work will replace laboratory occasionally, and will take the form of excursions to localities, in the immediate neighborhood of Vancouver, which illustrate the subject matter of the lectures.

Two hours laboratory a week. Mr. Warren, Mr. Davis, and assistants.

Laboratory: 1.30-3.30, Tuesday or Thursday.

(c) *Historical Geology*, including the earth before the Cambrian, the Palaeozoic, the Mesozoic, the Cenozoic, and the Quaternary eras.

Two hours a week. Second Term. Mr. Williams.

Lectures: 9.30-10.30, Monday and Wednesday.

(d) *Laboratory Exercises in Historical Geology*, consisting of the study of fossils, their characteristics and associations, as illustrated by their occurrence in the strata.

Text-book: Longwell, Knopf, Flint, Schuchert, Dunbar, *Outlines of Geology*, 1937, Wiley.

Prerequisite: Matriculation Chemistry or Physics, or Chemistry A or 1 or Physics A or 1, taken either before or concurrently.

Two hours laboratory a week. Second Term. Mr. Williams and assistants.

Laboratory: 1.30-3.30, Tuesday or Thursday.

Students will be required to make passing marks in the combined written and the combined practical divisions of the course, and may be required to pass in each of the laboratory divisions. 3 units.

2. (a) *General Mineralogy*.—A brief introduction to the field of mineralogy, with particular emphasis on the cultural aspect.

Lectures take the form of a concise treatment of (1) elementary crystallography, (2) physical mineralogy, and (3) descriptive mineralogy of 50 of the more common mineral species, with special reference to gem stones and to the minerals which are important in present day Canadian and world economies.

Laboratory Work consists of a study of the more common crystal forms of about 50 prescribed minerals, accompanied by a brief

outline of the principles and methods of determinative mineralogy and blowpipe analysis.

Text-book: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition, Wiley.

References: Brush and Penfield, *Determinative Mineralogy and Blowpipe Analysis*, 16th edition revised, Wiley; Kraus, Hunt and Ramsell, *Mineralogy*, 3rd edition, McGraw-Hill.

Prerequisites: Geology 1 must, and Chemistry 1 and Physics 1 should, precede or accompany this course.

Two lectures and two hours laboratory a week. First Term.
Mr. Warren. 1½ units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-3.30, Friday.

2. (b) *Descriptive and Determinative Mineralogy*.—This course supplements 2 (a) and consists of a more complete survey of crystallography and of physical and chemical mineralogy, with a critical study of about 70 of the less common minerals, special emphasis being laid on their crystallography, origin, association, alteration, and economic significance.

Text-book: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition, Wiley.

References: Brush and Penfield, *Determinative Mineralogy and Blowpipe Analysis*, 16th edition revised, Wiley; Kraus, Hunt and Ramsell, *Mineralogy*, 3rd edition, McGraw-Hill.

Prerequisites: Geology 2 (a), Chemistry 1, and Physics 1 must precede or accompany this course.

Two lectures and two hours laboratory a week. Second Term.
Mr. Warren. 1½ units.

Lectures: 9.30-10.30, Tuesday and Thursday.

Laboratory: 1.30-3.30, Friday.

4. *Structural Geology*.—A study of primary and secondary structures in rocks, with emphasis on interrelations and field determinations of observed structures. The course includes practice in graphical methods for solving various practical problems. In addition, it briefly surveys the use of geophysical methods in tracing concealed structures.

Text-book: Nevin, *Structural Geology*, 2nd edition, Wiley.

Prerequisite: Geology 1.

Three hours a week. Mr. Swanson. 3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

5. *Regional Geology and History of the Geological Sciences*.—A brief study of the development of the geological sciences; studies

of the salient features of the geology and economic minerals of Canada, and of the main geological features of the continental and oceanic segments of the crust of the earth.

References: Geikie, *The Founders of Geology*; Merrill, *The First One Hundred Years of American Geology*; Young, *Geology and Economic Minerals of Canada*, Geological Survey of Canada, Economic Geology Series No. 1, 1926.

Prerequisites: Geology 1 and 2.

Four hours a week. Mr. Williams, Mr. Schofield, Mr. Swanson, Mr. Davis. 4 units.

Lectures: 3.30-5.30, Monday, and two hours to be arranged.

6. *Palaeontology*.—A study of invertebrate and vertebrate fossils, their classification, identification, and distribution, both geological and geographical.

Text-book: Twenhofel and Shrock, *Invertebrate Palaeontology*, McGraw-Hill.

References: Grabau and Shimer, *North American Index Fossils*; Zittel-Eastman, *Text-book of Palaeontology*.

Prerequisite: Geology 1. Biology 1 is recommended.

Two lectures and two hours laboratory a week. Mr. Williams. 3 units.

Lectures: 10.30-11.30, Tuesday and Thursday.

Laboratory: 3.30-5.30, Tuesday.

7. *Petrography*.—This course consists of systematic studies of (a) optical mineralogy and (b) petrography, with an introduction to petrogenesis.

The laboratory work deals with the determination of rocks, both under the microscope and in hand specimens.

Text-books: Tyrrell, *The Principles of Petrology*, Dutton; Rogers and Kerr, *Thin-Section Mineralogy*, McGraw-Hill.

Prerequisites: Geology 1 and 2.

Two lectures and four hours laboratory a week. Mr. Swanson. 4 units.

Lectures: 9.30-10.30, Wednesday and Friday.

Laboratory: 1.30-3.30, Tuesday and Wednesday.

8. *Economic Geology*.—A study of the occurrence, genesis, and structure of the principal metallic and non-metallic mineral deposits, with type illustrations; and a description of the ore deposits of the British Empire, special stress being placed on those in Canada.

Text-book: Ries, *Economic Geology*, 7th edition, 1937, Wiley.

Prerequisites: Geology 1 and 2. Geology 7 must precede or accompany this course.

Four hours a week. Mr. Williams, Mr. Schofield, Mr. Swanson, Mr. Warren. 4 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday;
2.30-3.30, Friday.

9. *Mineralography*. — Principally a laboratory course dealing with the study and recognition of the opaque minerals by means of the reflecting microscope.

The work consists of practice in the cutting, grinding, and polishing of ore specimens, accompanied by training in micro-chemical methods of mineral determination.

During the second term each student is assigned a suite of ores from some mining district for a critical examination and report.

Text-book: Davy and Farnham, *Microscopic Examination of the Ore Minerals*, McGraw-Hill.

Prerequisite: Geology 8 must precede or accompany this course.

Two or four hours a week by arrangement. Mr. Warren. 1 or 2 units.

Lectures and laboratory: 1.30-3.30, Thursday, and additional hours to be arranged.

10. See Geology 10, Faculty of Applied Science.

Three hours laboratory or field work a week. Mr. Davis. 1½ units.

COURSES FOR GRADUATE STUDENTS

(To be arranged in consultation with the instructors and the Head of the Department.)

20. *Sedimentation*.

Text-book: Twenhofel, *Treatise on Sedimentation*, 2nd edition, Williams and Wilkins.

Prerequisites: Geology 1, 2, and 5.

One lecture or seminar and 6 hours of reading or laboratory a week. Mr. Williams. 3 units.

21. *Problems in Palaeontology*.

Prerequisite: Geology 6.

One seminar and 6 hours laboratory a week. Mr. Williams. 3 to 5 units.

23. (a) *Advanced Mineralogy (Gems and Precious Stones)*.—A systematic study of the gem minerals and of some of the more popular semi-precious stones.

Text-books: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition, Wiley; G. F. Herbert Smith, *Gemstones*, Methuen.

Prerequisite: Geology 2 (a).

One seminar and four hours laboratory a week. First Term. Mr. Warren. 1½ units.

NOTE. This course may be taken as an undergraduate course, subject to the approval of the Department.

(b) *Advanced Mineralogy*.—A systematic study of some of the rarer minerals, particular attention being given to those of economic importance. An elementary study of crystal measurements may be undertaken.

Text-book: Dana, *Text-book of Mineralogy*, revised by Ford, 4th edition, Wiley.

References: Brush and Penfield, *Determinative Mineralogy and Blowpipe Analysis*, 16th edition revised, Wiley; Kraus, Hunt and Ramsell, *Mineralogy*, 3rd edition, McGraw-Hill.

Prerequisites: Geology 7 and 8.

One seminar and four hours laboratory a week, or six hours laboratory a week. Second Term. Mr. Swanson, Mr. Warren.

Lectures: 8.30-9.30, Monday. 1½ units.

24. *Advanced Mineralography*. — A critical study of some approved suite of ores, using the more recent methods of investigation, including the examination of polished sections under polarized light, microchemistry, microphotography, use of "super-polisher," etc.

Text-book: Frequent reference will be made to U.S. Geological Survey Bulletin 825, *Microscopic Determination of the Ore Minerals*.

Prerequisites: Geology 7, 8, and 9.

Occasional seminars and from five to seven hours laboratory a week. Mr. Warren. 3 to 4 units.

25. *Petrogeny*.—A reading and lecture course, supplemented with occasional laboratory work, which deals with the origin of igneous and metamorphic rocks.

References: Harker, *Metamorphism*, Methuen; Bowen, *Evolution of Igneous Rocks*, Princeton.

Prerequisite: Geology 7.

Two lectures a week. Mr. Swanson.

Hours by arrangement.

2 units.

Geography

1. *Principles of Geography*.—This introductory course aims to develop in the student the point of view of modern geography and

to furnish a foundation or background that will be useful not alone to those who may intend to continue a study of geography or to teach it in the schools, but also to those who intend to study history, economics, and other subjects, or to enter business or professional careers into which geographical considerations enter.

Since geography is a study of the surface of the earth and its relation to man, the course involves consideration of earth relations; weathering and soils; land forms and oceans; climates; natural resources; and a brief introduction to the study of man and his response to the geographical environment.

Text-book: James, *An Outline of Geography*, Ginn.

An atlas—failing a large, comprehensive atlas, one of the following cheap ones will serve: *The University Atlas*, Geo. Philip & Son; *Canadian School Atlas*, Dent; *Goode's School Atlas*, Rand McNally; *Appleton's Standard School Atlas*, Appleton-Century.

Three hours a week. Mr. Davis, Mr. Warren. 3 units.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

2. *Weather and Climate*.—A course covering in a general way the whole field of weather phenomena in the First Term and the description and distribution of climatic types in the Second Term.

Text-book: Trewartha, *An Introduction to Weather and Climate*, McGraw-Hill.

Reference: Blair, *Weather Elements*, Prentice-Hall.

Two lectures and one laboratory period of two hours a week. Mr. Schofield, Mr. Davis. 3 units.

Lectures: 11.30-12.30, Wednesday and Friday.

Laboratory: To be arranged.

(Given in 1940-41 and alternate years.)

3. *Human and Regional Geography*.—A study of man and his physical environment treated regionally.

Prerequisite: Geography 1.

References: Pomfret, *The Geographic Pattern of Mankind*, Students' Edition, Appleton-Century; Huntington, Williams, Valkenburg, *Economic and Social Geography*, Wiley.

Three hours a week. Mr. Davis. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

4. *Physiography*.—This course is intended for advanced students in geography and geology. The subject represents the overlap between these two major sciences. It involves a study of the processes, principles, and laws of land formation, types of land forms, and their distribution.

Prerequisite: Geography 1 or Geology 1.

Two lectures and one laboratory period of two hours a week.
Mr. Davis. 3 units.

(Given in 1939-40 and alternate years.)

Economics 10 (*Economic Geography*).—(See Economics 10 under Department of Economics.)

Mr. Day, Mr. Warren. 3 units.

NOTE. This course is given jointly by the two departments concerned, and may be taken as a Second Year course in Geography.

Department of History

Professor: W. N. Sage.

Professor: F. H. Soward.

Associate Professor: A. C. Cooke.

Instructor: Sylvia Thrupp.

Students who intend to specialize in history or who are preparing for the Teacher Training Course are advised to associate with it such allied subjects as economics, government, sociology, and geography. Economics 1, 2, 9, 10, Government 1, 3, 4, Sociology 1, and Geography 1 will be found especially helpful. Attention, however, is called to the regulation in paragraph 3, page 77.

A reading knowledge of French and German will be found extremely valuable in Third and Fourth Year courses, while in certain classes of more advanced work Latin is indispensable.

French, at least, will be required for Honours work, and the study of German is strongly recommended.

FIRST AND SECOND YEARS

Social Science 1.—A survey of man's relation to his environment and to his social heritage, designed to serve as an introduction to more advanced courses in the departments of Economics and History. It will begin with a description of institutional origins and the rise and fall of civilization and will then deal with the political and economic institutions of the world today.

This course is offered with the collaboration of the Department of Economics.

Readings to be assigned.

Three hours a week. 3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

(Not given in 1939-40.)

1. *Main Currents in Twentieth-Century History*.—This course completes the study of world history in the high schools and offers a background for contemporary world problems. The following

topics are discussed: The Great Powers at the Opening of the Century, Alliance and Entente, The Coming of the World War, The World War, The Peace Treaties, The New Map of Europe, Reparations and War Debts, Security and Disarmament, The League of Nations, The Russian Revolution and the U.S.S.R., Italy and Fascism, Germany from Empire to Third Reich, Post-War Britain and Democratic France, The New Balkans, The Little Entente and Poland, Nationalism and Imperialism in the Far East, The United States and World Peace.

Text-books: Benns, *Europe Since 1914*, or Langsam, *The World Since 1914*; Cole, *The Intelligent Man's Review of Europe Today* (for upper year credit); Schmitt, *Triple Alliance and Triple Entente*; Horrabin, *Atlas of Current Events*.

Essays will be assigned throughout the session. (Extra work will be required from Third and Fourth Year students taking this course.)

Three hours a week. Mr. Soward.

3 units.

Lectures: 2.30-3.30, Monday and Wednesday.

The third hour will be devoted to group discussions.

2. *The History of Canada*.—Geographical factors; exploration and early settlements; the French Régime; constitutional development, 1759-1867; economic and social progress to Confederation; development of the Dominion of Canada since 1867; Canada in the Commonwealth; Canada in the World.

Text-books: Wittke, *A History of Canada*; Trotter, *Canadian History: A Syllabus*; Siegfried, *Canada*.

Essays will be assigned throughout the session. (Extra work will be required from Third and Fourth Year students taking this course.)

Three hours a week. Mr. Sage.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

(Given in 1940-41 and alternate years.)

3. *Canada West of the Great Lakes*.—The place of Western Canada in Canadian development; Anglo-French rivalry in the West; struggle for supremacy between the Hudson's Bay Company and the North West Company; the Selkirk Settlement; discovery and exploration of the Pacific Coast; the Maritime fur trade; the North West Company in British Columbia; the Western Department of the Hudson's Bay Company, 1821-70; rivalries in Old Oregon; the colonial period of British Columbia; Confederation; the Riel rebellion; the rise of the new West; the agrarian movement on the prairies; development of the Province of British Columbia.

Text-books: Wittke, *A History of Canada*; Howay, *British Columbia, the Making of a Province*; Sage, *Sir James Douglas and British Columbia*; England, *The Colonization of Western Canada*; Morton, *A History of the Canadian West to 1870-71*.

Essays will be assigned throughout the session.

Three hours a week. Mr. Sage. 3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

(Given in 1939-40 and alternate years.)

4. *Mediaeval Europe, 500-1300*.—A general outline of Mediaeval history from the fall of the Roman Empire to the 13th century. Sketches of Byzantine history and of the rise of Islam are included, but the main emphasis is laid upon the culture of the 12th and 13th centuries in the West.

Text-book: Collins, *A History of Mediaeval Civilisation in Europe*.

Essays are assigned throughout the session. (Extra work will be required from Third and Fourth Year students taking this course.)

Three hours a week. Miss Thrupp. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

THIRD AND FOURTH YEARS

History 10, 11, 12, 13, 14, 16, and 18 are intended primarily for Third Year students; History 15, 19, and 20 for Fourth Year. History 10 must be taken by all candidates for Honours.

All Honours students (whether in History alone or in a combined course) must take the History seminars in their Third and Fourth Years. The seminar is offered as a training in intensive work and carries no credits.

If the graduating essay be written in History it will count as 3 units.

10. *British History to 1485*.—This course aims at an interpretation of the political, constitutional, economic, and religious development of the British Isles from the earliest times to the close of the Middle Ages.

Text-books: Trevelyan, *A History of England*; Williamson, *The Evolution of England*; Cross, *Shorter History of England and Greater Britain*; Adams and Stephens, *Select Documents of English Constitutional History*, or Stephenson and Marcham, *Sources of English Constitutional History*; Adams, *Constitutional History of England*; Hall and Albion, *A History of England and the British Empire*.

Essays will be assigned throughout the session.

Three hours a week. Mr. Sage. 3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

11. *The Development and Problems of the British Empire-Commonwealth.*

This course is given in two parts, and may be taken for credit in two successive years.

(a) The Development and Problems of the British Commonwealth.

(b) The Development and Problems of the British Colonial Empire.

In the session 1939-40, and alternate years, 11 (b) will be given, which deals with the establishment of British authority in India, the Crown Colonies, Protectorates and Mandates, and with the principles and problems of colonial administration.

Bibliographies for voluntary summer reading will be supplied on application to the instructor in charge.

Three hours a week. Mr. Cooke.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

12. *History of the United States of America.*—This course begins with a sketch of the American colonies at the outbreak of the Revolution and traces the history of the United States from the commencement of the War of Independence to the close of the World War.

Text-books: Charles and Mary Beard, *The Rise of American Civilisation*; Faulkner, *American Political and Social History*.

Essays will be assigned throughout the session.

Three hours a week.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

13. *The Age of the Renaissance and Reformation.*—A study of the cultural development of Europe from the 14th to the 17th century, including a consideration of the transition from the Mediaeval to the modern world; humanism; Renaissance art; overseas exploration and expansion; the rise of national states; the Reformation; the scientific revolution and intellectual developments.

Text-books: Lucas, *The Renaissance and the Reformation*; Smith, *A History of Modern Culture—The Great Awakening*.

Readings and reports will be assigned.

Three hours a week. Mr. Cooke.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

14. *The Age of Louis XIV; The Revolutionary and Napoleonic Era.*—Europe in the 17th and 18th centuries; the establishment of absolutism; the ascendancy of France; expansion and conflict overseas; the enlightened despots; the age of reason; the French Revolution; Napoleon; the Congress of Vienna.

Text-books: Wakeman, *The Ascendancy of France*; Reddaway, *A History of Europe, 1715-1814*; Bruun, *The Enlightened Despots*; Gottschalk, *The Era of the French Revolution*, or Gershoy, *The French Revolution and Napoleon*; Brinton, *A Decade of Revolution*.

Readings and reports will be assigned.

Three hours a week. Mr. Cooke.

3 units.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

15. *Europe, 1815-1914*.—The political, social, and economic history of the chief countries of continental Europe, with especial attention to international relations.

Text-books: Hayes, *A Political and Cultural History of Modern Europe*, Vol. II; Moon, *Imperialism and World Politics*; Buell, *International Relations*.

Essays will be assigned throughout the session.

Three hours a week. Mr. Soward.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

16. *Social and Economic History of Mediaeval Europe*.—The object of this course is to study the origins of our commercial culture as it arose in the Mediaeval town of the 11th century, and to trace the gradual transition from feudal to commercial ideals in the four centuries following. The course deals with the culture of the various classes of Mediaeval society, the contribution of the Church to economic development, avenues of social opportunity, industrial inventions, social conflict in the later Middle Ages, the birth of the modern state, and national economy.

Text-books: Pirenne, *Economic and Social History of the Middle Ages*, and *Mediaeval Cities and the Revival of Trade*; Boissonnade, *Life and Work in Mediaeval Europe*. Further reading assigned.

Essays will be assigned throughout the session.

Three hours a week. Miss Thrupp.

3 units.

Offered as a reading course in 1939-40.

17. *Social and Economic History of Europe, 1500-1914*.—This course aims to estimate the part played by social and economic forces in shaping European institutions throughout the various phases of modern history, with especial emphasis upon the changes of the 19th century.

Text-books: Renard and Weulersse, *Life and Work in Modern Europe*; Birnie, *An Economic History of Modern Europe*.

Essays will be assigned.

Three hours a week. Miss Thrupp.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

18. *British History, 1485-1760*.—This course offers a general survey of political, economic, social, and cultural change in the Tudor and Stuart periods and the early 18th century. Some knowledge of contemporary literature in any of the three periods will be helpful.

Text-books: Trevelyan, *History of England*; Adams and Stephens, *Select Documents of English Constitutional History*; Bland, Brown and Tawney, *English Economic History, Select Documents*.

Essays will be assigned throughout the session.

Three hours a week. Miss Thrupp.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

19. *Great Britain Since 1760*.—This course aims at an interpretation of the constitutional, political, economic, and religious development of the British Isles since 1760.

Text-books: Robertson, *England Under the Hanoverians*; Williamson, *The Evolution of England*; Fay, *Life and Labour in the Nineteenth Century*; Trevelyan, *British History in the Nineteenth Century*; Ensor, *England, 1870-1914*; Stephenson and Marcham, *Sources of English Constitutional History*; Bland, Brown and Tawney, *English Economic History, Select Documents*; Woodward, *The Age of Reform*; Hall and Albion, *A History of England and the British Empire*.

Essays will be assigned throughout the session.

Three hours a week. Mr. Sage.

3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

20. *The Evolution of Canadian Self-Government*.—A survey of the period from the Peace of Utrecht to the present day. The following subjects will be dealt with: French and British colonial systems; British experience in Acadia; British policy after the Treaty of Paris; the Quebec Act; the effect of the American Revolution; the Constitutional Act; the opening of the West; the War of 1812; the formation of parties and the struggle for reform; Durham's Report; the achievement of responsible government; Confederation and the completion of the Dominion; the development of responsible government and the growth of nationhood.

Text-books: Martin, *Empire and Commonwealth*; Kennedy, *The Constitution of Canada*; Kennedy, *Statutes, Treaties and Documents of the Canadian Constitution, 1713-1929*.

Essays will be assigned throughout the session.

Three hours a week. Mr. Soward.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

(Not given in 1939-40.)

21. *Methods in High School Social Studies*.—This course is offered primarily for students in the Teacher Training Course and does not carry undergraduate credit.

Text-book: Wesley, *Teaching the Social Studies*, Heath.

Readings to be assigned.

Two hours a week in Spring Term only. Mr. Cooke. (Time to be arranged.)

22. *Honours Seminars*:

(a) Third Year: *Historical Method*. Mr. Soward.

(b) Fourth Year: *Problems of Bibliography*. Mr. Cooke.

23. *M.A. Seminar: The History of British Columbia*. Mr. Sage.
(Time of seminars to be arranged.)

24. *History of Latin America*.

3 units.

(Not given in 1939-40.)

25. *Historiography*.—For M.A. students.

Time to be arranged. Miss Thrupp.

Latin 7. *Roman History from 133 B.C. to 180 A.D.* (See under Classics, Page 120.)

3 units.

Department of Mathematics

Professor: Daniel Buchanan.

Professor: F. S. Nowlan.

Professor: Ralph Hull.

Professor: L. Richardson.

Associate Professor: Walter H. Gage. (On leave of absence.)

Assistant Professor: F. J. Brand.

Instructor: May L. Barclay.

Lecturer: Jean Fisher Sargent.

Lecturer: J. Maurice Kingston.

Mathematics 2 is a prerequisite for all the Honours courses.

GENERAL COURSES

1. *Introductory Mathematics*.—An elementary course in algebra, including proportion, variation, logarithms, progressions, theory of quadratic equations, permutations, combinations, annuities, binomial theorem; analytical geometry, including the study of the straight line and the circle, with an introductory study of the parabola, ellipse, and hyperbola; elementary trigonometry.

Text-books: Brink, *Algebra, A College Course*, Appleton-Century; Nowlan, *Analytic Geometry*, McGraw-Hill; Brink, *Plane Trigonometry with Tables*, Appleton-Century.

Four hours a week.

3 units.

Lectures:

Section 1, 9.30-10.30, Monday, Wednesday, Friday; 1.30-2.30, Tuesday;

Section 2, 9.30-10.30, Tuesday, Thursday, Saturday; 1.30-2.30, Thursday;

Section 3, 11.30-12.30, Tuesday, Thursday, Saturday; 1.30-2.30, Thursday.

2. (a) *Algebra*.—The binomial theorem, complex numbers, induction, remainder theorem, Horner's method, exponential, logarithmic, and other series, undetermined coefficients, partial fractions, convergence and divergence, determinants.

Text-book: Nowlan, *College Algebra*.

Two hours a week. Mr. Nowlan.

2 units.

Lectures:

Section 1, 10.30-11.30, Monday and Wednesday;

Section 2, 10.30-11.30, Tuesday and Thursday.

(b) *Calculus*.—An introductory course in differential and integral calculus, with various applications.

Text-book: Woods and Bailey, *Calculus*.

One hour a week. Mr. Buchanan, Miss Barclay.

1 unit.

Lecture: 10.30-11.30, Friday or 10.30-11.30, Saturday.

3. *The Mathematical Theory of Investments*.—This course deals with the exponential law, the power law, curve fitting, the theory of interest, annuities, debentures, valuation of bonds, sinking funds, depreciation, probability and its application to life insurance.

Text-book: Hart, *Mathematics of Investment*, revised, Heath.

Reference: Bauer, *Mathematics Preparatory to Statistics and Finance*, Macmillan.

Three hours a week. Mr. Brand.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

4. *Descriptive Astronomy*.—An introductory course dealing with the solar system, stellar motions, the constitution of the stars, and nebulae.

Text-book: Baker, *Astronomy*, Van Nostrand.

Two hours a week. Mr. Buchanan.

2 units.

Lectures: 2.30-3.30, Tuesday and Thursday.

Students desiring credit for an additional unit in connection with this course may register for Mathematics 18. They will be required to write essays on prescribed subjects dealing with various phases of astronomy.

1 unit.

(Given in 1939-40 and alternate years.)

HONOURS COURSES

10. *Calculus*.—The elementary theory and applications of the subject.

Text-book: Smith, Granville, Longley, *Differential and Integral Calculus*, Ginn.

Three hours a week. Mr. Nowlan. 3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

11. *Plane and Spherical Trigonometry*. — The work in plane trigonometry will deal with the following: Identities and trigonometrical equations, the solution of triangles with various applications, circumscribed, inscribed, and escribed circles, De Moivre's theorem, expansions of $\sin n\theta$ etc., hyperbolic and inverse functions. The work in spherical trigonometry will cover the solution of triangles with various applications to astronomy and geodesy.

Text-book: Durell and Robson, *Advanced Trigonometry*, Bell.

Two hours a week. Mr. Brand. 2 units.

Lectures: 1.30-2.30, Monday and Wednesday.

(Given in 1939-40 and alternate years.)

12. *Differential Equations*.—Ordinary and partial differential equations with various applications to geometry, mechanics, physics, and chemistry.

Text-book: Miller, *Differential Equations*, Macmillan.

This course may be taken concurrently with Mathematics 10.

Two hours a week. Mr. Buchanan. 2 units.

Lectures: 9.30-10.30, Tuesday and Thursday.

13. *Plane and Solid Analytical Geometry*.—A general study of the conics and systems of conics, and elementary work in three dimensions.

Text-book: Nowlan, *Analytic Geometry*, McGraw-Hill.

Three hours a week. Mr. Nowlan. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

14. *Theory of Equations, Determinants, and Matrices*.—A course covering the main theory and use of these subjects.

Text-book: Dickson, *Elementary Theory of Equations*, Wiley.

Three hours a week. Mr. Nowlan. 3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

(Given in 1940-41 and alternate years.)

15. (a) *Higher Algebra*.—A course introductory to the various aspects of modern higher algebra, including groups, matrices, fields, elementary theory of numbers.

Text-book: Turnbull and Aitkin, *Introduction to the Theory of Canonical Matrices*.

References: Albert, *Modern Algebraic Theories*; Bôcher, *Higher Algebra*; Dickson, *Introduction to the Theory of Numbers*; Hilton, *Finite Groups*.

Two hours a week. Mr. Hull.

2 units.

Lectures: 11.30-12.30, Tuesday and Thursday.

(Given in 1939-40 and alternate years.)

15. (b) *Infinite Processes*.—An introduction to the theory of convergence, including infinite series of real and complex numbers, infinite products, and continued fractions, with various applications.

Text-book: Smail, *Infinite Processes*.

References: Knopp, *Infinite Series* (trans. by Young); Bromwich, *Infinite Series*.

Two hours a week. Mr. Hull.

2 units.

(Given in 1940-41 and alternate years.)

16. *Advanced Calculus*.—A continuation of the previous course in calculus, treating partial differentiation, expansions of functions of many variables, singular points, reduction formulæ, successive integration, elliptic integrals, and Fourier series.

Two hours a week. Mr. Richardson.

2 units.

Lectures: 9.30-10.30, Monday and Wednesday.

17. *Applied Mathematics*.—A course dealing with the applications of mathematics to dynamics of a particle and of a rigid body, and to the two body problem in celestial mechanics.

Prerequisite: Physics 6.

Text-book: Loney, *A Treatise on Dynamics of a Particle and Rigid Bodies*, Cambridge.

References: McMillan, *Statistics and Dynamics*, McGraw-Hill; Byerly, *Generalized Co-ordinates*.

Three hours a week. Mr. Richardson.

3 units.

This course may be taken either as an undergraduate or as a graduate course.

(Given in 1940-41 and alternate years.)

18. *History of Mathematics*.—A reading course covering the historical development of the elementary branches of mathematics from the earliest times to the present. Essays will be assigned.

Mr. Buchanan.

1 unit.

19. *Methods in High School Mathematics*.—This course is offered

primarily for students in the Teacher Training Course and does not carry undergraduate credit.

Readings to be assigned.

Two hours a week. Second Term. Mr. Richardson.

COURSES FOR GRADUATE STUDENTS

20. *Vector Analysis*.—Text-book: Weatherburn, *Vector Analysis*.

21. *Theory of Functions of a Real Variable*.

22. *Theory of Functions of a Complex Variable*.

23. *Differential Geometry*.—Text-book: Weatherburn, *Differential Geometry*.

24. *Projective Geometry*.—Text-book: Veblen and Young, *Projective Geometry*, Vol. I.

25. *Celestial Mechanics*.—Text-book: Moulton, *An Introduction to Celestial Mechanics*.

26. *Ordinary and Partial Differential Equations*.

27. *Theory of Numbers and Algebraic Numbers*.

28. *Linear Algebras*.—Text-book: Dickson, *Algebren und ihre Zahlentheorie*, or Dickson, *Algebras and Their Arithmetics*.

29. *Modern Algebraic Theories*.—Text-book: Dickson, *Modern Algebraic Theories*.

30. *Harmonic and Elliptic Functions*.—Text-books: Byerly, *Integral Calculus*; Whittaker and Watson, *Modern Analysis*; Gray, Mathews and MacRobert, *Bessel Functions*.

31. *Topology*.

32. *Theory of Groups*.

Department of Modern Languages

Professor: D. O. Evans.

Professor: A. F. B. Clark.

Associate Professor: Isabel MacInnes.

Assistant Professor: Janet T. Greig.

Assistant Professor: Dorothy Dallas.

Assistant Professor: Wessie Tipping.

Assistant Professor: Joyce Hallamore.

Assistant Professor: Ronald Hilton.

Assistant Professor: Charles E. Borden.

Instructor: Madame D. Darlington.

Instructor in German: Alice Roys.

With the consent of the professor in charge of the course, a student taking a General Course B.A. degree may be admitted to any course in the Third and Fourth Years in addition to, but not in lieu of, 3 (a) and 4 (a); and a student taking a B.Com. degree may be admitted to French 3 (b) in lieu of French 3 (a). Students

from other universities who have already taken the work of 3 (a) and 4 (a) may be given special permission by the Head of the Department to substitute other courses.

French

1. Texts: *French Short Stories*, Nelson; Molière, *Le Bourgeois gentilhomme*; Didier; Mills, *Free Composition in French*, Nelson; *Les cent meilleurs poèmes lyriques*, Gowans & Gray. For independent reading: Constantin-Weyer, *Cavelier de la Salle*, Ferenczi.

For reference: Berthon, *French Grammar*, Dent.

Prerequisite: Junior Matriculation French or its equivalent.

Three hours a week.

3 units.

Lectures: Section 1, 10.30-11.30, Monday, Wednesday, Friday;
Section 2, 10.30-11.30, Tuesday, Thursday, Saturday;
Section 3, 1.30-2.30, Monday, Wednesday, Friday.

2. Texts: Balzac, *Eugénie Grandet*, Oxford; Anatole France, *Nelson*. Independent reading to include Balzac, *Le père Goriot*, Nelson; A. de Chateaubriant, *Monsieur des Lourdines*, Ferenczi, and the author listed under *Summer Reading*.

Composition in French based on the above readings.

Prerequisite: French 1 or its equivalent.

Three hours a week.

3 units.

Lectures: Section 1, 8.30-9.30, Monday, Wednesday, Friday;
Section 2, 8.30-9.30, Tuesday, Thursday, Saturday;
Section 3, 2.30-3.30, Monday, Wednesday, Friday.

3. (a) *The Literature of the Age of Louis XIV.*—Lectures on the history and social conditions of the period, and on the development of the literature. Careful reading and discussion of the following texts: Schinz and King, *Seventeenth Century French Readings*, Holt; Corneille, *Le Cid*, Didier; Racine, *Iphigénie*, American Book Co., or *Andromaque*, Didier, or *Phèdre*, Heath; Molière, *Le Misanthrope*, Didier, or *L'Avare*, Manchester Univ. Press; *Le Tartuffe*, Didier.

Conversation and written résumés based on the above.

This course is obligatory for all students taking Third Year French. French 2 is a prerequisite. Students who cannot write French with some facility are advised not to attempt 3 (a).

Students who intend to take French throughout the four years or who wish to teach this subject should also take 3 (c).

Three hours a week.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

3. (b) *French Verse*.—A study of the forms of French verse and of poetic style from 1820 onwards. Texts: Berthon, *Nine French Poets*, Macmillan; Victor Hugo, *Selections*, Manchester University Press; Charles Marc des Granges, *Les poètes français 1820-1920*, Hatier.

Independent readings to include Lamartine, *Jocelyn*. See also under *Summer Reading*.

For Honours students.

3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

3. (c) *Phonetics*.—Text-books: Klinghardt and Fourmestraux, *French Intonation Exercises*; Nicolette Pernot, *Exercices de prononciation française*. Training in speaking and essay writing. This course should be taken by all who elect French as a Third Year subject. It may not be substituted for French 3 (a).

3 units.

Lectures: To be arranged.

4. (a) *Modern French Drama*.—A study of the evolution of the drama with special reference to the 19th century. Texts: Victor Hugo, *Hernani*, Nelson; *Ruy Blas*, Delagrave; Alfred de Vigny, *Chatterton*, Oxford; Edmond Rostand, *Cyrano de Bergerac*, Fasquelle. Independent readings include the plays of Marivaux, Voltaire, Sedaine, and Banville listed under *Summer Reading*, together with Alfred de Musset, *Three Plays*, Nelson, and Jean Giraudoux, *La guerre de Troie n'aura pas lieu*, Grasset.

Reference: Stewart and Tilley, *The Romantic Movement in French Literature*, Cambridge.

Prerequisites: French 3 (a), 3 (c).

Three hours a week.

3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

4. (b) *The Literature of the Eighteenth Century*.—Lectures on the history and social conditions of the period, with special emphasis on the *philosophe* movement, and the beginnings of Romanticism. The interrelations of French and English thought and literature will be touched upon. Careful reading and discussion of the following texts: Havens, *Selections from Voltaire*, Century; Mornet, *Rousseau, Morceaux choisis*, Didier; Fallex, *Diderot, Extraits*, Delagrave; Beaumarchais, *Le Barbier de Séville*, Macmillan.

French 3 (a) and 3 (b) are prerequisite.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

4. (c) *French Institutions*.—Lectures on the educational and administrative institutions of modern France; one hour. Oral and written practice, readings, and discussions; two hours.

This course may be taken with French 4 (a), but not in place of it.

Prerequisite: French 3 (c).

Lectures: To be arranged.

3 units.

COURSES FOR GRADUATE STUDENTS

5. (a) *Modern Language Teaching*.—The study and analysis of the methods of teaching modern languages, with special reference to French and German. Theory and practice of high school teaching. Correlation of modern foreign languages with other school subjects.

This course is provided for students in the Teacher Training Course and does not carry undergraduate credit.

5. (b) *The Middle Ages and XVIIth Century*.—Texts: *Le Mystère d'Adam*, Manchester University Press; Rabelais, *Gargantua* xiv, xv, xxi, xxiii, xxiv, *Pantagruel* viii, Jouaust; Montaigne, *Selected Essays*, Manchester University Press; Ronsard, *Poésies choisies*, Garnier.

3 units.

5. (c) *The History of French Criticism*.—French literary criticism and theory, from the Pléiade to the present day. Text-book: Vial-Denise, *Idées et doctrines littéraires*, three vols., Delagrave.

3 units.

5. (d) *Contemporary French Literature*.—The poetic movement from Péguy to the Surréalistes. Texts: *Anthologie de la nouvelle poésie française*, Kra; *Lectures expliquées* from: Valéry, *Variété* i; Gide, *Pages de Journal*; Valéry Larbaud, *Amants, heureux amants*, N.R.F. Further readings to be specified.

3 units.

Summer Reading

Upon entering the courses for the years stated, the student must satisfy the instructor that he has read the books mentioned below.

Second Year:

1. Louis Hémon, *Maria Chapdelaine*, Fayard.

Third Year:

1. Chateaubriand, *Atala*, Larousse.*
2. Madame de Staël, *De l'Allemagne*, Larousse.
3. Rivarol, *Discours sur l'universalité de la langue française*, Larousse.
4. Napoléon Ier., *Lettres, Bulletins, Proclamations*, Hatier.

Fourth Year:

1. Marivaux, *Le Jeu de l'amour et du hasard*, Larousse.
2. Voltaire, *Contes*, Hatier.
3. Voltaire, *Zaïre*, Larousse.

4. Sedaine, *Le philosophe sans le savoir*, Larousse.*
5. Bernardin de Saint-Pierre, *Paul et Virginie*, Larousse.*
6. Musset, *Fantasio*, Larousse.
7. Banville, *Gringoire*, Hatier.*

NOTE. Books marked with an asterisk (*) are expected to be read by Honours students only.

German

Beginners' Course.—Schinnerer, *Beginning German*, Macmillan; Durian, *Kai aus der Kiste*, Holt. 3 units.

Lectures:

Sections 1 and 2, 10.30-11.30, Monday, Wednesday, and Friday;
 Section 3, 11.30-12.30, Monday, Wednesday, and Friday;
 Section 4, 1.30-2.30, Monday, Wednesday, and Friday;
 Section 5, 2.30-3.30, Monday, Wednesday, and Friday.

Each section has also a 4th period, to be arranged.

1. Texts: Schinnerer, *Continuing German*, Macmillan; Kästner, *Das fliegende Klassenzimmer*, Crofts; Röseler, *Moderne Deutsche Erzähler*, Norton; Alexis and Pfeiler, *Im Deutschland*, Midwest Book Co.; Bruns, *German Lyrics*, Heath.

Science section with alternate reading.

Prerequisite: Junior Matriculation or Beginners' German.

Three hours a week. 3 units.

Lectures:

Section 1, 8.30-9.30, Tuesday, Thursday, and Saturday;

Sections 2 and 3, 9.30-10.30, Tuesday, Thursday, and Saturday.

Each section has also a 4th period, to be arranged.

2. Texts: Whitney and Stroebe, *Easy German Composition*, Holt; Diamond and Schomaker, *Lust und Leid*, Holt; Eichendorff, *Aus dem Leben eines Taugenichts*, Prentice-Hall; Thomas Mann, *Tonio Kröger*, Crofts; Bruns, *Book of German Lyrics*.

Prerequisite: German 1 or its equivalent.

Three hours a week. 3 units.

Lectures:

Section 1, 11.30-12.30, Monday, Wednesday, and Friday;

Section 2, 2.30-3.30, Monday, Wednesday, and Friday.

3. (a) *The Classical Period.*—Lectures on the development of eighteenth century literature. Texts for special study: Lessing, *Emilia Galotti*, Heath; Goethe, *Faust I*, Heath; Schiller, *Die Jungfrau von Orleans*, Holt. Some knowledge will also be required of Lessing's *Minna von Barnhelm*, Goethe's *Iphigenie*, and Schiller's

Maria Stuart. Composition text: Whitney and Stroebe, *German Composition*, Holt.

Three hours a week. 3 units.

Lectures: 8.30-9.30, Tuesday, Thursday, and Saturday.

Summer Reading. Before entering German 3 (a) students must read: Fleissner, *Deutsches Literatur-Lesebuch*, Crofts, to page 92. (Robertson, *The Literature of Germany*, Home University Library, is also recommended.)

3. (b) *The Novelle.*—Lectures on the development of the German Novelle, with special emphasis on the XIXth century.

Text: *Deutsche Erzähler*, Insel Verlag. Extensive independent reading will be expected. 3 units.

4. (a) *Nineteenth Century German Drama.*—Text: Campbell, *German Plays of the Nineteenth Century*, Crofts. 3 units.

4. (b) *Nineteenth Century German Fiction.* 3 units.

Courses 4 (a) and 4 (b) are given alternately.

5. (a) *Lessing, Goethe, and Schiller.*—Reading and discussion of the most important works of these authors. 3 units.

5. (b) *Middle High German.*—Text-book: Bachmann, *Mittelhochdeutsches Lesebuch*. 3 units.

Department of Philosophy and Psychology

Professor: H. T. J. Coleman.

Professor: J. A. Irving.

Assistant Professor: Joseph E. Morsh.

Assistant Professor of Psychology and Education: Frederick T. Tyler.

Philosophy

1. *Introduction to Philosophy.*—This course is intended for two classes of students: first, those who contemplate specializing in philosophy either as Honours or as Pass students in their Third and Fourth Years; and second, those who wish a single course which will give in an untechnical way a statement and discussion of fundamental philosophical problems and thus assist them in their special studies in other departments.

Text-book: Patrick, *Introduction to Philosophy*, revised ed., Houghton Mifflin.

Three hours a week. Mr. Irving. 3 units.

Lectures: 2.30-3.30, Monday, Wednesday, and Friday.

2. *Ethics.*—The development of ethical thought within the history of civilization from the age of the Greeks to the present day. The historical and evolutionary approach will be followed by a

systematic discussion of the fundamental problems of ethics in the light of the modern sciences of man and society.

Text-book: Dewey and Tufts, *Ethics*, revised edition, Holt.

References: Hobhouse, *Morals in Evolution*; Kant, *Metaphysic of Morals*; Mill, *Utilitarianism*; Dewey, *Human Nature and Conduct*.

Three hours a week. Mr. Coleman. 3 units.

Lectures: 9.30-10.30, Tuesday, Thursday, and Saturday.

3. *History of Greek Philosophy from Thales to Aristotle.*

Text-books: Bakewell, *Source Book in Ancient Philosophy*, Scribners; Burnet, *Greek Philosophy* (Part I), Macmillan. In connection with this course a special study will be made of Plato's *Republic*, *Protagoras*, and *Gorgias*.

Three hours a week. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

(Given in 1940-41 and alternate years.)

4. *History of Modern Philosophy from the Renaissance to Kant.*

Text-book: Rand, *Modern Classical Philosophers*.

References: Alexander, *A Short History of Philosophy*, Macmillan, and the various histories of philosophy.

Three hours a week. Mr. Coleman. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

(Given in 1939-40 and alternate years.)

5. *The Philosophy of Kant*, with special study of the *Critique of Pure Reason*.

Three hours a week. Mr. Coleman. 3 units.

Lectures: Hours will be arranged.

6. *Philosophical Movements Since the Time of Kant.*—The main currents of philosophical thought in the nineteenth and twentieth centuries, with special reference to the literary and scientific movements, including the critical philosophy, the romantic movement, sociological positivism, the development of modern psychology in relation to philosophy and education, the influence of evolution on modern thought, pragmatism, realism, and logical positivism.

Text-book: Mead, *Movements of Thought in the Nineteenth Century*, University of Chicago.

References: Rand, *Modern Classical Philosophers*; Fisch and Anderson (ed.), *Anthology of American Philosophy*.

Three hours a week. Mr. Irving. 3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

(Given in 1940-41 and alternate years.)

7. *Philosophy of Education*.—A course of lectures and discussions dealing with educational movements since the beginning of the 19th century, and with the theories of life and of mind which are implicit in these movements.

Text-books: Spencer, *Education*, Everyman; Dewey, *Democracy and Education*, Macmillan.

References: Demiaskevich, *An Introduction to the Philosophy of Education*; Jacks, *The Education of the Whole Man*; Martin, *The Meaning of a Liberal Education*; Lodge, *The Philosophy of Education*; Whitehead, *The Aims of Education and Other Essays*; Hutchins, *The Higher Learning in America*.

Psychology 1 or Philosophy 1 is recommended as preparatory to this course.

Three hours a week. Mr. Coleman.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

8. *Logic and Scientific Method*.—A general course in the fundamental problems of logic and scientific method, for students of the natural and social sciences as well as philosophy. The function of reason in the discovery and systematization of scientific knowledge will be emphasized throughout the course.

Text-books: Burt, *Principles and Problems of Right Thinking*, latest edition, Harper; Russell, *The Scientific Outlook*, Allen & Unwin.

Three hours a week. Mr. Irving.

3 units.

Lectures: 11.30-12.30, Tuesday and Thursday, and a third hour to be arranged.

9. *Social and Political Philosophy*.—A study of modern political theory, with emphasis upon the relation between changes in the general current of political ideas and beliefs and changes in the social and political structure. The leading political ideas today: democracy and aristocracy; collectivism and individualism; socialism, communism, fascism; nationalism and pluralism.

Text-book: MacIver, *The Modern State*, Oxford.

References: Dewey, *Liberalism and Social Action*; Ellwood, *A History of Social Philosophy*; Hobhouse, *Social Development*; Hocking, *Man and the State*; Laski, *The State in Theory and Practice*.

Three hours a week. Mr. Irving.

3 units.

Lectures: 10.30-11.30, Tuesday, Thursday, and Saturday.

(Given in 1939-40 and alternate years.)

10. *Philosophy of Art*.—The development of the theory of art from the age of the Greeks to the present time in relation to philo-

sophical and artistic movements. The definition, purpose, and standard of art; the application of general aesthetic principles to poetry and the fine arts.

Text-book: Carritt, *Philosophies of Beauty*.

References: Bosanquet, *A History of Aesthetic*; Ducasse, *Philosophy of Art*; Prall, *Aesthetic Judgment*; Santayana, *The Sense of Beauty*; Stace, *The Meaning of Beauty*.

Prerequisite: Philosophy 1.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Tuesday and Thursday, and a third hour to be arranged.

(May not be given in 1939-40.)

Psychology

A. *Introduction to Psychology*.—Psychology and people; the background of behaviour; psychological problems; observing, learning, and thinking. This course is intended primarily for those students who propose to take no further work in psychology. It will not be accepted as a preparation for advanced courses in psychology. Open to First Year students.

Text-book: Ruch, *Psychology and Life*, Scott, Foresman.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 8.30-9.30, Monday, Wednesday, and Friday.

1. *Elementary Psychology*.—Psychology as a science; the nervous system; sensation; perception; emotion; motivation; attention; learning; thinking; intelligence; personality. This course is introductory to courses in advanced psychology. Not open to First Year students.

Text-book: Warren and Carmichael, *Elements of Human Psychology*, Houghton-Mifflin.

Prerequisite: Beginning with the academic year 1940-41 Biology 1 or Physics A or 1 will be prerequisite.

Three hours a week. Mr. Irving.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

2. *Elementary Experimental Psychology*.—The aim of this course is to introduce the student to the scientific method as applied to psychology. The work will include performance of individual and group experiments involving the various sense modes, images, illusions, motor performance, reaction time, hand-eye coördination, attention, learning, memory, and reasoning. Open to students of the Third and Fourth Years by permission of the instructor.

Text-books: Seashore, *Elementary Experiments in Psychology*, Holt; Bills, *Experimental Psychology*, Longmans.

Prerequisite: Psychology 1.

Two lectures and two hours laboratory a week. Mr. Morsh.

3 units.

Lectures: To be arranged.

3. *Social Psychology*.—A study of those particular phases of mental life and development which are fundamental in social organization and activity. Open only to Third and Fourth Year students.

Text-book: Young, *Social Psychology*, Crofts.

Prerequisite: Psychology 1 or Philosophy 1.

Three hours a week. Mr. Coleman.

3 units.

Lectures: 11.30-12.30, Tuesday, Thursday, and Saturday.

4. *Psychology of Adjustment*.—Origins and modification of behaviour, motivation, varieties of adjustive behaviour, personality, mental hygiene, guidance. Open to students of the Third and Fourth Years.

Text-book: Shaffer, *The Psychology of Adjustment*, Houghton Mifflin.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 1.30-2.30, Monday, Wednesday, and Friday.

5. *Abnormal Psychology*.—The study of abnormal behaviour and mental processes as an approach to the understanding of human nature. Open to Third and Fourth Year students.

Text-book: Moss and Hunt, *Foundations of Abnormal Psychology*, Prentice-Hall.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

(Given in 1940-41 and alternate years.)

6. *Psychological Tests and Measurements*.—The history, principles, and application of mental tests. The lectures will be supplemented with demonstrations and practice in administering individual and group tests. Students are admitted to this course only by permission of the instructor.

Text-book: Freeman, *Mental Tests*, Houghton Mifflin.

Prerequisite: Psychology 1.

Three hours a week.

3 units.

Lectures: 1.30-2.30, Tuesday and Thursday, and a third hour to be arranged.

7. *Applied Psychology*.—The applications of psychology in the professions, in business, and in industry; advertising; salesmanship; personnel management; human efficiency; human motivation.

Open to students of the Third and Fourth Years.

Text-book: Husband, *Applied Psychology*, Harpers.

Prerequisite: Psychology 1.

Three hours a week. Mr. Morsh.

3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

(Given in 1939-40 and alternate years.)

Department of Physics

Professor: Gordon Merritt Shrum.

Professor: A. E. Hennings.

Assistant Professor: Oscar E. Anderson.

Assistant Professor: A. M. Crooker.

Assistant Professor: Harold D. Smith.

Assistant Professor: Kenneth C. Mann.

PRIMARILY FOR FIRST AND SECOND YEAR STUDENTS

A. *Introduction to Physics*.—A course of demonstration lectures in non-mathematical language presenting the fundamental principles of physics so that they can be understood by students who have had no previous special training in the subject. The lectures deal with the principles of mechanics, properties of matter, heat, light, sound, and electricity and are supplemented by practical work in the laboratory. The chief aim of the course is to give the minimum acquaintance with physical science requisite for a liberal education to those whose studies will be mainly literary. Students must reach the required standing in both theoretical and practical work. Open only to students who have not matriculated in physics.

Text-book: Millikan, Gale and Edwards, *A First Course in Physics for Colleges*, Ginn.

Three lectures and one two-hour laboratory period a week.

3 units.

Lectures: Section 1, 8.30-9.30, Tuesday, Thursday, Saturday;

Section 2, 9.30-10.30, Tuesday, Thursday, Saturday.

1. *Elementary Physics*.—A study of general college physics suitable for those students who have obtained credit for Junior Matriculation Physics or its equivalent. The course covers the fundamental principles of mechanics, properties of matter, heat, light, sound, electricity, and some of the more recent developments in physics in a more quantitative way than Physics A.

Text-book: Stewart, *Physics, A Text-book for Colleges*, Ginn.

References: Watson, *A Text-book of Physics*, Longmans; Kaye and Laby, *Physical and Chemical Constants*, Longmans.

Prerequisite: Junior Matriculation Physics or Physics A.

Three lectures and one two-hour laboratory period a week.

3 units.

Lectures: Section 1, 8.30-9.30, Monday, Wednesday, Friday;
Section 2, 9.30-10.30, Monday, Wednesday, Friday.

2. *General Physics*.—This course in general physics is offered primarily for those students who intend to proceed to a medical course. The course is also suitable for those students who plan to major in the humanities and desire a second course in physics. Concurrent with a more advanced study of general physics, special emphasis is placed upon those topics which are most important in medicine.

Candidates for Honours in Physics receive no credit for this course.

Prerequisite: Physics 1.

Three lectures and two hours laboratory a week. 3 units.

Lectures: 11.30-12.30, Monday, Wednesday, and Friday.

(May not be given in 1939-40.)

3. *General Physics*.—This course is designed for those students who plan to teach general science in high school and who are not majoring in Physics. In addition to a more advanced study of general physics than is usual in a college text, a critical study of selected topics as presented in a number of high school texts will be made. The laboratory period will be devoted to acquiring laboratory technique along the lines most valuable to prospective teachers.

Candidates for Honours in Physics receive no credit for this course.

Text-book: To be announced.

Prerequisite: Physics 1.

Two lectures and three hours laboratory a week. 3 units.

4. *Mechanics, Molecular Physics, and Heat*.—A study of statics and dynamics of both a particle and a rigid body, the laws of gases and vapours, temperature, hygrometry, capillarity, expansion, and calorimetry.

Text-books: Reynolds, *Elementary Mechanics*, Prentice-Hall; Edser, *Heat for Advanced Students*, 1936 edition, Macmillan.

Prerequisite: Physics 1.

Three lectures and three hours laboratory a week. 3 units.

Lectures: 9.30-10.30, Monday, Wednesday, and Friday.

Laboratory: Section 1, 1.30-4.30, Tuesday; Section 2, 1.30-4.30, Thursday.

PRIMARILY FOR THIRD YEAR STUDENTS

5. *Electricity and Magnetism*.—A study of the fundamentals of

magnetism and electricity, including alternating currents and electron physics.

Prerequisite: Physics 1.

Text-book: Zeleny, *Elements of Electricity*, McGraw-Hill.

Three lectures and three hours laboratory a week. 3 units.

Lectures: 10.30-11.30, Monday, Wednesday, and Friday.

Laboratory: 2:30-5.30, Monday or Friday.

6. *Theoretical Mechanics*.—A selected course in statics and in dynamics of a particle and of a rigid body.

Text-book: Edwards, *Analytic and Vector Mechanics*, McGraw-Hill.

Two lectures a week.

2 units.

7. *Introduction to Mathematical Physics*.—A course of lectures upon selected topics, including elasticity, viscosity, surface tension, gravitation, heat conduction, wave motion, and hydro-dynamics.

Two lectures a week.

2 units.

8. *Advanced Optics*.—A study of geometrical and physical optics, supplemented by laboratory work, covering optical instruments, interference, diffraction, polarisation, the nature of light, and experiments on ether drift.

Text-book: Monk, *Light*, McGraw-Hill.

References: Meyer, *The Diffraction of Light, X-Rays and Material Particles*; the standard treatises on optics of Drude, Houston, Preston, and Wood.

Two lectures and six hours laboratory a week.

3 units.

9. *Elementary Modern Physics*.—A survey of the fundamental ideas underlying modern physics. The arrangement of the material is designed especially to suit the needs of general science teachers and others who wish to study some of the recent developments in physics. Analytical demonstrations, such as are given, do not involve advanced mathematics. Among the topics treated are: electronic phenomena, radio and television, the nature of light and electromagnetic radiation, X-rays, the *quantum* theory, spectroscopy, astrophysics, relativity, radioactivity, cosmic rays, and elementary particles.

Candidates for Honours in Physics receive no credit for this course.

Prerequisite: Physics A or 1.

Text-books: Jauncey, *Modern Physics*, Van Nostrand; Blackwood, *Outline of Atomic Physics*, Wiley.

Two lectures and three hours laboratory a week.

3 units.

(May not be given in 1939-40.)

PRIMARILY FOR FOURTH YEAR STUDENTS

10. *Light*.—A short lecture course for students who have not taken Physics 8. A study of optical instruments, light sources and filters, spectroscopy, photometry, energy measurements, refractometers, interference, diffraction, and polarised light.

Text-book: Robertson, *Introduction to Physical Optics*, Van Nostrand; or, Jenkins and White, *Fundamentals of Physical Optics*, McGraw-Hill.

One lecture a week.

1 unit.

11. *Electricity and Magnetism*.—In this course especial attention is given to the theoretical phases of electricity and magnetism.

Prerequisites: Physics 4 and 5 and Mathematics 10.

Text-book: Page and Adams, *Principles of Electricity*, Van Nostrand.

Reference: Harnwell, *Principles of Electricity and Magnetism*, McGraw-Hill.

Two lectures a week.

2 units.

12. *Introduction to Atomic Structure*.—A course of lectures dealing with the conduction of electricity through gases, cathode and positive rays, elementary spectroscopy, X-rays, radioactivity, and other atomic phenomena.

Prerequisites: Physics 4 and 5 and Mathematics 10.

Text-book: Richtmyer, *Introduction to Modern Physics*, McGraw-Hill.

Two lectures a week.

2 units.

13. *Kinetic Theory of Gases*.—A course of lectures giving an exposition of the classical deductions and an outline of recent experimental advances of the subject.

Text-book: Loeb, *Kinetic Theory of Gases*.

Two lectures a week.

2 units.

14. *Thermodynamics*.—A course of lectures covering the fundamental principles of the subject.

Text-book: Birtwistle, *The Principles of Thermodynamics*.

One lecture a week.

1 unit.

19. *Experimental Physics*.—This is chiefly a laboratory course covering work in thermionics, spectroscopy, high vacua, and general laboratory technique. Carefully prepared reports, abstracts, and bibliographies constitute an essential part of the course.

Text-books: Hoag, *Electron and Nuclear Physics*, Van Nostrand;

Harnwell and Livingood, *Experimental Atomic Physics*, McGraw-Hill; Strong, *Procedures in Experimental Physics*, Prentice-Hall.

Six hours laboratory a week. 2 or 3 units.

With the consent of the Head of the Department, Fourth Year students may select one or more units from the following graduate courses.

PRIMARILY FOR GRADUATE STUDENTS

20. *Spectroscopy*.—A study of the methods of excitation and observation of spectra, series in arc and spark spectra, multiplets, Zeeman and Stark effects, and band spectra.

One lecture a week. 1 unit.

21. *Radiation and Atomic Structure*.—A study of the theories of radiation and miscellaneous related topics selected from current literature.

One lecture a week. 1 unit.

22. *Advanced Electricity and Magnetism*. — A study of the electromagnetic theory and its application, the theories of metallic conduction, and electrical oscillations.

One lecture a week. 1 unit.

23. *Vector Analysis*.—A course of lectures upon the applications of vector analysis to problems in physics.

One lecture a week. 1 unit.

24. *X-rays and Crystal Structure*. — A study of the modern methods of production and observation of X-rays, the Compton effect, X-ray analysis, and the structure of crystals.

One lecture a week. 1 unit.

25. *Theory of Measurements*.—A lecture course on the combination of observations, including a consideration of interpolation formulae, normal frequency distributions, and least squares.

One lecture a week. 1 unit.

26. *The Theory of Potential*. — A general course giving the applications of the theory of potential to physics.

One lecture a week. 1 unit.

27. *The Theory of Relativity*.—An introductory course to the theory of relativity.

One lecture a week. 1 unit.

28. *Quantum Mechanics*. — An introduction to the theory of quantum mechanics, and the application of wave mechanics to atomic problems.

One lecture a week. 1 unit.

40. *Methods in High School Physics*. — This course is offered primarily for students in the Teacher Training Course and does not carry undergraduate credit. Readings to be assigned.

Two lectures a week. Second Term.

Department of Zoology

Professor: C. McLean Fraser.

Associate Professor: G. J. Spencer.

Assistant Professor: Gertrude M. Watney.

NOTE. Biology 1 is prerequisite to all courses in Zoology.

1. *General Morphology*.—General morphology of animals; comparative anatomy; the relations of animal groups; comparative life-histories.

Text-book: Parker and Haswell, *Manual of Zoology*, Macmillan.

This course is prerequisite to other courses in Zoology.

Two lectures and two hours laboratory a week. 3 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-3.30 or 3.30-5.30, Thursday.

2. *Comparative Anatomy of Vertebrates*.—A detailed comparative study of a member of each of the classes of vertebrates.

Two lectures and four hours laboratory a week. First Term.

2 units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 1.30-5.30, Tuesday.

3. *Comparative Anatomy of Invertebrates*. — A detailed comparative study of a member of each of the main classes of invertebrates.

Two lectures and four hours laboratory a week. Second Term.

2 units.

Lectures: 8.30-9.30, Tuesday and Thursday.

Laboratory: 1.30-5.30, Tuesday.

4. *Morphology of Insects*.—General entomology.

A collection of insects is required.

This course is prerequisite to other courses in entomology.

Two lectures and four hours laboratory a week. First Term.

2 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Tuesday.

5. *Histology*.—Study of the structure and development of animal tissues; methods of histology.

Ten hours a week. Second Term.

3 units.

Lectures: 1.30-2.30, Monday; 10.30-11.30, Friday.

Laboratory: 2.30-5.30, Monday; 1.30-3.30, Wednesday; three hours to be arranged.

6. *Embryology*.—A general survey of the principles of vertebrate embryology; preparation and examination of embryological sections.

Ten hours a week. First Term. 3 units.

Lectures: 1.30-2.30, Monday; 10.30-11.30, Friday.

Laboratory: 2.30-5.30, Monday; 1.30-3.30, Wednesday; three hours to be arranged.

7. *Economic Entomology*. — A study of the insect pests of animals and plants and of the means of combating them.

Six hours a week. Second Term. 2 units.

Lectures: 10.30-11.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Tuesday.

8. *Private Reading*.—A course of reading on biological theories. In this course examinations will be set, but no class instruction will be given. 2 units.

9. *Advanced Entomology*.—A course in (a) insect morphology and wing venation, or (b) internal anatomy and histology, or (c) taxonomy.

Prerequisite: Zoology 4.

Seven hours a week. First Term. 2 units.

Lectures: 9.30-10.30, Monday and Wednesday.

Laboratory: 1.30-5.30, Friday, and one hour by arrangement.

Courses correlated with the work for the major thesis are given to graduate students.

1939-40

THE
FACULTY
OF
APPLIED SCIENCE

(ENGINEERING: NURSING AND HEALTH)

1939-40

FACULTY OF APPLIED SCIENCE

FOREWORD

The object of the courses in Applied Science is to train students in exact and fertile thinking, and to give them a sound knowledge of natural laws and of the means of utilizing natural forces and natural products for the benefit of man and the advancement of civilization. Experience shows that such a training is the best yet devised for a large and increasing proportion of the administrative, supervisory and technical positions.

The object, then, is to turn out, not finished engineers or industrial leaders—these are the product of years of development in the school of experience—but young men with a special capacity and training for attaining these goals, and thus for helping to develop the industries of the province. Consequently the undergraduate course is made broad and general rather than narrow and highly specialized.

Furthermore, such a course is not only better suited to the British Columbia conditions that the graduate will encounter in his after-life, but also better for later specialization, for it furnishes a more solid foundation, a better background, a broader outlook and a more stimulating atmosphere, all necessary if the specialist is to achieve the maximum results of which he is capable.

The student is offered a full undergraduate course and an additional year of graduate study. The First Year is intended to increase the student's general knowledge and to broaden his outlook. It is hoped that enough interest will be aroused to encourage the student to continue some study of the humanities as a hobby or recreation.

The Second and Third years in Applied Science are spent in a general course that includes Mathematics and all the basic sciences. This gives not only a broad training, but enables the student to discover the work for which he has special liking or aptitude and to select more intelligently the subjects in which to specialize during the final two years. During these two years students acquire more detailed knowledge and get practice in applying scientific principles and knowledge, in solving problems, in doing things; and there is also training in Economics, Law and Industrial Management.

During the long period between sessions, the student is required to engage in some industrial or professional work that will afford practical experience not obtainable in the laboratory or field classes, but that is a necessary supplement to academic study.

An engineering degree in the Applied Science Course of the University is accepted by the Association of Professional Engineers of the Province of British Columbia in lieu of four of the six years' practical experience required by the Engineering Act of the Province for registration to practise engineering.

Students are advised to register with the Association of Professional Engineers of British Columbia in their third year; and to associate themselves with the appropriate engineering societies.

ADMISSION

The general requirements for admission to the University are given on Pages 33-35.

As for Arts, complete Junior Matriculation or its equivalent is required for admission to Applied Science, and no student may enter with any outstanding supplemental in Junior Matriculation.

No student with defective standing will be admitted either to the Second or to the Third Year in Applied Science.

The total number of students to be admitted to the Department of Nursing and Health, in the Second Year of the Combined Course and the Third Year of the Double Course, is limited to 20. The Faculty reserves the right of selection and admission in accordance with the limit set. Applications for admission to the Second Year in Nursing and Health must be made to the Registrar on or before August 15th.

Candidates who expect to complete the requisite entrance standing through University or Senior Matriculation supplemental examinations, held in August or September, may apply for admission as specified above and their applications will be considered subject to the results of these examinations.

Admission to the Second Year in Applied Science may be granted to students who have fulfilled the requirements of the First Year, as outlined below, by Senior Matriculation or similar work taken outside of the University; but students who are considering entering Applied Science are recommended to take the First Year at the University of British Columbia, if they can, for, while they may master the required subject matter as well outside, in the opinion of the Faculty it is highly desirable to have had a year's experience at the University before entering Second Year Applied Science.

This experience includes special orientation lectures, contact with Arts students, with Applied Science senior students, with specialists, with college organizations, and generally with the University methods and adjustments which prepare him to attack

the difficult and heavy work of the Second Year efficiently from the outset, or to select another University course, if desired, on the basis of a year's experience and without loss of time.

For requirements for admission to courses in Nursing and Health, see Page 195.

DEGREES

The degrees offered students in this Faculty are:

Bachelor of Applied Science (B.A.Sc.). (See below.)

Bachelor of Science in Forestry (B.S.F.). (See Page 187.)

Master of Applied Science (M.A.Sc.). (See Page 204.)

COURSES LEADING TO THE DEGREE OF B.A.Sc.

The degree of Bachelor of Applied Science is granted on the completion of the work in one of the courses† given below:

- I. Chemical Engineering.
- II. Civil Engineering.
- III. Electrical Engineering.
- IV. Forest Engineering.
- V. Geological Engineering.
- VI. Mechanical Engineering.
- VII. Metallurgical Engineering.
- VIII. Mining Engineering.
- IX. Nursing and Health.

Double courses are offered in Arts and Science and Applied Science leading to the degrees of B.A. and B.A.Sc. (Engineering), B.A. and B.A.Sc. (Nursing), B.A. and B.S.F. and B.Com. and B.S.F. For the regulations governing these, see the section "Double Courses", at the end of the Calendar.

The Double Course leading to the degrees of B.A. and B.A.Sc. (Engineering) is strongly recommended to students who are young enough to afford the time and to students wishing to enter Applied Science, and who have to their credit some, but not all, of the requirements of First Year Applied Science as set forth on Page 179. The latter can select subjects in their Second Year Arts that will satisfy the Arts requirements for the double degree, and at the same time complete the work of First Year Applied Science. Thus they may qualify for an Arts degree without expending any more time than would be required to qualify them for entrance into Second Year Applied Science.

†The curriculum described in the following pages may be changed from time to time as deemed advisable by the Senate.

PRACTICAL WORK OUTSIDE THE UNIVERSITY

In order to master professional subjects it is very important that the work done at the University should be supplemented by practical experience in related work outside. Therefore students are expected to spend their summers in employment that will give such experience.

Before a degree will be granted, a candidate is required to satisfy the Department concerned that he has done at least four months' practical work related to his chosen profession. Fourth and Fifth Year Essays (see Page 181) should be based, as far as possible, upon the summer work.

Upon approval of the Dean and the Head of the Department concerned, University credit may be granted for work done outside the University under the immediate supervision of the University staff, during the University session.

Practical work such as Shop-work, Freehand Drawing, Mechanical Drawing, Surveying, etc., done outside the University, may be accepted in lieu of laboratory or field work (but not in lieu of lectures) in these subjects, on the recommendation of the Head of the Department and approval of the Dean. Students seeking exemption as above must make written application to the Dean, accompanied by certificates indicating the character of the work done and the time devoted to it.

OPENING OF SESSION

It is essential to the success of the student that he should be in attendance at the opening of the session, for, in order to allow as much time as possible for practical work in the summer, the length of the session has been reduced to the minimum consistent with the ground to be covered. Consequently a student requires the full session to master the work. A mere pass standing is a very unsatisfactory preparation for subsequent work or professional life. Further, from this standpoint, the opening work is the most important of the whole session for the student, for in it are given the general instructions necessary for the proper attack upon the work.

The only exception is when the summer employment affords experience necessary for the course in which the student is specializing, and when it will lighten to some extent the work of the session (such as in Geological Survey field work for geological students) and then only provided the nature of this work makes it impossible for the student to reach the University on the opening

day. Under these circumstances, if the student furnishes a statement from his employer showing it was impossible for him to release the student earlier, the Dean may allow the student to enter without penalty as to class attendance. The student must, however, register at the opening of the session in accordance with the regulations in reference to registration.

SUPPLEMENTAL EXAMINATIONS

A student with supplementals must write them off at the regular time for supplemental examinations before the opening of the session, for he will need the entire session for the current year's work. It is also necessary, for a successful year, to have a satisfactory knowledge of the foundational work of the preceding year. No exceptions to the above rule will be granted except as under Paragraph 2, above.

GENERAL OUTLINE OF UNIVERSITY COURSES

Students desiring to enrol in Nursing and Health register for the First Year in Arts and Science and take the special course outlined on Page 198; students desiring to enrol in the Double Course for the degrees of B.A. and B.A.Sc., register for the first two years in Arts and Science and take the courses outlined on Page 277. All other students of Applied Science except those in Forest Engineering have a general course common to all for the first three years as under:

FIRST YEAR

The students register in Arts and Science, and take the following classes as Arts students:

English 1 (*a* and *b*).

Mathematics 1.

Chemistry 1.

Physics A or 1.

Latin 1 or French 1 or *German B.

The passing grade is 60 per cent in Mathematics, Chemistry and Physics and 50 per cent in the other subjects.

†Students in Nursing and Health are required to obtain a grade of 60 per cent in Biology and Chemistry; for all other subjects a grade of 50 per cent will be accepted.

*Applied Science students are advised to take Beginners' German.

†This passing grade for students in Nursing and Health will not be effective until September 1940.

No student with defective standing will be admitted to Second Year Applied Science.

A reading knowledge of French and German is desirable for students in Engineering.

Students who have passed First Year Arts and Science, but who have failed to make the necessary entrance requirements for the Second Year Applied Science, may take the September Supplemental Examinations of Arts and Science.

First Year students are advised to attend the noon-hour talks on the choice of a profession and on the life and work in various callings likely to be selected by Applied Science graduates, as these may assist the student in determining whether Applied Science is the best course for him. If he finds it is not, he can proceed in Arts without any loss of time.

The work of the Second and Third Years is the same in all courses, except those in Nursing and Health and Forest Engineering.

SECOND YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Math. 2 { Trigonometry	233	2	.....	.....	.....
{ Solid Geometry	233	.....	.....	2	.....
Math. 3 Algebra	233	2	.....	2	.....
Math. 4 Calculus	234	2	.....	2	.....
M.E. 1 Drawing 1	234	.....	3	.....	3
Physics 4a Mechanics	246	3	3	.....	.....
Physics 4b Heat	246	.....	.....	3	3
†Chem. 2a Qual. Analysis	211	1	3	1	3
C.E. 2 Surveying	214	Field Work		.....	.....
C.E. 4 Graphics	214	.....	2	.....	2
C.E. 30 Engineering Problems	221	.....	4	.....	4
English 3 Composition	222	2	.....	2	.....
C.E. 32 General Engineering	221	1	.....	1	.....
*Bot. 1b Forest Botany	208	2	2	2	2

NOTE:—The sum of \$3.00 as caution money must be deposited before Field Work in C.E. 2.

*For Forestry Students only.

†Not required for Forestry Students.

THIRD YEAR

No student with defective standing will be admitted to the Third Year of Applied Science.

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Math. 6 Calculus.....	234	3	.....	3	.....
Math. 7 Analytical Geometry.....	234	2	.....	2	.....
§Chem. 2b Quan. Analysis.....	211	1	3	1	3
C.E. 1 Descriptive Geometry.....	214	.....	3	.....	3
Physics 5 Electricity.....	246	2	3	2	3
C.E. 31 Mechanics and Engineering Problems.....	221	2	3	2	3
C.E. 5 Mapping.....	214	.....	3	.....	3
C.E. 6 Surveying.....	214	2	.....	2	.....
Geology 1 General.....	228	2	2	2	2
†C.E. 7 Surveying.....	215	Field	Work		
‡M.E. 2(a) Shop Work and Mechanical Drawing.....	235	Summer Term			
English 4 Technical Writing.....	222	1	.....	1	.....
*F.E. 1 General Forestry.....	222	3	.....	3	.....

NOTE:—The sum of \$3.00 caution money must be deposited before Survey School opens.

†Students entering Civil, Forest, Geological, Metallurgical and Mining Engineering are required to take Civil Engineering 7 (see Page 215) immediately after the spring examinations.

‡Students entering Chemical, Electrical and Mechanical Engineering are required to take M.E. 2 (a) (see Page 235) immediately after the spring examinations.

*For Forestry Students only.

§Not required for Forestry Students.

THIRD, FOURTH, AND FIFTH YEARS

Essays

Students entering the Third Year are required to submit an essay of not less than 1,000 words. This should take the form of a scientific report based preferably upon original observations made during the summer. Any suitable subject may, however, be chosen. Emphasis will be placed upon the precise and accurate use of English, but credit will also be given to subject matter, form and illustrations. If the essay is not to the standard of a pass mark in English, it will be returned for re-writing. One copy only is required, which may be retained for future reference by the Department most interested.

Essays are required of all students entering the Fourth and Fifth Years. The following regulations should be observed:

1. The essay shall consist of not less than 2,000 words.
2. Two copies shall be submitted in properly bound form. Only one copy need contain maps and illustrations.
3. The essay shall be a technical description of the engineering aspects of the work on which the student was engaged during the summer, or of any scientific or engineering work with which he is familiar. In the preparation of the essay, advantage may be taken of any source of information, but due acknowledgment must be made of all authorities consulted. It should be suitably illustrated by drawings, sketches, photographs or specimens.
4. The essays shall be typewritten, or clearly written on paper of substantial quality, standard letter size ($8\frac{1}{2} \times 11$ inches), on one side of the paper only, leaving a clear margin on top and left-hand side. Every student shall submit a duplicate copy of his essay, for the correction of English. If typewritten, essays must be "double-spaced." Students are recommended to examine sample reports to be found in the Departments and also copies of Masters' Theses in the library.
5. The latest date for receiving Graduating Essays in the Spring Term shall be the last day of Lectures; and the corresponding date for the Autumn Congregation shall be October 1. *All other essays shall be handed into the Dean not later than November 15.*
6. Students in Nursing and Health will be required to submit a Graduating Essay, presenting an original study based upon experiences gained during the academic and professional years, and developed from topics assigned or selected early in the course. These essays must be handed in before the last day of lectures in the Final Year.

All essays, when handed in, become the property of the Department concerned, and are filed for reference. Students may submit duplicate copies of their essays in competition for the students' prizes of the Engineering Institute of Canada, or the Canadian Institute of Mining and Metallurgy.

Essays will be considered as final Christmas examinations. A maximum of 100 marks is allowed, the value being based on presentation, English and matter. In Fourth Year essays, presentation, that is, the manner in which the matter is arranged and presented to the reader, is given greatest weight, with English second and matter third. In Fifth Year essays greatest emphasis is placed on matter, but consideration is also given to presentation and English.

COURSES

I. Chemical Engineering

The course in Chemical Engineering is designed to prepare the student for the duties of managing engineer in a chemical manufacturing plant. As such he must be conversant not only with the chemical processes involved, but he must be prepared to design and to oversee the construction of new buildings and to direct the installation and use of machinery. Hence the course of study includes, especially in the first three years, a number of courses in the older branches of engineering. In the fourth and fifth years the maximum of chemical training, allowed by the time at the disposal of the student, is given in inorganic, organic and physical chemistry. Special emphasis is laid on such problems as the operation of electrolytic cells and electric furnaces, the transportation of gases, liquids and solids, combustion, grinding, mixing, drying, evaporation, distillation, condensation, filtration and adsorption processes.

FOURTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Math. 8 Applied Calculus and Differential Equations.....	234	3	.....	3	.....
Geol. 2(a) Mineralogy.....	229	2	2	.....	.....
Chem. 3 Organic.....	211	2	3	2	3
Chem. 4 Theoretical.....	211	2	3	2	3
Chem. 5 Adv. Analysis.....	212	1	6	1	6
E.E. 1 General.....	238	2	2	2	2
Physics 10 Light.....	246	1	.....	1	.....
C.E. 12 Hydraulics.....	217	2	3	2	3

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Chemistry 6 Industrial.....	212	2	.....	2	.....
Chem. 7 Physical.....	212	2	3	2	3
Chem. 8 Electro.....	212	2	3	2	3
Chem. 9 Adv. Organic.....	213	2	3	2	3
Chem. 16 Engineering.....	213	3	.....	3	.....
Metallurgy 3 or 1 according to time table.....	243	2	.....	2	.....
Thesis.....	.....	.....	12	.....	15

II. Civil Engineering

The broad field covered by Civil Engineering makes it an adjunct of many other branches of engineering, yet the Civil Engineer occupies a distinctive field and is intimately associated with a wide group of undertakings vitally affecting the health, comfort and prosperity of the commonwealth.

The various branches of Civil Engineering deal with problems in water supply and water purification; in sewerage systems, sewage disposal plants, and the handling of municipal and industrial wastes; in hydraulic power development; in irrigation and drainage for agricultural activities; in all types of structures, bridges and buildings, piers and docks, sea walls and protective works; in transportation, canals, locks, highways, electric and steam railways; and in the management and direction of public works, public utilities, industrial and commercial enterprises.

The course in Civil Engineering is designed to provide, in so far as time will permit, foundations for continued growth along those lines which the student's interest and environment determine, without compelling too early specialization. Training in pure and applied science, in the humanities, in economics and engineering law, and in the technical phases of professional work establishes a broad basis for the stimulation of a sincere spirit of public service and for the development of that capacity for reliable work and judgment which makes safe the assumption of responsibilities.

The methods of instruction are planned with the view of bringing out the powers and initiative of the students while training them in the habits of accurate analysis and careful work. Students are encouraged to secure summer work which will give them an insight into the various phases of the career upon which they are about to enter, and the summer essays lay the foundation for the ability to set forth, in clear and precise language, descriptions and analyses of projects and engineering activities. In the Fifth Year thesis an opportunity is given for special investigation and research under the supervision of experienced engineers.

FOURTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay	181	.....	.....	.....	.....
C.E. 8 Foundations	215	2	3	2	.....
C.E. 9 Elementary Design	216	2	3	2	3
C.E. 10(a) & (b) Strength of Materials	216	3	3	2	3
C.E. 11 Railways	216	2	.....	2	.....
C.E. 12(a) & (b) Hydraulics	217	2	3	2	3
C.E. 13 Mapping	217	.....	3 [†]	3§
C.E. 14 Surveying	217	2	.....	2	.....
*M.E. 6 Applied Thermodynamics	236	2	3	2	3
*E.E. 1 Electrical Engineering	238	2	2	2	2
C.E. 16 Surveying	217	.....	Field	Work	.....
C.E. 28 Seminar	220	1	.....	1	.....
†F.E. 16 Forest Economics	227	3	.....	3	.....

†For Forest Eng. Students only.

*Forest Eng. Students must take either M.E. 6 or E.E. 1.

‡Civil and Forestry Students.

§Geology and Mining Students.

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay	181	.....	.....	.....	.....
C.E. 17 Structural Design	218	2	3	2	6
C.E. 18(a) Engineering Economics	218	2	.....	.....	.....
C.E. 18(b) Engineering Economics	218	.....	.....	2	.....
C.E. 19 Law—Contracts	218	1	.....	1	.....
C.E. 22 Municipal Engineering	218	2	2	2	2
C.E. 23 Highway Engineering	219	2	.....	2	.....
C.E. 24 Reinforced Concrete Design	219	2	3	.....	3
C.E. 25 Theory of Structures	220	2	6	.....	.....
C.E. 26 Trips	220	Required Saturday A.M.			
C.E. 27 Thesis	220	.....	3	.....	6
C.E. 28 Seminar	220	1	.....	1	.....
C.E. 29 Water Power Development	220	.....	.....	2	2

Courses for Graduate Students, see page 222.

III. Electrical Engineering

This course is designed to enable students to obtain a thorough knowledge of those principles which form the basis of all the main branches of Electrical Engineering. It involves a detailed study of the generation, transmission and utilization of electrical energy, electrical communication and the design of electrical apparatus. There is also additional work in mathematics and in the theory and characteristics of steam engines and turbines and hydraulic machinery. Well equipped laboratories provide for experimental work in most of these subjects.

Fourth and Fifth year students have the opportunity of presenting and discussing papers at regular meetings of the Students' Branch of the American Institute of Electrical Engineers.

FOURTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
E.E. 2 Principles of D.C. Machines.....	238	4	3	2	.....
E.E. 3 Principles of Alternating Currents.....	239	.....	.....	2	3
E.E. 5 Electric and Magnetic Measurements and Instruments.....	239	2	.....	2	.....
Math. 8 Applied Calculus and Differential Equations.....	234	3	.....	3	.....
M.E. 4 Dynamics.....	235	2	.....	2	.....
M.E. 7 Heat Engines.....	236	3	3	3	3
C.E. 10 Strength of Materials.....	216	3	3	2	3
C.E. 12(a) and (b) Hydraulics.....	217	2	3	2	3
*M.E. 2(b) Machine Shop Practice.....	235	.....	2	.....	2

*Optional.

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
E.E. 7 Electrical Machine Design.....	239	1	3	1	3
E.E. 8 Principles of Illuminating Engineering.....	240	2	.....	.....	.....
E.E. 9 Electric Power Transmission and Distribution.....	240	2	.....	2	.....
E.E. 10 Electrical Problems Course.....	240	.....	2	.....	2
E.E. 11 Electrical Communication.....	240	2	4	2	4
E.E. 12 Principles of A.C. Machines.....	241	3	4	3	4
E.E. 13 Transient Phenomena.....	241	1	.....	1	.....
M.E. 8 Steam Turbines.....	236	.....	.....	2	.....
M.E. 14 Mechanical Design.....	237	2	.....	.....	.....
M.E. 15 Prime Movers.....	237	2	.....	2	.....
*C.E. 18(a) Engineering Economics.....	218	2	.....	.....	.....
C.E. 18(b) Engineering Economics.....	218	.....	.....	2	.....

*Optional. Courses for Graduate Students. See page 241.

IV. Forestry and Forest Engineering

Four avenues of approach are open to students who wish to enter Forestry, namely: through courses in either Botany, Economics or Commerce as given in the Faculty of Arts and Science, leading to the Double Degree of B.A. and B.S.F. (see Pages 278, 279), or through courses in Applied Science leading to the Degree of B.A.Sc. These curricula allow the student to select an aspect of Forestry, and a corresponding field of study, to which he is attracted and for which he may be adapted. Thus a varied but thorough course of studies prepares the student to enter the diversified forestry activities of the Province or to undertake graduate work in the field of his undergraduate preparation, or in a specialized field of Forestry. Students who anticipate courses in Forestry are advised to consult the Registrar, the Dean, or the Head of the Department of Forestry.

In British Columbia the forest industries, including logging and the manufacture of lumber, pulp and paper, lead all others. They must always play a very important part in the economy of the Province, because seven-eighths of the productive land is absolute forest soil, that will grow good timber but no other crop of value;

and because over half the remaining stand of saw-timber—the last big reserve—of Canada is here. The development of these industries is requiring more and more the services of foresters and engineers. Furthermore, most of the forest land is owned by the public, and the management of these vast estates is a task that will require constant growth on the part of the government forest services.

This indicates very briefly the various fields of service open to foresters and Forest Engineers, and for which the courses of study are designed.

Vancouver contains large sawmills, wood-working plants, and plants for seasoning and preserving wood—more, in fact, than any other place in the Province. Pulp mills, logging operations and extensive forests are within easy reach. The advantages of location are therefore exceptional. A special feature is the affiliation of the Forest Products Laboratory of Canada, maintained at the University by a co-operative arrangement with the Dominion Forestry Branch. A description of the laboratory and its activities is given on Page 227. It affords opportunities for instruction in testing the mechanical properties of timber and other structural materials, and facilities are now provided for experimental and demonstration work in wood seasoning.

The University Forest

A great asset to the University site is the University Demonstration Forest, a small remnant of the luxurious stand that once covered the whole peninsula. Not only does it add very much to the beauty of the surroundings, but it is valuable as a shelter belt, a place of recreation, and a convenient demonstration and field study area for the departments of Forestry, Botany and Zoology.

The Forest is in the form of a long narrow belt on the southern and western sides of the site, flanking Marine Drive for nearly a mile, and containing over 230 acres. In composition it is typical of the lowland stands on the southern coast, and all the principal species of trees and shrubs of the region are represented, including specimens of the old trees as well as a large amount of young growth of different ages.

A small forest nursery has been established for experimental and demonstration work in silviculture and also to provide planting stock for the forest.

SECOND YEAR

The same as Second Year Applied Science (see Page 180), except that General Forest Botany (General Dendrology) is taken instead of Chemistry 2 (a).

THIRD YEAR

The same as Third Year Applied Science (see Page 181), except that Forestry 1 (General Forestry) is taken instead of Chemistry 2 (b).

FOURTH YEAR

The same as Fourth Year Civil Engineering (see Page 185), except that Forest Economics is taken instead of one of the electives E.E. 1 or M.E. 6. Forestry field work for one week after the Spring Examinations.

FIFTH YEAR

(Not given until the 1940-41 Session.)

Common to Double Course and Applied Science students.

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
F.E. 2(b) Cruising and Stumpage Appraisal.....	223	1	2	.....	.....
F.E. 2(c) Forest Mensuration*.....	223	2	3	.....	.....
F.E. 6 Forest Management.....	224	4	3	.....	.....
F.E. 7 History.....	225	1	.....	.....	.....
Bot. 7(a) Ecology.....	210	2	2	.....	.....
Zool. 7 Forest Entomology.....	250	1	2	.....	.....
F.E. 11 & 12 Forest Products & Marketing.....	226	4	4	.....	.....
F.E. 14 Seminar.....	226	1	.....	1	.....
F.E. 15 Thesis.....	227	.....	3	.....	3
F.E. 2(a) Log Scaling.....	223	.....	.....	1	2
F.E. 5 Wood Technology.....	224	.....	.....	3	3
F.E. 8 Silviculture & Protection*.....	225	.....	.....	4	4
F.E. 10 Logging Engineering*.....	225	.....	.....	4	4
F.E. 13 Lumber Grading.....	226	.....	.....	1	3
Bot. 6(b) Forest Pathology.....	210	.....	.....	1	2

*Also Field Work for a total of 10 days immediately after spring examinations.

FIFTH YEAR

(To be given to Applied Science students up to and including the 1939-40 Session.)

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
F.E. 2(b) Mensuration.....	223	.....	2	.....	2
F.E. 5 Wood Technology.....	224	2	3	1	2
F.E. 6(b) Management 2.....	224	1	.....	1	.....
F.E. 7 History.....	225	2	.....	.....	.....
F.E. 8 Silviculture*.....	225	2	.....	2	3
F.E. 10 Logging Engineering*.....	225	1 }	4	2 }	.....
F.E. 11 Milling*.....	226	2 }	.....	.....	4
F.E. 12 Forest Products*.....	226	.....	.....	2 }	.....
F.E. 13 Lumber Grading.....	226	.....	.....	1	2
F.E. 14 Seminar.....	226	1	.....	1	.....
F.E. 15 Thesis.....	227	.....	3	.....	3
Bot. 6(b) Pathology }.....	210	.....	.....	1	2
Zool. 7 Entomology }.....	250	.....	.....	.....	.....
Bot. 7a Ecology.....	210	1	2	.....	.....
C.E. 18 Engineering Economics (a) & (b).....	218	2	.....	2	.....
C.E. 19 Engineering Law.....	218	1	.....	1	.....

*Field trips are required in these courses and students should be prepared for a total expense which should not exceed \$20 per student.

V. Geological Engineering

This course is designed to meet the requirements of students who intend to enter Geology as a profession, and such students are strongly advised to take this particular course.

It gives a broad training not only in Geology, but also in the sciences of Biology, Chemistry, Physics, and Mathematics, which are extensively applied in the solution of geological problems. The engineering subjects are useful not only to the Mining and Consulting Geologist and the Geological Surveyor, but to the Geologist engaged in original research in any branch of the science.

The course therefore furnishes a foundation for the professions of Mineralogist, Geological Surveyor, Mining Geologist, Consulting Geologist, Palæontologist, Geographer, etc., and is useful for those who will be in any way connected with the discovery or development of the natural resources of the country.

As a supplement to the work in the classroom, laboratory and

field during the session, the student is expected to obtain practical experience during the summer vacation.

Students are advised to become student members of the Canadian Institute of Mining and Metallurgy.

N.B.—For special advantages enjoyed by engineering graduates when registering in the Association of Professional Engineers of the Province of British Columbia see Page 176.

FOURTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Geol. 2 Mineralogy.....	229	2	2	2	2
Geol. 5 Regional.....	230	4	.....	4	.....
Min. 1 Metal Mining.....	242	2	.....	2	.....
Met. 5 Fire Assaying.....	244	1	5	.....	.....
Met. 1 General.....	243	2	.....	2	.....
Ore Dressing 1 General.....	244	2	.....	2	.....
†Biology 1.....	208	2	2	2	2
C.E. 13 Mapping.....	217	.....	.....	.....	3
Met. 6 Wet Assaying.....	244	.....	3	.....	3
Ore Dressing 2.....	245	.....	.....	.....	5

†Exemption will be granted those having Biology 1 to their credit.

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Geol. 6 Palaeontology.....	231	2	2	2	2
Geol. 7 Petrology.....	231	2	4	2	4
Geol. 8 Economic Geology.....	231	4	.....	4	.....
C.E. 18 Engr. Economics (a).....	218	2	.....	2	.....
C.E. 18 Engr. Economics (b).....	218	.....	.....	2	.....
Geol. 9 Mineralography.....	231	.....	2 or 4	.....	2 or 4
Geol. 10 Field Geology.....	232	.....	3	.....	3
Min. 2 Coal and Placer.....	242	2	.....	2	.....
Min. 3 Metal Mining.....	242	2	.....	2	.....
Min. 5 Surveying.....	243	1	.....	.....	.....
Met. 2 Smelting.....	243	2	.....	2	.....
Ore Dressing 2 Lab.....	245	.....	3	.....	3
Thesis.....	.....	.....	4	.....	5
Geol. 4 Structural.....	230	3	.....	3	.....

VI. Mechanical Engineering

The course in Mechanical Engineering has been designed to give the student a thorough knowledge of the theory and application of those basic subjects which are essential in this branch of Engineering.

With this in view, stress has been laid upon such subjects as Mathematics, Physics, Applied Mechanics, Strength of Materials, Applied Thermodynamics and Hydraulics. Graduates of this course are therefore qualified to enter upon any of the many specialized branches of this profession, especially in British Columbia, whose rapid industrial development demands Mechanical Engineers prepared to attack a great diversity of problems.

Although fundamentally general in character, the course embodies design of prime movers; mechanical and hydraulic machinery design; power plant operation and design; and the testing of engines and power plants, thus giving sufficient specialized training in Mechanical Engineering to enable students to enter the field of design or research should they so desire.

Students following this course are given a general course in the fundamentals of Electrical Engineering.

FOURTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
C.E. 10 Strength of Materials.....	216	3	3	2	3
M.E. 3 Kinematics of Machines.....	235	3	2	.....	.....
M.E. 4 Dynamics of Machines.....	235	2	.....	2	.....
M.E. 5 Machine Design.....	235	.....	.....	3	2
M.E. 7 Applied Thermodynamics.....	236	3	3	3	3
M.E. 13 Physical Treatment of Metals	237	1	2	1	2
E.E. 2 and 3 Principles of DC Machines and Alternating Currents	238	4	3	4	3
C.E. 12 Hydraulics.....	217	2	3	2	3
Math 8 Applied Calculus and Differential Equations.....	234	3	.....	3	.....
M.E. 2(b) Shop Practice.....	235	.....	2	.....	2
Essay.....	181	.....	.....	.....	.....

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
M.E. 8 Steam Turbines.....	236	.....	.....	2	.....
M.E. 9 Internal Combustion Eng.....	236	1	4	.....	4
M.E. 10 Refrigeration.....	236	1	.....	.....	.....
†M.E. 11 Heating, Ventilating and Air Conditioning.....	237	2	.....	.....	.....
M.E. 12 Power Plant Design.....	237	1	3	1	3
M.E. 15 Prime Movers.....	237	2	.....	2	.....
M.E. 16 Machine Design.....	238	2	4	2	4
M.E. 17 Applied Mechanics.....	238	1	.....	1	.....
†M.E. 18 Aeronautics.....	238	.....	.....	2	.....
M.E. 19 Problems in Mech. and Elec. Eng.....	238	.....	2	.....	2
E.E. 14 Alternating Current Machinery	241	2	4	2	4
C.E. 18 (a) and (b) Engineering Economics.....	218	2	.....	2	.....
Essay.....	181	.....	.....	.....	.....
M.E. 2(b) Shop Practice.....	235	.....	2	.....	2

†Alternative subjects.

VII.-VIII. Metallurgical and Mining Engineering

Modern Mining and Metallurgy cover too large a field to offer detail in a University course, therefore the courses given are intended to give the students a broad training, and knowledge of the fundamental, technical, economic and social principles involved, to serve as a sufficient foundation for advancement in any branch of the work that the student may enter after graduation. Sufficient specialized training is given in draughting, assaying and mine surveying to equip the student for the actual job which he is likely to enter upon graduating.

Laboratory equipment is sufficient to give a thorough laboratory drilling in Assaying, Ore Dressing, Pyrometry, Roasting, Leaching, Cyanidation, and Metallurgical Analysis.

Coal, Iron and Steel are covered in general courses and specialization is chiefly in non-ferrous mining and metallurgy, with particular reference to British Columbia conditions.

Students are expected to spend their vacations in practical work in connection with mining or metallurgy and are required to do so between the fourth and fifth year as an essential part of their course, without which a degree will not be granted.

Vancouver is conveniently located in proximity to coal and metal mining districts, and is an important mining centre. Students and graduates have normally little trouble in getting positions, through the generous co-operation of the mining companies in the Province.

Students are advised to become student members of the Canadian Institute of Mining and Metallurgy.

VII. Metallurgical Engineering

FOURTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
C.E. 10 Str. of Materials.....	216	3	3	2	3
C.E. 12 Hydraulics.....	217	2	3	2	3
C.E. 13 Mapping.....	217	.....	.....	.....	3
M.E. 6 Applied Thermodynamics.....	236	2	3	2	3
Geol. 2 Mineralogy.....	229	2	2	2	2
E.E. 1 General.....	238	2	2	2	2
Min. 1 Metal Mining.....	242	3	.....	3	.....
Ore Dressing 1 General.....	244	2	.....	2	.....
Met. 1 General.....	243	2	.....	2	.....
Met. 5 Fire Assay.....	244	1	5	.....	.....
Met. 6 Wet Assay.....	244	.....	3	.....	3
Ore Dressing 2 Lab.....	245	.....	.....	.....	4

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Geol. 9 Mineralography.....	231	.....	2	.....	2
C.E. 18 Engr. Economics.....	218	2	.....	2	.....
Chem. 4 Theoretical.....	211	2	3	2	3
Ore Dressing 2 Laboratory.....	245	.....	6	.....	6
Min. 3 Metal Mining.....	242	2	.....	2	.....
Met. 2 Smelting.....	243	2	.....	2	.....
Met. 3 Calculations.....	243	2	.....	2	.....
Met. 4 Laboratory.....	244	.....	9	.....	9
Met. 7.....	244	1	.....	1	.....
Met. 8.....	244	.....	3	.....	3

VIII. Mining Engineering

FOURTH YEAR

As in Metallurgical Engineering. (See Page 194.)

FIFTH YEAR

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
Essay.....	181	.....	.....	.....	.....
Geol. 3 Petrology.....	230	2	.....	2	.....
Geol. 8 Economics.....	231	3	1	3	1
C.E. 18 Engr. Economics.....	218	2	.....	2	.....
Met. 2 Smelting.....	243	2	.....	2	.....
Ore Dressing 2 Laboratory.....	245	.....	6	.....	6
Min. 2 Coal and Placer.....	242	2	.....	2	.....
Min. 3 Metal Mining.....	242	2	.....	2	.....
Min. 4 Machinery.....	242	2	.....	2	.....
Min. 5 Surveying.....	243	1	.....	.....	.....
Min. 7 Methods.....	243	.....	.....	1	.....
C.E. 9 Element. Design.....	216	2	3	2	3
Geol. 4 Structural.....	230	3	.....	3	.....

Courses for Graduate Students see Page 245.

IX. Nursing and Health

1. *Nursing A.*—An undergraduate course, combining academic and professional courses. (See below.)

2. *Nursing B.*—A graduate course of one academic year in Public Health Nursing. (See Page 201.)

3. *Nursing C.*—A graduate course of one academic year in Teaching and Supervision in Schools of Nursing. (See Page 201.)

5. A double course for the combined degrees of B.A. and B.A.Sc. (Nursing.) (See "Double Courses" at the end of the Calendar.)

Registration for these courses will be subject to the general University Regulations (see Pages 33-35) and to the special requirements of the Department.

Courses in the Second and higher years in Nursing (including the Third Year of the Double Course) are governed by the Regulations of the Faculty of Applied Science. (See Page 205.)

Applications for admission to the Second Year, or to the Third Year of the Double Course, in Nursing, must be made to the Registrar on or before August 15th, and must be accompanied by a statement that the applicant has filed an application with an affiliated Hospital School of Nursing. Applicants will be notified of the acceptance or rejection of their application; accepted applicants must make application for registration at once or they will lose their priority of acceptance.

In order to comply with the requirements of the Department of Nursing, candidates must satisfy the entrance requirements of an associated Hospital School of Nursing, and they must, in the opinion of the Department, be personally fitted for the branches of Nursing to which the University Nursing courses lead. Preference will be given to applicants with the highest academic standing.

Applications from graduate nurses for admission to the undergraduate course leading to the degree of B.A.Sc. will be considered only upon fulfilment of the following conditions:

(1) The requirements of the first two years, as outlined on Pages 198 and 179, shall be met; (the work of the Second Year shall be covered by attendance at a Winter Session).

(2) The candidate shall have graduated from a Hospital School of Nursing within the province which has already been approved by the University Senate, or from a Hospital School of Nursing outside of the province which shall be recommended to the University Senate as meeting the requirements of an approved School.

(3) The candidate's professional record shall indicate ability above the average.

(4) The candidate shall have graduated from the Hospital School of Nursing within five years of the date upon which she applies for enrolment in Second Year Nursing, and the candidate shall at that time be under thirty years of age.

(5) Candidates who had taken the one-year certificate course (Nursing B or C) prior to the Session of 1938-39 must fulfil the requirements (1), (2), (3) and (4) as stated above, and the passing grade in their work of the certificate course shall have met the standard now set for the degree course students in the final year.

All regulations are subject to change from year to year, and subjects or courses may be modified during the year as the Faculty may deem advisable.

Nursing A (Combined Undergraduate Course)

This is a Combined Hospital and University Course leading to the Degree of B.A.Sc. (Nursing) and to the Diploma in Nursing of an associated hospital. It is given by the University in co-operation with the Schools of Nursing of associated hospitals, which means those hospitals that have signified their willingness to supply the professional part of the course, and have received the approval of the University Senate for that purpose. Up to the present time the Vancouver General Hospital is the only hospital which has entered into association with the University to this end.

The aim of the Combined Course is to afford a broader education than can be given by the Hospital Schools of Nursing alone, and thus to build a sound foundation for those who desire to fit themselves for Teaching and Supervision in Schools of Nursing or for Public Health Nursing Service.

The First and Second Years (of the Combined Course), or the First, Second and Third Years (of the Double Course), which are academic, give the students an introduction to general cultural subjects and a foundation in the sciences underlying the practice of nursing. Following these academic, or pre-clinical years, the student enters an associated Hospital School of Nursing for a period of thirty-two months. The first four months are a probationary period; upon acceptance by the School of Nursing the student remains for a period of twenty-eight months. This period of professional training is planned to afford a wide experience and training in the care of the sick, to develop the skill, observation, and judgment necessary to the efficient practice of nursing, and to include a study of community as well as institutional health problems. The Final Year (which is the same for the Combined and the Double Course) affords a choice of two courses, one in Public Health Nursing (Nursing B), the second in Teaching and Supervision in Schools of Nursing (Nursing C).

Outline of the course :

FIRST YEAR (ACADEMIC)

The students register in the Faculty of Arts and Science, and take the following courses as Arts students :

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
English 1(a).....	134	2	.....	2	.....
English 1(b).....	134	2	.....	2	.....
Choice of					
Latin 1.....	119				
or French 1.....	156	3	.....	3	.....
or German (Beginners').....	159				
Mathematics 1.....	151	4	.....	3	.....
Chemistry 1.....	112	3	3	3	3
Biology 1.....	105	2	2	2	2

SECOND YEAR (ACADEMIC)

No student with defective standing will be admitted to the Second Year of the Course in Nursing.

The students register in the Faculty of Applied Science, and take the following courses as Nursing students :

Subject	For Details See Page:	First Term		Second Term	
		Lectures per week.	Laboratory Hours per Week.	Lectures per week.	Laboratory Hours per Week.
English 2.....	135	3	.....	3	.....
Zoology 1.....	170	2	2	2	2
Physics A or Physics 1.....	165	3	2	3	2
Psychology 1.....	163	4	.....	4	.....
Bacteriology in relation to Health and Disease.....	247	1	4	1	4
Elementary Biochemistry.....	247	.....	.....	1	1
History of Nursing.....	247	1	.....	1	.....

Probationary Period (Hospital)

It has been arranged that the students of both the Combined Course and the Double Course will enter the associated Hospital along with the regular class of probationers entering the Hospital in September. Students who are unable to meet the requirements for entrance in September, who subsequently remove outstanding supplementals, may be admitted with a later regular class of probationers. The students must meet all admission requirements of the associated Hospital Schools of Nursing.

During this probationary period the student will undergo rigid examination as to fitness in physique, temperament, and character, thus affording the Hospital School of Nursing information upon which to judge the student's qualifications for the profession of nursing. It also enables the student to determine whether she feels herself personally fitted or inclined to proceed in the course. The Hospital Schools of Nursing reserve the right to reject candidates who do not reach the required standards.

Third, Fourth, and Fifth Years (Professional)

The Third, Fourth, and Fifth Years of the Combined Course (or the Fourth, Fifth, and Sixth Years of the Double Course) will be spent in practical training in the associated Hospital School of Nursing. Students in these years are required to register with the University even though during this portion of the course they are in residence at the Hospital. During these professional years students are subject to the authority and are under the direction of the officers of the associated Hospital Schools of Nursing. The professional course covers a period of 32 months, which includes the probationary term of four months. Students who have lost time during the Hospital period may be required to postpone the Final (Academic) Year. The professional course is given partly within the associated Hospital and in part through affiliations which the hospital may arrange with other institutions or organizations. Full maintenance and such allowance as the associated Hospital authorities may designate are provided, and a yearly vacation is granted at the convenience of the Superintendent of the School of Nursing. A registration fee may be required by the associated Hospital.

The following is an outline of the course as given in the Vancouver General Hospital, which is the only Hospital at present associated with the University in giving the Combined Course.

Instruction in the following Nursing subjects is given by members of the medical staff and by qualified nurse instructors:

Introductory Ethics of Nursing; Practical Nursing Procedures; Personal Hygiene; Anatomy and Physiology; Psychology; Normal Nutrition and Cookery; Drugs and Solutions; Materia Medica; Tuberculosis; Psychiatric and Neurologic Nursing; Urinalysis; Introduction to Anaesthesia; Introduction to Physiotherapy, X-Ray, and Public Health.

This schedule is open to change at any time, at the discretion of the associated Hospital School of Nursing.

The period of Hospital service includes actual nursing experience in the following departments:

Medical	Operating Room
Surgical	Eye, Ear, Nose and Throat
Gynecological	Obstetrical
Pediatric and Orthopedic	Communicable Diseases (including Tuberculosis)
Observation and Neurological	Diet Kitchen
Infants	Out-patient

The preventive aspects of medicine and nursing, while included in every phase of the Hospital course, are particularly stressed in the clinics, in the Out-patient Department, and through the affiliations which the Hospital may arrange with other institutions or public health organizations. These affiliations may vary from time to time, and from the opportunities available a selection will be made of the experiences most valuable to the student. At present the course will include a period in the Provincial Sanatorium at Tranquille, a period with the Victorian Order of Nurses, and a period in the Provincial Mental Hospital.

The diploma of the Hospital School of Nursing will be granted at the completion of this period.

Final Year (Academic and Professional)

The Final Year will be spent in either Nursing B or Nursing C, at the option of the student. The Department of Nursing and Health must be notified by each student of her selection of course for the Final Year; this notification must be received by July 15th of the year in which the student proposes to return to the University for the Final Year's work. Upon completion of the Final Year, the degree of Bachelor of Applied Science (Nursing) will be awarded.

Nursing B (Public Health Nursing)

A graduate course of one academic year, including work in the University and appropriate field work under the supervision of the various associated Public Health organizations. This course leads to a Certificate in Public Health Nursing.

NURSING B

Subject	For Details See Page:	Total Hours Lectures.	Total Hours Laboratory.
Preventive Medicine.....	247	45	
Sanitation.....	248	9	
Vital Statistics.....	248	18	
Mental Hygiene.....	248	18	
Infant Welfare.....	248	9	
Child Hygiene.....	248	12	
Public Health Organization.....	248	4	
Principles of Public Health Nursing.....	248	36	
Practice of Public Health Nursing.....	248	18	
Methods in Health Teaching.....	248	36	
Contemporary Nursing Problems.....	249	18	
Principles and Methods of Teaching.....	249	18	
Social Case Work.....	249	20	
Sociology.....	249	18	
Seminar.....	249	18	
Field Work.....		8-12 weeks	To run alternately with the academic work.

Nursing C (Teaching and Supervision)

A graduate course of one academic year, including work in the University, and opportunity for practice teaching and for the observation of Training School administration and ward supervision in associated Hospitals. The content of the field work period may be modified according to the previous experience and to meet the requirement of the individual student. For students desiring additional experience in hospital administration an opportunity may be afforded by an associated Hospital. This course leads to a Certificate in Teaching and Supervision in Schools of Nursing.

NURSING C

Subject	For Details See Page:	Total Hours Lectures	Total Hours Laboratory.
Preventive Medicine.....	247	45	
Mental Hygiene.....	248	18	
Contemporary Nursing Problems.....	249	18	
Teaching in Schools of Nursing.....	249	36	
Practice Teaching in Nursing.....	249	20	
Principles of Supervision in Schools of Nursing.....	249	36	
Principles and Methods of Teaching.....	249	18	
Social Case Work.....	249	20	
Sociology.....	249	18	
Electives from Nursing B, from Education, or from related Science Courses—to make up three units			
Seminar.....	249	18	
Field Work.....	.....	8 weeks	To run alternately with the academic work.

The academic work and the *field work will be given in alternating blocks throughout the two University terms. The field work will cover a period of eight to twelve weeks, part of which period may be delayed, for some students, until after the close of the University session.

During the period spent in the Hospital, or with a Public Health or Social Welfare organization, all students will be subject to the authority, and under the direction, of the officers of the associated Hospital School of Nursing or of the Organization.

Through the courtesy and co-operation of the following agencies, arrangements have been made for supervised field work or observation:

NURSING B

The Children's Aid Society of Vancouver.—Miss Frances M. Fraser, Manager.

The Family Welfare Bureau of Greater Vancouver.—Miss Mary McPhedran, Director.

The Metropolitan Health Board—Dr. S. Stewart Murray, Senior Medical Health Officer; Miss M. A. McLellan, Acting Director of Public Health Nursing.

*That students may have some idea of the probable expenses of the course, they are reminded that in addition to the usual expenses of a University course, there will be additional expenses in connection with the term field work. The sum of one hundred dollars is mentioned as probably the maximum amount required to cover the expense of board and lodging while with the rural nursing organization, and of transportation.

The Provincial Department of Health and Health Units at Abbotsford, Chilliwack, Duncan, Nanaimo, Saanich, and other centres.—Dr. H. E. Young, Provincial Health Officer.

The Provincial Mental Hospital, Essondale.—Dr. E. J. Ryan, Medical Superintendent; Miss L. Blomberg, Superintendent of Nurses.

The Provincial Division of Tuberculosis Control.—Dr. W. H. Hatfield, Medical Director; Miss Edith I. Stocker, Supervisor.

The Provincial Division of Venereal Disease Control.—Dr. D. H. Williams, Medical Director; Miss U. Whitehead, Supervisor of Social Service.

The Vancouver General Hospital.—The Social Service Department—Miss O. Cotsworth, Supervisor.

The Victorian Order of Nurses.—Miss M. Duffield, District Superintendent.

NURSING C

The Vancouver General Hospital.—Dr. A. K. Haywood, General Superintendent; Miss G. M. Fairley, Principal and Director of Nurses.

Admission to Nursing B and C

The courses are open to students of the Combined Course and of the Double Course, also to nurses who have graduated from recognized Schools of Nursing, who are eligible for registration in British Columbia and who are personally fitted for their proposed work. Applicants shall have received adequate instruction and practical experience in the nursing care of communicable diseases and of diseases of infancy and childhood. All applicants must fulfil the University educational requirement of Junior Matriculation.

The enrolment of graduate nurses for the certificate course, Nursing B, may have to be restricted temporarily owing to the fact that opportunities for Field Work are limited. In the selection of candidates consideration will be given, firstly to residents of the Province, and secondly to those whose preparation (academic and professional) best fits them for the special branch for which they wish to register. The certificate course, Nursing C, will be offered to graduate nurses only upon the enrolment of at least three candidates.

Applications for admission to the courses of Nursing B and C should be sent to the Department of Nursing and Health not later than July 1st of the current year. A certificate of good health and physical condition, signed by a regular practising physician, must be presented with the application; the report upon a recent X-ray of the chest must accompany this certificate.

As a preparation for Nursing B, each candidate is required to spend a period of at least four weeks with a visiting nursing organization approved by the Department; this period may have been included in the Hospital course of training, or gained through post-graduate experience. It is advisable that this experience should be obtained before the opening of the University session, but in some cases it may have to be deferred until the close of the session. Candidates lacking this experience should notify the Department at an early date of their desire for assistance in making arrangements for it. During this term the nurses will be responsible for their own maintenance and they will receive no remuneration. The Vancouver Branch of the Victorian Order of Nurses has agreed to receive suitable applicants for this period in so far as it can be arranged.

As a preparation for Nursing C, graduate nurses are required to have one year of satisfactory experience as a general duty or head nurse (or an acceptable equivalent).

For the convenience of graduate nurses already engaged in nursing, who wish to take Nursing B or C, but are unable to take a year off, provision is made that either one may be taken on a basis of part-time attendance, but the course must be completed within three years. Nurses registering in this way must fulfil the same requirements as the regular-course students.

COURSES LEADING TO THE DEGREE OF M.A.Sc.

1. Candidates for the degree of Master of Applied Science must hold a B.A.Sc. degree from this University, or its equivalent.

2. A graduate of another university applying for permission to enter as a graduate student is required to submit with his application an official statement of his graduation, together with a certificate of the standing gained in the several subjects of his course. The Faculty will determine the standing of such a student in this University. The fee for examination of certificates is \$2.00.

3. Candidates with approved degrees and academic records who proceed to the Master's degree shall be required:

(a) To spend one year in resident graduate study; or

(b) (At the discretion of the Faculty concerned):

(i) To do two or more years of private work under the supervision of the University, such work to be equivalent to one year of graduate study; or

(ii) To do one year of private work under University supervision and one term of resident graduate study, the total of such work to be equivalent to one year of resident graduate study.

4. One major and one minor shall be required and a thesis must be prepared on some approved topic in the major subject. (Two typewritten copies of each thesis shall be submitted. See special circular of "Instructions for the Preparation of Masters' Theses.")

The latest date for receiving Masters' Theses in the Spring Term shall be the last day of lectures; and the corresponding date for the Autumn Congregation shall be October 1st.

The work shall be of post graduate nature and equivalent in quantity to at least that of the final year. About one-quarter of the time should be devoted to the minor and the remainder to the major subject and thesis. Special encouragement will be given to the solution of problems related to British Columbia industries.

The choice of and relationship between major and minor subjects, and the amount of work in each, or of tutorial work, must be approved by the Head of each of the departments concerned, by the Committee on graduate studies, and by the Dean. Special forms of "Application for a Course Leading to the Master's Degree" may be obtained from the Registrar's office.

In the case of students who have completed the Teacher Training Course, First or Second Class standing in each of (1) History and Principles of Education, and in (2) Educational Psychology, is accepted as equivalent to a Minor for an M.A.Sc. degree, subject in each case to the consent of the Head of the Department in which the student wishes to take his Major.

5. Examinations, written or oral, or both, shall be required, and standing equivalent to at least 75 per cent. in the major subjects and 65 per cent. in the minor.

6. Application for admission as a graduate student shall be made to the Registrar by October 1st. For fees see Pages 37-41.

EXAMINATIONS AND ADVANCEMENT

1. Examinations are held in December and in April. December examinations will be held in all subjects of the Second and Third Years, and are obligatory for all students of these. December examinations in subjects of the Fourth and Fifth Years, excepting those subjects that are completed before Christmas, shall be optional with the Departments concerned. Applications for special consideration on account of illness or domestic affliction must be submitted to the Dean not later than two days after the close of the examination period. In cases where illness is the plea for absence from examinations, a medical certificate must be presented on the appropriate form which may be obtained from the Dean's

office, or if the illness occurs at the University the student may report to the Nurse, Auditorium Building, who may furnish the necessary certificate.

2. Candidates, in order to pass, must obtain at least 50 per cent. in each subject (for First Year see Page 179). The grades are as follows: First Class, an average of 80 per cent. or over; Second Class, 65 to 80 per cent.; Passed, 50 to 65 per cent. (See Pars. 12 and 13.)

Candidates in the Final Year of the B.A.Sc. course in Nursing, in order to obtain this degree, must obtain at least 50 per cent. in each subject, and at least 65 per cent. on the aggregate.

3. If a student's general standing in the final examinations of any year is sufficiently high, the Faculty may grant him supplemental examinations in the subject or subjects in which he has failed. Notice will be sent to all students to whom such examinations have been granted.

A request for the re-reading of an answer paper must be forwarded to the Registrar **WITHIN FOUR WEEKS** after the results of the examinations are announced. Each applicant must state clearly his reasons for making such a request in view of the fact that the paper of a candidate who makes less than a passing mark in a subject is read at least a second time before results are tabulated and announced. A re-reading of an examination paper will be granted only with the consent of the Head of the Department concerned. The fee for re-reading is \$2.00.

4. Supplemental examinations will be held in September. Special examinations will not be granted, except by special permission* of the Faculty and on payment of a fee of \$7.50 per paper, and then only during the third week in October or the third week in January. Nursing students with supplementals in the Second Year must, in order to enter the Hospital in September, obtain standing in these subjects by attendance at Summer Session. They may, however, take the September supplementals, thus postponing the date of entering upon the Hospital course.

5. Applications for supplemental examinations, accompanied by the necessary fees (see Schedule of Fees, Pages 37-41), must be in the hands of the Registrar by August 15th.

6. No student may enter the fourth or higher year with supplemental examinations still outstanding in respect of more than 4 units of the preceding year, or with any supplemental examination outstanding in respect of the work of an earlier year unless special

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on Page 179.

permission* to do so is granted by Faculty. Students in Nursing A must remove all outstanding supplemental examinations before entering their Third Year, (the First Year of the Hospital Course).

7. No student will be allowed to take any subject unless he has previously passed, or secured exemption, in all prerequisite subjects. If any subject has another which is concurrent with it, both must be taken in the same session.

8. A student who is required to repeat his year will not be allowed to take any work in a higher year excepting that a student who has taken the Field Work of Civil 2 or 7 of the preceding summer may take Civil 5 or Civil 13 the following session. A student repeating his year need not repeat, however, any of the following subjects in which he has made 65 per cent.: Civil Engineering 2, 5, 7, 12 (*b*), 13, or Mechanical Engineering 1, 2a, 6, or 7 Lab., and Geol. 1 (*b*) and (*d*) and Mech. 8, 9 and 10 Lab.

9. Any student repeating his year will not be admitted with any supplementals outstanding.

10. A student who fails twice in the work of the same year may, upon the recommendation of the Faculty, be required by the Senate to withdraw from the University.

11. Any student whose academic record, as determined by the tests and examinations of the first term of the Second or Third Year, is found to be unsatisfactory, may, upon the recommendation of the Faculty, be required by the Senate to discontinue attendance at the University for the remainder of the session. Such a student will not be re-admitted to the University as long as any supplemental examinations are outstanding.

12. Term essays and examination papers may be refused a passing mark if they are noticeably deficient in English.

13. Honours will be granted in any one of the last four years to students who obtain at least 50 per cent. in each subject and 80 per cent. on the whole at the annual examinations of that year.

14. Honour graduate standing will be granted to those who obtain honours in the final year and who have passed any one of the three preceding years with at least 50 per cent. in each subject and 75 per cent. on the whole.

*Special permission of the Faculty is granted only under exceptional circumstances, such as illness, or as outlined on Page 179.

DEPARTMENTS IN APPLIED SCIENCE

N.B.—The following subjects may be modified during the year as the Senate may deem advisable.

Department of Botany

Professor: A. H. Hutchinson.
Associate Professor: Frank Dickson.
Associate Professor: John Davidson.
Assistant Professor: John Allardyce.
Instructor: E. Miriam R. Ashton.

Biology

1. *Introductory Biology*.—The course is introductory to more advanced work in Botany or Zoology; also to courses closely related to Biological Science, such as Agriculture, Forestry, Medicine.

The fundamental principles of Biology; the interrelationships of plants and animals; life processes; the cell and division of labour; life-histories; relation to environment.

The course is prerequisite to all other courses in Biology.

One lecture and one period of two hours laboratory per week.

2. *Principles of Genetics*.—As in Arts. See Page 105.

3. *General Physiology*.—As in Arts. See Page 106.

Botany

1. (a) *General Botany*.—A course including a general survey of the several fields of Botany and introductory to more specialized courses in Botany.

Prerequisite: Biology 1.

Text-book: Hill, Overholtz and Popp, *Botany*, McGraw-Hill or Holman and Robbins, *General Botany*, Wiley.

This course is prerequisite to all courses in Botany except the Evening Course. Partial credit (2 units) towards Botany may be obtained through the Evening Course. (See Page 111.)

Two lectures and one period of two hours laboratory per week.

1. (b) *General Forest Botany (General Dendrology)*.—An introductory course open only to forestry students and including the study of tree characteristics, identification, structure, nutrition and ecology.

Text-book: Büsgen and Münch, *Structure and Life of Forest Trees*, Wiley.

Biology 1 is recommended as a preceding course.

Two lectures and two hours laboratory a week.

3 units.

1. (c) *General Forestry*.—A general survey, including forest distribution, silvics, influences, protection, and utilization.

Text-book: Moon and Brown, *Elements of Forestry*, Wiley. 3rd Edition.

Prerequisites: Botany 1 (b) or equivalent.

Three lectures a week.

3 units.

2. *Morphology*.—As in Arts. See Page 107.

3. *Plant Physiology*.—As in Arts. See Page 108.

4. *Histology*.—A study of the structure and development of plants; methods of killing, fixing, embedding, sectioning, staining, mounting, drawing, reconstructing. Use of microscope, camera lucida; photo-micrographic apparatus.

Text-book: Eames and McDaniels, *Plant Anatomy*, McGraw-Hill.

Prerequisite: Botany 1.

One lecture and two periods of three hours laboratory per week. Second Term.

5. *Systematic Botany*.

5. (a) *Economic Flora*.—An introduction to the classification of plants through a study of selected families of economic plants of British Columbia; useful for food, fodder, medicine and industrial arts; harmful to crops and stock. Weeds and poisonous plants. Methods of control.

Prerequisite: Botany 1.

Text-books: Jepson, *Economic Plants of California*, Jepson, University of California. Thomas and Sifton, *Poisonous Plants and Weed Seeds*, University of Toronto Press.

Two lectures and two hours laboratory per week. First Term.

5. (b) *Dendrology*.—A study of the forest trees of Canada, the common shrubs of British Columbia, the important trees of the United States which are not native to Canada. Emphasis on the species of economic importance. Identification, distribution, relative importance, construction of keys.

Prerequisite: Botany 1.

Text-books: Mortan & Lewis, *Native Trees of Canada*, Dominion Forestry Branch, Ottawa. Sudworth, *Forest Trees of the Pacific Slope*, Superintendent of Documents, Washington, D. C.; Davidson and Abercrombie, *Conifers, Junipers and Yew*, T. F. Unwin.

One lecture and one period of two or three hours laboratory or field work per week.

5. (c) *Descriptive Taxonomy*.—As in Arts. See Page 109.

6. (b) *Forest Pathology*.—Nature, identification and control of the more important tree-destroying fungi and other plant parasites of forests.

Text-book: Rankin, *Manual of Tree Diseases*, Macmillan.

One lecture and one period of two hours laboratory per week during one-half of one term.

6. (c) *Plant Pathology (Elementary)*.—A course dealing with basic concepts of plant disease.

Text-book: Heald, *Manual of Plant Diseases*, McGraw-Hill.

Prerequisite: Botany 1.

Two lectures and four hours laboratory a week. Second Term.

7. (a) *Forest Ecology and Geography*.—The inter-relations of forests and their environment; the biological characteristics of important forest trees; forest associations; types and regions; physiography.

Reference books: Whitford and Craig, *Forests of British Columbia*, Ottawa; Zon and Sparhawk, *Forests of the World*, McGraw-Hill; Hardy, *The Geography of Plants*, Oxford University Press.

One lecture per week during one term. Field trips and laboratory work during the session amounting to thirty hours, one period per week.

Department of Chemistry

Professor: R. H. Clark.

Professor of Analytical Chemistry: E. H. Archibald.

Professor: W. F. Seyer.

Associate Professor: M. J. Marshall.

Associate Professor: William Ure.

Assistant Professor: J. Allen Harris.

1. *General Chemistry*.—The course comprises a general survey of the whole field of Chemistry and is designed on the one hand to provide a thorough groundwork for further study in the sciences and on the other to give an insight into the methods of chemical investigation, the fundamental theories and some important applications, such as are suitable to the needs of a cultural education. Students must reach the required standard in both lecture and laboratory work.

Text-book: *Smith's College Chemistry*, revised by Kendall, 1935 Edition, The Century Co. For the Laboratory: Harris and Ure, *Experimental Chemistry for Colleges*, McGraw-Hill.

Three lectures and two and one-half hours laboratory a week.

3 units.

2. Qualitative and Quantitative Analysis.

(a) *Qualitative Analysis*.—During the first six weeks of the term an additional lecture may be substituted for a part of the laboratory work.

Text-book: A. A. Noyes, *Qualitative Analysis*, Macmillan.

For reference: Miller, *The Elementary Theory of Qualitative Analysis*, The Century Co.; Hammett, *Solutions of Electrolytes*, McGraw-Hill.

Prerequisite: Chemistry 1.

One lecture and one period of three hours laboratory per week.

(b) *Quantitative Analysis*.—This course embraces the more important methods of gravimetric and volumetric analysis.

Text-book: Willard and Furman, *Quantitative Analysis*, Van Nostrand.

Prerequisite: Chemistry 1.

One lecture and one period of three hours laboratory per week.

Course (b) must be preceded by Course (a).

3. *Organic Chemistry*.—This introduction to the study of the compounds of carbon will include the method of preparation and a description of the more important groups of compounds in both the fatty and the aromatic series.

Text-books: Holleman, Walker, *Text-book of Organic Chemistry*, Wiley; Gattermann-Wieland, *Laboratory Methods of Organic Chemistry*, Macmillan.

Two lectures and one period of three hours laboratory per week.

4. (a) *Theoretical Chemistry*.—An introductory course in the development of modern theoretical chemistry, including a study of gases, liquids and solids, solutions, ionization and electrical conductivity, chemical equilibrium, kinetics of reactions, thermochemistry and thermodynamics, colloids.

Text-book: Millard, *Physical Chemistry for Colleges*, McGraw-Hill.

References: Noyes and Sherrill, *Chemical Principles*, Macmillan. For laboratory use: Findlay, *Practical Physical Chemistry*, Longmans; and Sherrill, *Laboratory Experiments on Physical-Chemical Principles*, Macmillan.

Prerequisites: Chemistry 2 (except for students majoring in Physics). Honour students majoring in Chemistry should take Mathematics 10 concurrently.

Two lectures and three hours laboratory per week.

3 units.

4. (b) This course is the same as Chemistry 4 (a) with the omission of the laboratory, and is open only to students not taking Honours in Chemistry. 2 units.

5. *Advanced Qualitative and Quantitative Analysis.*

(a) *Qualitative Analysis.*—The work of this course will include the detection and separation of the less common metals, particularly those that are important industrially.

One lecture and two periods of three hours laboratory per week. First Term.

(b) *Quantitative Analysis.*—The determinations made will include the more difficult estimations in the analysis of rocks, as well as certain constituents of steel and alloys. The principles on which analytical chemistry is based will receive a more minute consideration than was possible in the elementary course.

Prerequisite: Chemistry 2.

One lecture and two periods of three hours laboratory per week. Second Term.

6. *Industrial Chemistry.*—Those industries which are dependent on the facts and principles of Chemistry will be considered in as much detail as time will permit. The lectures will be supplemented by visits to manufacturing establishments in the neighbourhood, and it is hoped that some lectures will be given by specialists in their respective fields.

Prerequisites: Chemistry 2, 3 and 4.

Two lectures per week.

7. *Physical Chemistry.*—This course is a continuation of Chemistry 4 and treats in more detail the kinetic theory of gases, properties of liquids and solids, elementary thermodynamics and thermochemistry, properties of solutions, theoretical electrochemistry, chemical equilibrium, kinetics of reactions, radioactivity.

Text-book: Getman, *Outlines of Theoretical Chemistry*, Wiley. Reference: Noyes and Sherrill, *Chemical Principles*, Macmillan. Laboratory texts: Sherrill, *Laboratory Experiments on Physical Chemistry*, Macmillan; Findlay, *Practical Physical Chemistry*, Longmans.

Prerequisites: Chemistry 2, 3 and 4.

Two lectures and three hours laboratory per week. 3 units.

8. *Electrochemistry.*—

(a) As in Arts. (See Page 114.)

(b) Electric furnaces, electrolytic refining and deposition of metals will be studied in detail.

Text-books: Creighton & Koehler, Vol. II., *Principles of Electrochemistry*, Wiley & Sons; Thompson, *Theoretical and Applied Electrochemistry*, Macmillan.

Prerequisite: Chemistry 4.

Two lectures and three hours laboratory per week. Second Term.
1½ units.

9. *Advanced Organic Chemistry*.—As in Arts. (See Page 114.)

11. *Physical Organic Chemistry*.—As in Arts. (See Page 115.)
(Given in 1939-40 and alternate years.)

12. *Colloid Chemistry*.—As in Arts. (See Page 115.)

16. *Chemical Engineering*.—Theory and design of fractionating columns, condensers, multiple effect evaporators; chamber, tunnel, drum, rotary and spray driers. Theory and practice of technical filtration; calculation of capacity of box filters, filter presses, centrifugals, etc. Principles of counter current extraction.

Prerequisites: Chemistry 3 and 4.

Text-book: Walker, Lewis & McAdams, *Principles of Chemical Engineering*, McGraw-Hill.

Reference books: Liddell, *Handbook of Chemical Engineering*, McGraw-Hill; Badger, *Elements of Chemical Engineering*, McGraw-Hill.

Three lectures per week.

The following firms have kindly permitted the students in Chemical Engineering to visit their plants as part of their practical training:

British Columbia Electric Railway Co. (Gas Department).

Sherwin-Williams Co. of Canada, Limited.

Royal Crown Soaps, Limited.

Imperial Oil Company, Limited.

B. C. Refractories, Limited.

Canadian Industries, Limited.

Westminster Paper Mills.

Canadian Carbonate, Limited.

17. *Chemical Thermodynamics*.—As in Arts. (See Page 115.)
(Given in 1939-40 and alternate years.)

18. *Advanced Inorganic Chemistry*.—As in Arts. (See Page 116.)
(Given in 1940-41 and alternate years.)

21. *Chemical Kinetics*.—As in Arts. (See Page 116.)
(Given in 1939-40 and alternate years.)

22. *Surface Chemistry*.—As in Arts. (See Page 116.)
(Given in 1940-41.)

Department of Civil Engineering

Professor: John Norison Finlayson.

Associate Professor: F. A. Wilkin.

Associate Professor: A. H. Finlay.

Associate Professor: A. Lighthall.

Associate Professor: J. F. Muir.

Instructor: E. S. Pretious.

Instructor: Archie Peebles.

Instructor: A. Hrennikoff (on leave of absence).

Instructor: Walter V. McDonald.

Honorary Lecturer: J. B. Alexander.

1. *Descriptive Geometry*.—Geometrical drawing, orthographic, isometric and axometric projections.

Text-book: Armstrong, *Descriptive Geometry*, Second Edition, Wiley.

One three-hour period per week.

Mr. Wilkin, Mr. Pretious, Mr. Wighton.

2. *Field Work 1*.—Elementary surveying. Practical problems involving the use of the chain, telemeter, compass, transit and level. Traverses, closed circuits, contour and detail surveys. Levels for profiles, benches and contours.

Work commences immediately upon the close of spring examinations, and consists of field work, eight hours per day for twenty days, or equivalent.

Mr. Pretious, Mr. Peebles, Mr. McDonald.

4. *Graphical Statics*.—Elementary theory of structures; composition of forces; general methods involving the force and equilibrium polygons; determination of resultants, reactions, centres of gravity, bending moments; stress in framed structures, cranes, towers, roof-trusses and bridge-trusses. Algebraic check methods will be used throughout.

Text-book: Hudson and Squire, *Elements of Graphic Statics*, McGraw-Hill.

One two-hour period per week. Mr. Peebles, Mr. Wighton.

5. *Mapping 1*.—Draughting from notes obtained in Civil 2. Maps of telemeter, compass and transit surveys. Contour and topographical maps in convention or color.

Prerequisite: Civil 2.

One lecture and one two-hour period per week. Mr. Pretious, Mr. Peebles.

6. *Surveying 1*.—Chain and angular surveying; the construction, adjustment and use of the transit, level, compass, planimeter,

aneroid, sextant, and plane table; levelling; topography; contour surveying; stadia; railway curves; vertical curves.

Prerequisites: Civil 2, Math. 1.

Text-books: Ives, *Surveying Manual*, Wiley; *Field Office Tables*, Allen.

References: Allen, *Curves and Earthwork*, McGraw-Hill. Breed and Hosmer, *Elementary Surveying*, Vol. I., Wiley.

Two lectures per week. Mr. Lighthall.

7. *Field Work 2*.—(a) Railway surveys, reconnaissance, preliminary and location surveys, methods of taking topography, cross-sectioning; estimating quantities; running in easement and vertical curves, etc. The notes secured will be used in class work for mapping and for estimating quantities and costs.

(b) Hydrometric Surveying—Cross section of a stream, gauge readings, velocity of flow by current meter, and calculation of the volume of flow.

(c) Solar and stellar observations for latitude and azimuth; adjustments of instruments; the use of plane table, sextant and minor instruments.

Prerequisites: Civil 2 and Civil 6.

Time, same as for Civil 2.

Mr. Wilkin, Mr. Lighthall, Mr. Finlay, Mr. Muir.

8. *Foundations and Masonry*.—(a) Borings; bearing power of soils; pile and other foundations; cofferdams; caissons; open dredging; pneumatic and freezing processes; retaining walls; estimates of quantities and costs.

Prerequisite: Civil 4; Civil 10 must either precede or be taken concurrently.

Text-book: Jacoby and Davis, *Foundations of Bridges and Buildings*, McGraw-Hill.

Two lectures and one three-hour period per week. First Term. Mr. Muir.

(b) Theory of Earth Pressure; combined stresses, ellipse of stress, principal and conjugate axes, as applied to the determination of earth pressures; Rankine's, Coulomb's, Weyrauch's, Cain's and Rebhann's theories and solutions for earth pressure; retaining walls; dams.

Prerequisites: Civil 4; Civil 8 (a).

References: Ketchum, *Walls, Bins and Grain Elevators*; Howe, *Retaining Walls for Earth*; Cain, *Earth Pressure, Walls and Bins*; Morley, *Theory of Structures*.

Two lectures per week. Second Term. Mr. Muir.

9. *Structural Design 1*.—Problems in draughting, illustrating designs in structural engineering; estimates of quantities and costs; preparation of plans.

Text-books: Conklin, *Structural Draughting and Elementary Design*, Wiley; Carnegie, *Pocket Companion*, Carnegie Steel Co.

Prerequisite: First Term of Civil 10.

Two lectures and one three-hour period both terms. Mr. Muir.

10. *Strength of Materials*.—(a) A thorough introduction to the fundamental principles dealing with the strength of materials; stress, deformation, elasticity and resilience; the application of the laws of derived curves to the construction of load, shear, moment, inclination and deflection diagrams, fibre stress, deflection of simple, cantilever, and continuous beams under any loading; riveted joints; torsion; columns, combined stresses; longitudinal shear; reinforced concrete; special beams.

(b) *Laboratory*.—A lecture course on the properties of engineering materials. Testing of timber, steel and concrete specimens to determine the strength of these materials. Hardness testing. The testing of cement aggregates and the proportioning of concrete mixes.

About one-half of the laboratory time will be set aside for the solution of problems in investigation and design.

Text-books: Maurer and Withey, *Strength of Materials*, Wiley; American Society for Testing Materials, *Selected Standards for Students of Engineering*; *Standard Specifications for Structural Timber A 23*, 1937, Canadian Engineering Standards Association, Ottawa; *Wood Handbook*, Superintendent of Documents, Washington, D.C.

References: Swain, *Strength of Materials*, McGraw-Hill; Morley, *Strength of Materials*, Longman; *Canadian Woods, Their Properties and Uses*, King's Printer, Ottawa; *Douglas Fir Use Book*, West Coast Lumbermen's Association, 364 Stuart Building, Seattle; Wood, *Structural Design Data*, National Lumber Manufacturers' Association, Washington, D.C.

Prerequisites: Physics 6; Civil 4 and 31.

Three lectures and one three-hour period per week. First Term.

Two lectures and one three-hour period per week. Second Term.

Mr. Lighthall, Mr. Alexander, Mr. McDonald.

NOTE:—Part of the laboratory testing is performed in the Forest Products Laboratory.

11. *Transportation 1. Railways*.—The inception of railway projects; reconnaissance, preliminary and location; grade problems;

grades, curvature and distance and their effects upon operating costs and revenue; velocity and pusher grades; adjustment of grades for unbalanced traffic; construction; railway economics, traffic, revenue, branch lines.

Prerequisite: Civil 6 and 7.

Text-book: Williams, *Design of Railway Location*, Wiley.

References: Allen, *Railroads, Curves and Earthwork*, McGraw-Hill; Wellington, *Economic Theory of the Location of Railways*, Wiley.

Two lectures per week. Mr. Wilkin.

12. *Hydraulic Engineering 1*.—(a) Fundamental principles and their application. Problems on gauges, pressure on surfaces. Bernoulli's theorem, flow through orifices, short tubes, weirs, pipes, and open channels, and the dynamic action of jets.

(b) Laboratory period includes experimental work on gauges, pipes, weirs, orifices, short tubes and logarithmic plotting.

Prerequisite: Physics 6.

Text-book: Russell, *Hydraulics*; Holt, 4th edition.

Two lectures and one three-hour period per week.

Mr. Wilkin, Mr. Pretious.

13. *Drawing*.—Mapping from notes obtained in Civil 7; topographic maps from photographic plates; perspective drawings of buildings and other structures; and map projections.

Text-book: *Crosskey Elementary Perspective*, Blackie & Son.

One three-hour period per week.

Mr. Lighthall, Mr. Pretious.

14. *Surveying 2*.—(a) A continuation of Civil 6. Transition curves for highways and railways; mine, hydrographic and phototopographic surveying; Dominion and Provincial surveys. First Term.

(b) Field Astronomy. Second Term.

Text-book: *Surveying*, Bouchard, International Text Book Co.

References: *Manual of Surveys of Dominion Lands; Instructions for B. C. Land Surveyors. Surveying*, Davis Foote and Raynor, McGraw-Hill.

Prerequisite: Civil 6.

Two lectures per week. Mr. Lighthall.

16. *Field Work 3*.—The adjustment, care and use of precise surveying instruments. Method of carrying out triangulation surveys. Determination of latitude, azimuth and time to a high degree of accuracy. Base line measurements and precise levelling.

Time, same as for Civil 2. Mr. Lighthall.

17. *Structural Design 2*.—Design of simple span steel bridges. Determination of stresses due to vertical, longitudinal and lateral forces. Proportioning of parts. Design of sections, connections, end supports and various details. Making detail drawings.

Text-books: Kirkham, *Structural Engineering*, McGraw-Hill; Carnegie, *Pocket Companion*.

References: Kuntz, *Design of Steel Bridges*, McGraw-Hill.

Prerequisites: Civil 8, 9 and 10.

Two lectures and one three-hour period per week. First Term.

Two lectures and two three-hour periods per week. Second Term.

Mr. Muir.

18. *Engineering Economics*.—(a) A general treatment of sinking funds; yearly cost of service; collecting data; estimating; economic selection, reports.

Text-book: Fish, *Engineering Economics*, 2nd Edition, McGraw-Hill.

Two lectures per week. First Term. Mr. Wilkin.

(b) Principles of financing; forms of business enterprises; stocks; bonds; operating and fixed charges; business finance; capital and interpretation of financial statements.

References: Fish, *Engineering Economics*, 2nd Edition; Anger, *Digest of Canadian Mercantile Law*; Lough, *Business Finance*.

Two lectures per week. Second Term. Mr. Wilkin.

19. *Engineering Law*.—The engineer's status; fees; salary; as a witness; responsibility; engineering contracts; tenders; specifications; plans; extras and alterations; time; payments and certificates; penalty, bonus or liquidated damages; maintenance and defects; subcontractors; agents; arbitration and awards; specification and contract writing.

Text-book: Kirby, *Elements of Specification Writing*, Wiley & Sons.

References: Anger, *Digest of Canadian Mercantile Law of Canada*, W. H. Anger; Laidlaw & Young, *Engineering Law*, Univ. of Toronto Press.

One lecture per week. Mr. Pretious.

22. *Municipal Engineering*.—*Sewerage and Sewage Disposal*. General methods and economic consideration; quantity and run-off; design of sewers, man-holes, flush tanks, etc.; construction methods, materials and costs; estimate, design, maintenance and management.

Sewage Disposal: Physical, chemical, biological and economical

aspects of sewage treatment; dilution; screening, sedimentation, filtration; disinfection; maintenance and management costs.

References: Metcalf and Eddy, *Sewerage and Sewage Disposal*, McGraw-Hill.

Water Supply.—Rainfall; evaporation; run-off; quantity, quality and pressure required; pumping machinery; storage; aqueducts, pipe lines and distribution systems; purification systems; valves, hydrants and fire service; materials, estimates and designs; construction methods and costs.

Text-book: Waterman, *Elements of Water Supply Engineering*, Wiley.

Reference: Babbitt and Doland, *Water Supply Engineering*, McGraw-Hill.

Town Planning.—Covering the economical and artistic development of a city; city management. Street cleaning and disposal of waste; composition and quantity of city wastes; collection, dumping and disposal; land treatment; incineration and reduction; costs and returns.

Reference: Lewis, *City Planning*, Wiley.

Prerequisite: Civil 12.

Two lectures and one two-hour period per week. Mr. McDonald.

23. *Transportation 2. — Highway Engineering*.—Development and organization. Co-ordination of transportation systems. Administration and finance; economics and planning; location and design; materials and construction methods. Soil studies including laboratory analysis of soils. Highway safety and traffic control; transportation surveys.

Text-book: Bruce, *Highway Design and Construction*, International Textbook Co.

Reference: Hogentogler, *Engineering Properties of Soil*, McGraw-Hill.

Two lectures per week. Mr. Peebles.

24. *Reinforced Concrete Design*.—Intended to train the student in methods of analysis and design of reinforced concrete structures including beams, slabs, columns, footings and rigid frames. A complete design of a small reinforced concrete building, including the necessary drawings, is prepared by each student.

Text-book: Urquhart & O'Rourke, *Design of Concrete Structures*, 3rd Ed., John Wiley; *Handbook of Reinforced Concrete Building Design*, American Concrete Institute.

Prerequisite: C.E. 10.

Two lectures and one three-hour period per week First Term, and one three-hour period per week Second Term.

Mr. Finlay.

25. *Theory of Structures*.—An analysis of the principal types of framed structures under dead and live loads, including a study of the deflections to which such structures are subject.

Text-book: Sutherland & Bowman, *Introduction to Structural Theory and Design*.

References: Johnson, Bryan & Turneure, *Modern Framed Structures*, Vols. 1-3, Wiley.

Prerequisite: Civil 10.

Two lectures and two three-hour periods per week. First Term.
Mr. Finlay.

26. *Class Excursions*.—Members of the Fifth Year class in Civil Engineering, under the supervision of an instructor, will visit such factories, industrial developments, public works, docks, shipyards and important examples of engineering construction as are calculated to assist the student best to grasp the application and scope of the studies pursued and to broaden his vision of the engineering field. Written reports of trips are required.

NOTE:—In periods where no trips are taken, tests of hydraulic machines will be made in the Hydraulic Laboratory. (See Civil 29.)

27. *Civil Engineering Thesis*.—Original research on selected topics; analysis of engineering projects; experimental or theoretical investigations. Topics may be selected from divisions of the Civil Engineering Course: Geodetics, Railways, Hydraulics, Municipal, Highways, Economic and Business Engineering, Structures. Copy of thesis in regular form and binder must be filed with the Department.

28. *Seminar*.—Written and oral discussion of articles appearing in the current Transactions and Proceedings of the various engineering societies, also reviews of important papers in engineering periodicals; reports on local engineering projects visited in Civil 26; written outlines must be prepared for all oral reports; training in technical writing and public speaking.

Required of all Fourth and Fifth Year students in Civil Engineering.

Reference: Rickard, *Technical Writing*, McGraw-Hill.

One hour per week.

29. *Water Power Development*.—The principles of hydrology, rainfall, runoff, stream flow, hydrographs, specific speed, charac-

teristic curves, selection of hydraulic machines, theory of turbines, tangential water wheels, and centrifugal pumps, hydro-electric installations, waterhammer, and surge tanks.

Laboratory work consists of testing pumps and turbines, plotting curves and solving problems.

Text-book: Daugherty, *Hydraulic Turbines*, 3rd Edition, McGraw-Hill.

References: Barrow, *Water Power Engineering*, McGraw-Hill; Meyer, *Elements of Hydrology*, 2nd Edition, John Wiley & Sons; Creager and Justin, *Hydro-electric Engineering*, 1st Edition, John Wiley & Sons.

Two lectures and one two-hour period per week. Second Term.

Mr. Wilkin.

30. *Engineering Problems 1*.—Training in methods of attacking, analyzing and solving engineering problems. Coaching in proper methods of work and study, including drill in systematic arrangement and workmanship in calculations. The content is based upon the application of mathematics to problems in physics and engineering.

Prerequisite: First Year Arts, or Senior Matriculation.

Two two-hour periods per week.

Mr. Finlay, Mr. Pretious, Mr. Peebles, Mr. Kersey.

31. *Mechanics 2*.—An extension of the subject matter of Physics 4a applying the methods of the differential and integral calculus.

Prerequisite: Physics 4a.

Text-book: Poorman, *Applied Mechanics*, McGraw-Hill.

Two lectures per week. Mr. Finlayson.

Engineering Problems 2.—A continuation of Engineering Problems 1, involving a thorough drill in problems in the principal divisions of Mathematics given in the Second and Third Years of Applied Science, drawn from the field of mechanics, surveying, draughting and engineering.

Prerequisites: Civil 30, Math. 1, 2, 3 and 4.

One three-hour period per week.

Mr. Lighthall, Mr. Finlay, Mr. McDonald.

32. *General Engineering*.—A course designed to give the student a knowledge of the commercial and financial aspects of the engineering profession, its historical background and the relations between science and modern industry.

One lecture per week. Mr. Finlayson.

50. Elementary problems in rural engineering, dealing with drainage, water supply, sewerage and sewage disposal, ventilation,

simple structures and surveying. Adapted to the needs of students in Agriculture.

One lecture per week. Mr. Lighthall.

COURSES FOR GRADUATE STUDENTS

100. *Advanced Structural Analysis*.—A course devoted to the analysis of statically indeterminate structures, such as arches, rigid frames, continuous trusses and suspension bridges.

Mr. Finlay.

Department of English

Professor: G. G. Sedgewick.

Assistant Professor: Edmund Morrison.

SECOND YEAR

3. *Composition*.—A course in composition especially designed to meet the needs of students in the Faculties of Applied Science and Agriculture. It offers training in economical and accurate objective writing. The work consists of (1) essays, class exercises, and selected reading, and (2) written examinations. Students will be required to make a passing mark in each of these two parts of the work.

Text-book: To be announced.

Two hours a week. Mr. Morrison.

THIRD YEAR

4. *Technical Writing*.—This course follows English 3 and offers instruction in the preparation and writing of technical papers and reports, with emphasis upon the organization and forms appropriate to such work.

Text-book: To be announced.

One hour a week. Mr. Morrison.

Department of Forestry

Professor:

Associate Professor: F. Malcolm Knapp.

Instructor: Braham G. Griffith.

Honorary Lecturer: R. M. Brown.

Honorary Lecturer: J. H. Jenkins.

Special Lecturer: William Byers.

Special Lecturer: L. B. Dixon.

Special Lecturer: Marc W. Gormely.

1. (c) *General Forestry*.—A general survey including forest distribution, silvics, influences, protection and utilization.

Reference books: Whitford and Craig, *Forests of British Columbia*, Commission of Conservation, Ottawa; Zon and Sparhawk, *Forest Resources of the World*, McGraw-Hill; *A National Plan for American Forestry*, Superintendent of Documents, Washington, D. C. Various government publications.

Three lectures per week. Third Year. 3 units.

1. (b) *General Forest Botany (General Dendrology)*.—An introductory course designed particularly for forestry students and including the study of tree characteristics, structure, nutrition and identification.

Text-book: Büsgen and Münch, *Structure and Life of Forest Trees*, Wiley.

Biology 1 is recommended as a preceding course.

Two lectures and two hours laboratory a week. Second Year. 3 units.

2. *Mensuration*.—(a) Log scaling and Measurement of felled timber products.

Reference books: Chapman and Demeritt, *Elements of Forest Mensuration*, J. B. Lyon; Rapraeger, *Log Scaling and Grading Practice in the Douglas Fir Region*, Pacific Northwest Forest Experiment Station, Portland, Oregon.

One lecture and one period of two hours laboratory or field work per week. Spring Term. Fifth Year. 1 unit.

(Not given in 1939-40.)

(b) Timber Cruising and Stumpage Appraised.

Reference books: *Instructions for Forest Surveys*, King's Printer, Victoria, B. C.; *Instructions for Appraising Stumpage in National Forests*, Superintendent of Documents, Washington, D. C.

One lecture and one period of two hours laboratory or field work per week. Fall Term. Fifth Year. 1 unit.

(Not given in 1939-40.)

(b) (Old Curriculum.) Measurement of growth of trees and forests. Preparation of volume, growth, and yield tables.

Text-book: Bruce and Schumacher, *Forest Mensuration*, McGraw-Hill.

Two hours lecture or laboratory period per week. Fifth Year.

(c) (New Curriculum.) Measurement of growth of trees and forests. Preparation of volume, growth and yield tables.

Text-book: Bruce and Schumacher, *Forest Mensuration*, McGraw-Hill.

Two lectures and one period of three hours laboratory or field work per week. Fall Term. Fifth Year. 2 units.

(Not given in 1939-40.)

3. *Forest Protection*.—The fire problem, legislation, organization for prevention and control.

Text-book: *Western Fire Fighters' Manual*, Western Forestry and Conservation Association, Portland.

Reference books: Hawley, *Forest Protection*, Wiley. Various government publications.

One lecture per week. Second Term.

(Not given in 1939-40.)

5. *Wood Technology*.—The structure of wood; the identification of different woods and their qualities and uses; wood seasoning; wood preservation; emphasis on the Canadian woods of commercial importance.

Text-book: Record, *Identification of the Timbers of Temperate North America*, Wiley.

Reference books: Brown and Panshin, *Identification of the Commercial Timbers of the United States*, McGraw-Hill; Forsaith, *The Technology of New York State Timbers*, Technical Publication No. 18, New York State College of Forestry, Syracuse, New York; Koehler, *The Properties and Uses of Wood*, McGraw-Hill; Koehler and Thelen, *Kiln Drying of Lumber*, McGraw-Hill.

Two lectures and one period of three hours laboratory per week, First Term; one lecture and one period of two hours laboratory per week, Second Term.

6. (a) *Forest Management 1*.—The principles and methods of organizing forest areas for sustained yield management on an economic basis. Normal forest, increment, rotation, regulation of cut, theory of working plans.

Text-book: Recknagel, Bentley and Guise, *Forest Management*, Wiley.

Reference books: Roth, *Forest Regulation*, Roth, Ann Arbor, Michigan. Schlich, *Forest Management*, Bradbury Agnew.

One lecture per week. Fourth Year.

(Not given in 1939-40.)

6. (b) *Forest Management 2*.—The practical application of the principles of forest management. Graphical method used in regulating forests; valuation of forests and forest land; forest taxation and insurance; financial working plans.

Text-book: Matthews, *Management of American Forests*, McGraw-Hill.

Reference books: Roth, *Forest Regulation*, Roth, Ann Arbor, Michigan. *Instructions for Forest Surveys*, King's Printer, Victoria, B. C. Trevor and Smythies, *Practical Forest Management*, Government Press, Allahabad. Chapman, *Forest Management*, Lyon. Various government publications.

One lecture per week. Fifth Year.

7. *History of Forestry and Forest Administration*.—The development of forestry in different parts of the world; forest resources and industries; policy, legislation and education; organization and administration of the Forest Services of the United States and of Canada.

Reference books: Fernow, *History of Forestry*, University of Toronto Press, 2nd Edition. Schlich, *Forest Policy in the British Empire*, Bradbury Agnew. Ise, *The United States Forest Policy*, Yale University Press. Various government publications.

Two lectures per week. First Term. Fifth Year.

8. *Silviculture*.—The principles and methods of caring for forests and of growing timber crops. Seed testing, nursery practice, planting, thinning and improvement cuttings, slash disposal.

Text-books: Baker, *The Theory and Practice of Silviculture*, McGraw-Hill; Toumey and Korstain, *Seeding and Planting in the Practice of Forestry*, Wiley; Troup, *Silvicultural Systems*, Oxford University Press.

Reference books: Hawley, *Practice of Silviculture*, Wiley, 2nd Edition; Schlich, *Silviculture*, Bradbury Agnew; various government publications.

Two lectures per week during the year, and one period of three hours field or laboratory work during the Second Term.

9. *General Lumbering*.—A general study of the principles and practice of logging and milling in the chief timber regions of North America.

Text-book: Brown, *Logging Principles and Practices*, Wiley.

Reference books: Bryant, *Logging*, Wiley, 2nd Edition; various government publications.

Two lectures per week. First Term.

One lecture per week. Second Term.

(Not given in 1939-40.)

10. *Logging Engineering*.—An intensive study of logging systems and operations in the forests of western North America.

Text-book: Brandstrom, *Analysis of Logging Costs and Operating Methods in the Douglas Fir Region*, Charles Lathrop Pack Forestry Foundation, Washington, D. C.

Reference books: Brown, *Logging Transportation*, Wiley. Various articles in *The Timberman*, *B. C. Lumberman*, and other trade journals and government publications.

One lecture per week. First Term.

Two lectures per week. Second Term. Fifth Year.

One period of four hours laboratory or field work per week, alternating with Forestry 11 and 12.

11. *Milling*.—A study of the sawmilling and allied woodworking industries of western North America.

Text-book: Bryant, *Lumber*, Wiley.

Reference books: Oakleaf, *Lumber Manufacture in the Douglas Fir Region*, Commercial Journal Co. Brown, *American Lumber Industry*, Wiley. Seeley, *Small Sawmills*, U. S. D. A. Bul. 718, Superintendent of Documents, Washington, D. C.

Two lectures per week; one period of four hours laboratory or field work per week, alternating with Forestry 10. First Term. Fifth Year.

12. *Forest Products and Marketing*.—A study of marketing methods and problems of the lumber trade—domestic consumption and export—markets in foreign countries; also of other forest industries, including pulp and paper, shingles, veneers, boxes.

Text-book: Brown, *Timber Products and Industries*, Wiley.

Reference books: Brown, *The American Lumber Industry*, Wiley. Joint authorship, *The Manufacture of Pulp and Paper*, Vols. III. to V., McGraw-Hill. Knight and Wulpi, *Veneers and Plywood*, Ronald Press Co.

Two lectures per week; one period of four hours laboratory or field work per week, alternating with Forestry 10. Second Term. Fifth Year.

13. *Lumber Grading*.—An intensive study of the grading, tallying and shipping of Pacific Coast lumber products for domestic and export markets.

Text-book: Beaulieu and Lauritzen, *Lumber Grading Practice*, British Columbia Lumber & Shingle Manufacturers' Association.

One lecture and one period of two hours field work per week. Second Term. Fifth Year.

14. *Seminar*.—Oral presentation and discussion of current forestry topics and reviews of important papers in forestry periodicals, also reports of field trips in connection with F.E. 10, 11 and 12; written outlines must be prepared; training in technical writing and public speaking.

One hour per week. Fifth Year.

15. *Forestry Thesis*.—Research in some phase of forestry which is of particular interest to the student. The project must be approved by the Department and a copy of the thesis in regular form and binder must be filed with the Department not later than the end of the spring examination period.

Three hours per week throughout the Fifth Year.

16. *Forest Economics 1*.—This course is devoted to the economic aspects of land use, forestry resources, timber production, and the forest industries, especially the distribution of lumber and other products.

Three lectures per week. Fourth Year.

3 units.

Vancouver Laboratory
Forest Products Laboratories of Canada,
Forest Service
Department of Mines and Resources, Canada

R. M. Brown, B.Sc.F. (Toronto), Superintendent.

R. S. Perry, B.Sc. (McGill), Assistant Engineer.

Division of Timber Mechanics

J. B. Alexander, M.Sc. (New Brunswick), Chief, Timber Mechanics Division.

J. T. Lee, Timber Tester.

D. S. Wright, Timber Tester.

W. W. Davidson, Assistant Timber Tester.

R. J. Eades, Assistant Timber Tester.

Division of Timber Products

J. H. Jenkins, B.A.Sc. (Brit. Col.), Chief, Timber Products Division.

H. W. Eades, B.Sc.F. (Washington), Assistant Timber Pathologist.

F. W. Guernsey, B.A.Sc. (Brit. Col.), Assistant in Timber Products.

The Forest Products Laboratories of Canada is a research organization maintained by the Forest Service of the Department of Mines and Resources, Canada. Research in forest products is carried on in two laboratories, one in Ottawa and the other in Vancouver, while all questions relating to pulp and paper research are dealt with by a co-operative laboratory established at McGill University, Montreal, through an arrangement between the Forest Products Laboratories of Canada, the Canadian Pulp and Paper Association, and McGill University.

The Vancouver laboratory was established in 1918 and has been

maintained in association with the University of British Columbia since that time. Originally equipped only for the mechanical testing of western woods, the organization has shown a rapid expansion and now includes research in all branches of timber mechanics, lumber seasoning investigations, timber decay problems, mill studies, waste utilization, wood identification, etc.

One of the most important phases of the work of the laboratory is its technical service to all branches of the timber industry in the dissemination of information on a wide variety of subjects having to do with forest products. While research in wood preservation, wood distillation, container tests, pulp and paper, etc., is at present confined to the Ottawa and Montreal Laboratories, the close contact maintained between the three organizations permits the extension of this technical service to include such subjects as wood utilization of all kinds, wood preservation, wood distillation, pulp and paper, new industries, etc.

A mutually beneficial scheme of co-operation is maintained between the Laboratory and the University, whereby students of the University in Engineering and Forestry have access to the Laboratory to watch the work being carried on and to use the apparatus at times in testing strength of materials. The staff of the Laboratory also has the benefit of the University library and the advice and assistance of University specialists in related work.

Department of Geology and Geography

Professor: M. Y. Williams.

Professor of Physical and Structural Geology: S. J. Schofield.

Professor of Mineralogy and Petrography: Clarence Otto Swanson.

Professor of Geology: Henry C. Gunning.

Assistant Professor of Mineralogy and Petrography: H. V. Warren.

Instructor: Gordon Davis.

Lecturer: Victor Dolmage.

Geology

1. *General Geology*.—This course serves as an introduction to the science of Geology. The following subjects are treated in the lectures and laboratory:

(a) *Physical Geology*, including weathering, work of the wind, ground water, streams, glaciers, the ocean and its work, the structures of the earth, earthquakes, volcanoes and igneous intrusions, metamorphism, mountains and plateaus, and ore-deposits.

Two lectures per week. First Term. Mr. Williams.

(b) *Laboratory Exercises in Physical Geology*, including the

study and identification of the commoner minerals and rocks, the interpretation of topographical and geological maps, and the study of structures by the use of models.

Field Work will replace laboratory occasionally, and will take the form of excursions to localities, in the immediate neighbourhood of Vancouver, which illustrate the subject matter of the lectures:

Two hours laboratory per week. First Term. Mr. Warren, Mr. Davis and assistants.

(c) *Historical Geology*, including the earth before the Cambrian, the Palaeozoic, the Mesozoic, the Cenozoic and Quaternary eras.

Two lectures per week. Second Term. Mr. Williams.

(d) *Laboratory Exercises in Historical Geology*, consisting of the study of fossils, their characteristics and associations, as illustrated by their occurrence in the strata.

Prerequisite: Matriculation Chemistry or Physics, or Chemistry 1 or Physics A or 1 taken either before or concurrently.

Text-book: Longwell, Knopf, Flint and Schuchert, *Dunbar Outlines of Geology*, Wiley, 1937.

Students will be required to make passing marks in the combined written and the combined practical divisions of the course, and may be required to pass in each of the laboratory divisions.

Two hours laboratory per week. Second Term. Mr. Williams and assistants.

2. (a) *General Mineralogy*.—A brief introduction to the field of mineralogy, with particular emphasis on the cultural aspect.

Lectures take the form of a concise treatment of (1) Elementary Crystallography, (2) Physical Mineralogy and (3) Descriptive Mineralogy of 50 of the more common mineral species, with special reference to the minerals which are of importance in present day Canadian and world economics.

Laboratory Work consists of a study of the more common crystal forms and of about 50 prescribed minerals, accompanied by a brief outline of the principles and methods of Determinative Mineralogy and Blowpipe Analysis.

Text-book: Dana, *Text-book of Mineralogy*, revised by Ford, Wiley, 4th Edition.

References: Brush and Penfield, *Determinative Mineralogy and Blowpipe Analysis*, Wiley, 16th Edition revised; Kraus, Hunt and Ramsell, *Mineralogy*, McGraw-Hill, 3rd Edition.

Prerequisites: Geology 1, Chemistry 1 and Physics A or 1 must precede or accompany this course.

Two lectures and two hours laboratory a week. First Term. Mr. Warren.

2. (b) *Descriptive and Determinative Mineralogy*.—This course supplements 2 (a) and consists of a more complete survey of Crystallography, Physical and Chemical Mineralogy, with a critical study of about 70 of the less common minerals, special emphasis being laid on their crystallography, origin, association, alteration and economic significance.

Text-book: Dana, *Text-book of Mineralogy*, revised by Ford, Wiley, 4th Edition.

References: Brush and Penfield, *Determinative Mineralogy and Blowpipe Analysis*, Wiley, 16th Edition revised; Kraus, Hunt and Ramsell, *Mineralogy*, McGraw-Hill, 3rd Edition.

Prerequisites: Geology 2 (a), Chemistry 1 and Physics A or 1 must precede or accompany this course.

Two lectures and two hours laboratory a week. Second Term. Mr. Warren.

3. *Petrology*.—An elementary course on the common rocks and the processes which formed them. Determinations are made largely on hand specimens, although the use of the microscope also is introduced for illustrative purposes.

Prerequisites: Geology 1 and 2.

Two lectures a week. Mr. Swanson.

Lectures: 11.30-12.30, Monday and Friday.

4. *Structural Geology*.—A study of primary and secondary structures in rocks, with emphasis on inter-relations and field determinations of observed structures. The course includes practice in graphical methods for solving various practical problems. In addition, it briefly surveys the use of geophysical methods in tracing concealed structures.

Prerequisite: Geology 1.

Text-book: Nevin, *Structural Geology*, John Wiley & Sons, 2nd Edition.

Three lectures a week. Mr. Swanson.

Lectures: 8.30-9.30, Monday, Wednesday and Friday.

5. *Regional Geology and History of the Geological Sciences*.—A brief study of the development of the geological sciences; studies of the salient features of the geology and economic minerals of Canada, and of the main geological features of the continental and oceanic segments of the crust of the earth.

Prerequisites: Geology 1 and 2.

References: Sir Archibald Geikie, *The Founders of Geology*; Merrill, *The First One Hundred Years of American Geology*; Young, *Geology and Economic Minerals of Canada*, Geological Survey of Canada, Economic Geology Series No. 1, 1926.

Four lectures per week. Mr. Williams, Mr. Schofield, Mr. Swanson, Mr. Davis.

Lectures: 3.30-5.30, Monday; 9-10, Tuesday and Thursday.

6. *Palaeontology*.—A study of invertebrate and vertebrate fossils, their classification, identification and distribution both geological and geographical.

Text-book: Twenhofel and Shrock, *Invertebrate Palaeontology*, McGraw-Hill.

Reference books: Grabau and Shimer, *North American Index Fossils*; Zitte-Eastman, *Text-book of Palaeontology*; Berry, *Palaeontology*.

Prerequisite: Geology 1.

Two lectures and two hours laboratory per week. Mr. Williams.

7. *Petrography*.—This course consists of systematic studies of (i) optical mineralogy, and (ii) petrography, with an introduction to petrogenesis.

The laboratory work deals with the determination of rocks under the microscope and in hand specimens.

Text-books: Tyrrell, *The Principles of Petrology*, Dutton; Rogers & Kerr, *Thin-Section Mineralogy*, McGraw-Hill.

Prerequisites: Geology 1 and 2.

Two lectures and four hours laboratory per week. Mr. Swanson.

8. *Economic Geology*.—A study of the occurrence, genesis, and structure of the principal metallic and non-metallic mineral deposits with type illustrations; and a description of the ore deposits of the British Empire, special stress being placed on those in Canada.

Text-book: Ries, *Economic Geology*, 7th Edition, Wiley, 1937.

Prerequisites: Geology 1 and 2, Geology 7 must precede or accompany this course.

Four lectures per week.

Mr. Williams, Mr. Schofield, Mr. Swanson, Mr. Warren.

9. *Mineralography*.—Principally a laboratory course dealing with the study and recognition of the opaque minerals by means of the reflecting microscope.

The work consists of practice in the cutting, grinding and polishing of ore specimens, accompanied by training in micro-chemical methods of mineral determination.

During the Second Term each student is assigned a suite of ores from some mining district for a critical examination and report.

Text-book: Davy and Farnham, *Microscopic Examination of the Ore Minerals*, McGraw-Hill.

Prerequisite: Geology 8 must precede or accompany this course.
Two to four hours per week by arrangement.

10. *Field Geology*.—The methods taught are the fundamental ones used by professional geologists and by the officers of the Geological Survey of Canada. This course is essentially practical and is designed to teach methods of observing, recording and correlating geological facts in the field. The students construct geological maps of selected areas in the vicinity of Vancouver which require the use of the various methods and instruments employed in field geology.

Text-books: Lahee, *Field Geology*; Hayes, *Handbook for Field Geologists*; Spurr, *Geology Applied to Mining*.

Prerequisite: Geology 1. Geology 4, if not already taken, must be taken concurrently.

One period of three hours per week. Mr. Schofield, Mr. Davis.

COURSES FOR GRADUATE STUDENTS

(To be arranged by consultation with the Instructors and Head of Department.)

20. *Sedimentation*.

Text-book: Twenhofel, *Treatise on Sedimentation*, Williams and Wilkins, 2nd Edition.

Prerequisites: Geology 1, 2, and 5.

One lecture or seminar and 6 hours of reading or laboratory per week. Mr. Williams.

21. *Problems in Palaeontology*.

Prerequisite: Geology 6.

One seminar and 6 hours laboratory per week. Mr. Williams.

23. *Advanced Mineralogy*.—A systematic study of some of the rarer minerals, the determination of some of the more important gem stones. An elementary study of crystal measurements may be undertaken.

Text-books: Dana, *Text Book of Mineralogy*, revised by Ford, 4th Edition, Wiley; Brush & Penfield, *Determinative Mineralogy and Blowpipe Analysis*, Wiley, 16th Edition, revised.

Prerequisites: Geology 2, 7, and 8.

One lecture or seminar and four or six hours laboratory work per week. Mr. Swanson, Mr. Warren.

24. *Advanced Mineralography*.—A critical study of some approved suite of ores, using the more recent methods of investigation, including the examination of polished sections under polarized light, microchemistry, microphotography, use of "super-polisher," etc.

Text-books: Frequent reference will be made to U. S. Geological Survey Bulletin 825, *Microscopic Determination of the Ore Minerals*.

Prerequisites: Geology 2, 7, 8, and 9; Ore Dressing 1 and 2; Metallurgy 5 and 6.

Occasional seminars and seven, nine, or eleven hours laboratory work a week. Mr. Warren.

25. *Petrogeny*.—A reading and lecture course, supplemented with occasional laboratory work, which deals with the origin of igneous and metamorphic rocks.

Prerequisite: Geology 7.

References: Harker, *Metamorphism*, Methuen & Co. Bowen, *Evolution of Igneous Rocks*, Princeton University Press.

Two lectures per week. Mr. Swanson.

Hours by arrangement.

Department of Mathematics

Professor: Daniel Buchanan.

Professor: F. S. Nowlan.

Professor: Ralph Hull.

Professor: L. Richardson.

Associate Professor: Walter H. Gage (on leave of absence).

Assistant Professor: F. J. Brand.

Instructor: May L. Barclay.

Lecturer: Jean Fisher Sargent.

2. *Trigonometry and Solid Geometry*.—Review of elementary trigonometry, inverse functions, hyperbolic functions, power series, complex numbers, De Moivre's theorem, elimination; a study of the three-faced corner, various polyhedra and solid figures, theorems of Pappus; introduction to Spherical Trigonometry.

Two lectures per week.

Text-book: Palmer & Leigh, *Plane and Spherical Trigonometry*, McGraw-Hill.

3. *Algebra*.—A review of simple series, permutations, combinations and the binomial theorem, and a study of exponential and other series, undetermined coefficients, partial and continued fractions, graphical algebra.

Two lectures per week.

Text-book: Brink, *Algebra, A College Course*, Appleton Century Co.

4. *Calculus*.—An introductory study of the differential and integral calculus will be made, and some of the simpler applications considered.

Text-book: Smith, Salkover and Justice, *Calculus*, John Wiley & Sons, New York, 1938.

Two lectures per week.

6. *Calculus*.—Differential and integral calculus with various applications.

Text-book: Smith, Salkover and Justice, *Calculus*, John Wiley & Sons, 1938.

Three lectures per week.

7. *Analytical Geometry*.—A study of the conics and other curves occurring in engineering practice, and elementary work in three dimensions.

Text-book: Fawdry, *Co-ordinate Geometry*, Bell.

Two lectures per week.

8. *Applied Calculus and Differential Equations*.—More advanced calculus including harmonic analysis, interpolation, Fourier series; ordinary differential equations, partial differential equations, met in physics and engineering.

Three hours per week.

Text-book: To be announced.

Department of Mechanical and Electrical Engineering

Professor: H. J. MacLeod.

Professor of Mechanical Engineering: F. W. Vernon.

Associate Professor of Electrical Engineering: S. C. Morgan.

Assistant Professor of Electrical Engineering: W. B. Coulthard.

Assistant Professor of Mechanical Engineering: John F. Bell.

Assistant Professor of Mechanical Engineering: W. O. Richmond.

Assistant Professor of Mechanical Engineering: H. M. McIlroy.

Assistant in Drawing: H. P. Archibald.

Mechanical Engineering

1. *Mechanical Drawing*.—Free hand lettering. Geometric figures. Orthographic projection. Dimensioning. Thread conventions. Technical sketching. Detail and assembly drawings of machine parts. Tracing and blueprinting.

Text-book: French, *Engineering Drawing*, McGraw-Hill.

One three-hour period per week.

Mr. McIlroy and Mr. Archibald.

2. (a) *Shop Work and Mechanical Drawing*.—Bench work, including marking off, chipping, filing, scraping, tapping, and fitting; lathe work, including turning and boring, screw-cutting and finishing; lathe adjustments; shaping; milling, gear-butting; tool-dressing.

Continuation of M.E.1 Isometric and oblique projection. More advanced working drawings. Checking a drawing.

Four hours a day for 20 days or its equivalent for each subject.

2. (b) *Machine Shop Practice*.—A continuation of Mechanical Engineering 2a.

Two hours per week.

3. *Kinematics of Machines*.—Velocity and Acceleration diagrams of mechanisms. Instantaneous centre of Rotation. Slider Crank and Quadric-crank chain; quick return mechanisms; inversion; straight-line motions; epi-cyclic trains; valve-gears and miscellaneous mechanisms.

Reference book: McKay, *Theory of Machines*, Longmans, Green & Co.

Three lectures and one two-hour drawing office period per week. First Term. Mr. Vernon.

4. *Dynamics of Machines*.—Diagrams of crank effort, piston velocity and acceleration; flywheel; balancing, rotating and reciprocating masses; secondary balancing; governors; brakes and dynamometers; belt-drives; dynamics of the gyroscope; friction and friction-clutches; impulsive forces in mechanisms.

Text-book: Low, *Applied Mechanics*, Longmans, Green & Co.

Two lectures per week. Mr. Vernon.

5. *Machine Design*.—A study is made of the design of machines and machine parts. Emphasis is placed on the selection of proper materials and the rational design of standard machine parts for strength, giving proper consideration to rigidity, safety and economical operation.

Text-books: Norman, Ault and Zarobsky, *Fundamentals of Machine Design*, Macmillan; Mark's, *Mechanical Engineers' Handbook*, McGraw-Hill.

Three lectures and one two-hour drawing office period per week.

Mr. Richmond.

6. *Applied Thermodynamics*.—A practical course for students not specializing in Mechanical or Electrical Engineering. Fuels and combustion. General principles underlying the construction and operation of steam boilers. Theory of the steam engine. Measurement of power. Performance of various types of steam engines. Theory of internal combustion engines. Design and operation of isolated power plants to give the best economic results. Theory of air compressors, transmission and use of compressed air. Theory and practical operation of producer gas plants.

Text-book: Allen & Bursley, *Heat Engines*, McGraw-Hill.

Two lectures and one three-hour laboratory period per week.

Mr. McIlroy, Mr. Bell.

7. *Applied Thermodynamics*.—A study of the thermodynamic theory, construction and performance of reciprocating steam engines, refrigerating machines, air compressors and internal combustion engines.

Text-book: Robinson, *Applied Thermodynamics*, Pitman.

Three lectures and one three-hour laboratory period per week.

Mr. Richmond, Mr. Bell.

8. *Steam Turbines*.—A more advanced course in the thermodynamic theory, design and performance of steam turbines, both marine and stationary.

Reference books: Goudie, *Steam Turbines*, Longmans Green; Stodola, *Steam and Gas Turbines*, McGraw-Hill; Moyer, *Steam Turbines*, Wiley.

Two lectures per week. Second Term. Mr. Vernon.

9. *Internal Combustion Engines*.—A more advanced course in the thermodynamic theory, design and performance of petrol, gas and oil engines.

Reference books: Wimperis, *Internal Combustion Engines*, Constable; Bird, *Oil Engines*.

One lecture per week. First Term. Mr. Vernon.

10. *Refrigeration*.—A course in the thermodynamic theory, design and performance of refrigerating machines as used for commercial and domestic purposes.

Reference books: Ewing, *Mechanical Production of Cold*, Cambridge; Moyer and Fittz, *Refrigeration*, McGraw-Hill.

One lecture per week. First Term. Mr. Vernon.

8, 9, 10. *Laboratory*.—The work carried out embodies the operation and testing of the laboratory machines, illustrating the theory

covered in the lectures. Weekly written reports are required on the tests carried out.

One four-hour period per week. Mr. Vernon, Mr. Bell.

11. *Heating, Ventilating and Air Conditioning*.—Design of steam, hot water and hot air systems of heating. Heaters for steam and water systems. Use of exhaust steam for heating. Central heating plants. Loss of heat from buildings.

Reference book: Harding & Willard, *Mechanical Equipment of Buildings* (Vols. I. and II.), Wiley.

Two lectures per week. First Term. Mr. Bell.

12. *Design of Steam Power Plants*.—A study of the function, construction and performance of the various units that comprise a modern steam power plant; i.e. boilers, grates, chimneys, pumps, feed-water heaters, economisers, condensers, steam piping and valves, fuel and ash-handling equipment. Calculations regarding capacity, efficiency and operating cost of the various types of these units. Inspection trips to a number of local plants.

Reference book: Gebhardt, *Steam Power Plant Engineering*, John Wiley & Sons.

One hour lecture and one three-hour laboratory period per week. Mr. Mellroy.

13. *Physical Treatment of Metals*.—A study of the various metals used in commercial work, with special reference to the treatment applied to get the physical properties and qualities required for specific purposes.

Reference books: Colvin and Juthe, *The Working of Steel*, McGraw-Hill; Bullen, *Steel and Its Heat Treatment*, Wiley; Dalby, *Strength and Structure of Steel and Other Metals*, Arnold.

One lecture and one two-hour laboratory period per week. Mr. Bell.

14. *Mechanical Design of Electrical Machinery*.—A course dealing with the various mechanical problems arising in the design and construction of electrical machinery. The subjects treated include the design of transmission lines and supports; the design of shafts and bearings for high-speed rotating machinery; vibrations and balancing. For Fifth Year electrical students.

Two lectures per week. First Term. Mr. Richmond.

15. *Prime Movers*.—Theory and design of all types of hydro-electric machinery from the mechanical standpoint.

Reference book: Gibson, *Hydro-Electric Engineering*, Vol. I., Blackie.

Two lectures per week. Mr. Vernon.

16. *Machine Design*.—The design of machine and structural parts, including parts of engines of all types; design of wheel teeth, belt, rope, and chain gearing, flywheels, cams, clutches, couplings, machine frames, etc.

Text-book: Spooner, *Machine Design*, Longmans.

Two lectures and one four-hour drawing office period per week. Mr. Vernon.

17. *Applied Mechanics*.—An advanced course in the theories of bending of beams, critical loading of struts, bending stresses in curved bars, stresses in rotating discs and in rotating cylinders, bending of thin plates, and harmonic vibrations.

Reference books: Timoshenko, *Strength of Materials*, Van Nostrand; Timoshenko and Lessels, *Applied Elasticity*, Westinghouse; Low, *Applied Mechanics*, Longmans, Green & Co.

One lecture per week. Mr. Richmond.

18. *Aeronautics*.—General theory of flight; aerofoils, lift, drag, distribution of pressure, aspect ratio, effect of variation of camber; stream lines, airscrews, performance curves; general principles of design and methods of construction; theory of stability.

Text-book: Warner, *Aeronautics*, McGraw-Hill.

Two lectures per week. Second Term. Mr. Vernon.

19. *Problems in Mechanical and Electrical Engineering*.—The solution under supervision of problems arising from the lecture courses.

One two-hour period per week. Mr. Morgan, Mr. Richmond.

Electrical Engineering

1. *Theory and Operation of Electrical Machines*.—A practical course for students not specializing in Electrical or Mechanical Engineering, designed to introduce to the student the principal factors in electrical machinery. Enough theory is given to explain fully the characteristics of the apparatus studied. Both D.C. and A.C. apparatus is dealt with.

Text-book: Gray and Wallace, *Principles and Practice of Electrical Engineering*, McGraw-Hill.

Prerequisite: Physics 5.

Two lectures and one two-hour laboratory period per week.

Mr. Morgan.

2. *Principles of D.C. Machines*.—Elementary electro-magnetic theory. Theory and use of direct current generators and motors. Direct current transmission. Secondary batteries, illumination, etc.

Text-books: Langsdorf, *Principles of Direct Current Machines*, McGraw-Hill; *Junior Laboratory Manual*.

Reference book: Morecroft and Hehre, *Electrical Circuits and Machinery*, Vol. I., John Wiley & Sons.

For Fourth Year Electrical and Mechanical students only.

Prerequisites: Physics 5.

First Term: Four lectures and one three-hour laboratory period per week.

Second Term: Two lectures per week.

One lecture period per week is devoted to problem work each term. Mr. Morgan, Mr. MacLeod.

3. *Principles of Alternating Currents*.—A thorough treatment of alternating current theory and calculations, with an introduction to the principles of the chief alternating current machines.

Text-book: Kerchner & Corcoran, *Alternating Current Circuits*, J. Wiley & Sons.

Reference: Morecroft and Hehre, *Electrical Circuits and Machinery*, Vol. II., John Wiley & Sons. Junior Lab. Manual.

For Fourth Year Electrical and Mechanical students only.

Prerequisite: Physics 5.

Second Term: Two lectures and one three-hour laboratory period per week. Mr. Morgan.

5. *Electrical and Magnetic Measurements and Instruments*.—A study of the units and quantities of magnetism and electricity, developing therefrom a detailed treatment of measurements and measuring instruments of all kinds, in theory and practice.

Brief Summary: Absolute instruments, secondary instruments; measurements of current, resistance, potential difference and power; measurement of inductance and capacity; watt-hour meters, recording instruments, phase, power-factor, and frequency measurements; instrument transformers; determination of wave form; calibration of instruments, etc.

Text-book: Vigereux & Webb, *Electrical Measurements*, Prentice Hall Co.

Reference book: Drysdale and Jolly, *Electrical Measuring Instruments*, London: E. Benn, Ltd.

For Fourth Year Electrical students only.

Prerequisite: Physics 5.

Two lectures per week. Mr. Coulthard.

7. *Design of Electrical Machinery*.—The design of direct and alternating current motors and generators and of constant potential

transformers, with special reference to the theory and limits of design. Design problems in radio circuits and transmission systems.

Text-book: Kuhlmann, *Design of Electrical Apparatus*, John Wiley & Sons.

Reference book: Still, *Elements of Electrical Design*, McGraw-Hill.

One lecture and one three-hour laboratory period per week.

Mr. MacLeod.

8. *Principles of Illuminating Engineering*.—Radiation; luminous flux; light sources; photometric units and measurements; vision and the elements of lighting design.

A number of experiments on Illumination are included in the laboratory course under E.E. 11.

Text-book: Moon, *Scientific Basis of Illuminating Engineering*, McGraw-Hill.

Two lectures per week. First Term. Mr. Morgan.

9. *Transmission and Distribution of Electrical Energy*.—Electrical principles and calculations for short and long lines; sag and stress calculations; insulation; corona; lightning arresters; voltage control; the electrical layout of power plants, substations and distribution systems; short circuit calculations, relays and protective apparatus; stability; theory of rates.

Text-books: Woodruff, *Electric Power, Transmission and Distribution*, John Wiley & Sons; Sanderson, *Electric System Handbook*, McGraw-Hill.

Reference Books: Still, *Electric Power Transmission*, McGraw-Hill; Lovell, *Generating Stations*, McGraw-Hill.

Two lectures per week each term. Mr. MacLeod.

10. *Electrical Problem Course*.—Problems on A.C. machinery.

Two hours per week each term. Mr. Coulthard.

11. *Electrical Communication*.—Resonant and coupled circuits; properties of coils and condensers; the theory and application of vacuum tubes as amplifiers, oscillators, modulators and detectors; radio circuits; the electrical characteristics of telephone lines; filters; antennae and wave propagation.

Text-book: Everitt, *Communication Engineering*, McGraw-Hill.

Reference book: Glasgow, *Principles of Radio Engineering*, McGraw-Hill; Norris and Bingham, *Electrical Characteristics of Power and Telephone Transmission Lines*, International Text-book Co.

Two lectures and one laboratory period of three hours per week.
Mr. MacLeod.

12. *Principles of Alternating Current Machines*.—A detailed analysis of the theory and characteristics of alternating current machinery, including the transformer, the alternator, the synchronous motor, the induction motor, the rotary converter and the commutator motor.

Text-books: Langsdorf, *Theory of Alternating Current Machinery*, McGraw-Hill; H. Vickers, *The Induction Motor*, Sir Isaac Pitman & Sons; *Senior Laboratory Manual*.

Reference book: Morecroft and Hehre, *Electrical Circuits and Machinery*, Vol. II., John Wiley & Sons.

Three lectures per week. One laboratory period of four hours.
Mr. Coulthard.

13. *Transient Phenomena and Oscillations*.—In this course will be considered the transient phenomena which occur in switching electric circuits, long transmission lines; standing and travelling waves; the penetration of current and flux into magnetic materials at high frequency; the effective resistance, inductance and capacity of high frequency circuits; abnormal voltage rises in A.C. circuits; transients in radio circuits; waves and impulses, etc.

Text-book: Berg, *Heaviside's Operational Calculus*, McGraw-Hill.

Reference book: Steinmetz, *Transient Phenomena*, McGraw-Hill.

One lecture per week. Mr. Coulthard.

14. *Alternating Current Machinery*.—The theory and characteristics of alternating current machines. For mechanical students.

Text-book: Puchstein and Lloyd, *Alternating Current Machines*, John Wiley & Sons; *Senior Laboratory Manual*.

Two lectures and one laboratory period of four hours per week.
Mr. Morgan.

GRADUATE COURSE

101. *Principles of Electrical Communications*.—A comprehensive study of the theory of electrical communication systems and its application.

Reference books: Everitt, *Communication Engineering*, McGraw-Hill; Terman, *Radio Engineering*, McGraw-Hill; Johnson, *Transmission Circuits for Telephonic Communication*, Van Nostrand; Olsen and Massa, *Applied Acoustics*, Blakiston's; Terman, *Measurements in Radio Engineering*, McGraw-Hill. Current Journals.

Department of Mining and Metallurgy

Professor of Mining: J. M. Turnbull.

Professor of Metallurgy: Geo. A. Gillies.

Assistant Professor of Metallurgy: Frank A. Forward.

Instructor in Metallurgy: W. B. Bishop.

Mining

1. *Metal Mining*.—An introductory course in metal mining, including the following subjects:

Ores and economic minerals; economic basis of mining; ordinary prospecting; mineral belts; conditions in British Columbia; preliminary development of mines; timbering and framing; tunnelling; shaft sinking; transportation and haulage; drainage; ventilation.

Three lectures per week. Mr. Turnbull.

2. *Coal and Placer Mining*.—A general course in coal and placer mining, including the following subjects:

(a) Classification of coals; prospecting; mine development; mining methods; ventilation; transportation and haulage; drainage; tipples; coal mines acts and laws.

(b) Gravel deposits; nature and origin of paystreaks; prospecting; examination and testing of deposits; ordinary mining methods; hydraulic and dredging methods; plant and equipment; placer mines acts and laws.

Two lectures per week. Mr. Turnbull.

3. *Metal Mining*.—An advanced course in metal mining, including the following subjects:

Scientific prospecting; geophysical methods; development work in mines; blasting and explosives; examination of mines and prospects; methods of ore sampling; mine valuation; accounting and costs; administration; welfare and safety work; mining laws and contracts; economics; ethics.

Prerequisite: Mining 1.

Two lectures per week. Mr. Turnbull.

4. *Mining Machinery*.—A special course dealing with the structural and mechanical features of Mining Engineering, as follows:

Mine structures; mining plant and machinery; core and churn drills; tramways, etc.

Prerequisites: Mining 1; Mechanical Engineering 3, 6; Civil Engineering 3 and 10.

Two lectures per week. Mr. Gillies.

5. *Mine Surveying*.—A practical course describing the work of the surveyor and staff in metal mines.

Methods and practice in mine surveying; geological work underground; maps; plans and models; notes and records.

Prerequisites: Civil Engineering 2 and 6.

One lecture per week. First Term. Mr. Turnbull.

7. *Mining Methods*.—A special course dealing with the principles and practice of mining methods in metal mines.

Prerequisite: Mining 1.

Concurrent Courses: Mining 2, 3, and 4.

One lecture per week. Second Term. Mr. Turnbull.

Metallurgy

1. *General Metallurgy*.—This course covers the fundamental principles underlying metallurgical operations in general, and is introductory to subsequent more specialized study.

Structure and physical properties of metals; alloys; equilibrium diagrams; fuels; refractories; combustion; typical hydro-pyro-electro-metallurgical operations.

Text-book: Newton, *An Introduction to Metallurgy*, Wiley.

Reference books: Hofman, *General Metallurgy*, McGraw-Hill; Liddell, *Handbook of Non-ferrous Metallurgy*, McGraw-Hill; Fulton, *Principles of Metallurgy*, McGraw-Hill.

Prerequisites: Chemistry 1 and Physics A and 1.

Two lectures per week. Mr. Forward.

2. *Smelting and Leaching*.—A general course covering principles and practice of Pyrometallurgy and Hydrometallurgy as applied to gold, silver, copper, iron, lead, and zinc.

Prerequisite: Metallurgy 1.

Two lectures per week. Mr. Bishop.

3. *Metallurgy Calculations*.—A special course covering principles and practice of various metallurgical operations, emphasizing Metallurgical Calculations and special branches of Metallurgy.

Reference books: Richards, *Metallurgical Calculations*; Liddell, *Handbook of Non-ferrous Metallurgy*, McGraw-Hill; Schnabel and Louis, *Handbook of Metallurgy*, Van Nostrand.

Prerequisites: Metallurgy 1, Chemistry 1.

Two lectures per week. Mr. Forward.

4. *Metallurgical Analysis*.—Advanced course in Metallurgical Analysis of Ores and Furnace Products.

Special attention will be given to analytical methods used in non-ferrous metallurgical plants.

Reference book: Scott, *Chemical Methods for the Analysis of Metallurgical Products*, Van Nostrand.

Prerequisites: Metallurgy 1, Metallurgy 6.

Nine hours laboratory per week. Mr. Forward.

5. *Fire Assaying*.—Quantitative determination of gold, silver and other metals by fire assaying methods, with underlying principles.

Text-book: Bugbee, *Fire Assaying*, Wiley.

One lecture and one five-hour laboratory period per week. First Term. Mr. Bishop, Mr. Forward.

6. *Wet Assaying*.—An introductory course in metallurgical analysis of ores and concentrates, including some fire assaying.

Most of the time will be given to the technical determination of zinc, copper, and lead.

One three-hour laboratory period per week. Mr. Bishop, Mr. Forward.

7. *Metal Statistics and Plant Management*.—A study of the statistics of production and marketing of non-ferrous metals, and of the fundamentals of metallurgical plant management.

Reference books: Spurr and Wormser, *Marketing of Metals and Minerals*; Leith, *World Minerals and World Politics*; American Inst. of Mining and Metallurgy, *Mineral Economics*; *Year Book* of the American Bureau of Metal Statistics; Current Technical Literature.

One lecture per week. Mr. Forward.

8. *Metallurgical Laboratory*.—Experimental laboratory work, covering some of the principles of non-ferrous metallurgy, including pyrometry, roasting, cyanidation, electrolytic refining, etc.

Three hours laboratory per week. Mr. Forward.

Ore Dressing

1. *Ore Dressing*.—A general course covering the concentration of ores by mechanical means.

Most of the time is spent in considering fundamental principles, typical machines, and their general operations and relations in modern milling practice, emphasizing the economic and practical aspects.

Students are taught the commercial and technical characteristics of true concentrating ores, the general principles on which the

size, character, site, and other features of a mill are designed. The general layout of crushing, handling, and separating machinery. The laws of crushing and of various classifying and separating actions, and the design, operation and comparative efficiency of typical machines, such as crushers, rolls, stamps, ball and tube mills, jigs, tables, screens, classifiers, and slime handling devices.

Attention is paid to pneumatic, magnetic, electrostatic, flotation and other special processes, including coal-washing.

Reference books: F. Taggart, *A Manual of Flotation Processes*, Wiley; A. M. Gaudin, *Flotation*, McGraw-Hill; S. J. Truscott, *Text-book of Ore Dressing*; Richards and Locke, *Text-book of Ore Dressing*; A. F. Taggart, *Handbook of Ore Dressing*, Wiley.

Two lectures per week for one year. Mr. Gillies.

2. *Ore Dressing Laboratory*.—A variety of crushing, sizing, classifying and separating operations are carried out by the students and studied quantitatively on appropriate machines, singly and in combination. Special attention is paid to flotation processes, several types of machines being used.

Ores from British Columbia mines are usually chosen, so that the work of the students is along practical lines in comparison with actual work in operating plants.

Prerequisite: Ore Dressing 1.

Nine hours laboratory per week. Mr. Gillies.

GRADUATE COURSE

101. *Ore Dressing*.—An advanced course in ore dressing for graduate students, including theory and laboratory work of a research character.

Prerequisites: Metallurgy 1, 5, and 6; Ore Dressing 1 and 2.

Concurrent Courses: Chemistry 3, and either Chemistry 4 or Chemistry 7.

Eighteen hours per week. Mr. Gillies.

NOTE.—All students in Mining and Metallurgy are advised to provide themselves with a copy of Peele's *Mining Engineer's Handbook* (Wiley), which is used for reference in many of the courses in which no special text-book is required.

Department of Physics

Professor: G. M. Shrum.

Professor: A. E. Hennings.

Assistant Professor: Oscar E. Anderson.

Assistant Professor: A. M. Crooker.

Assistant Professor: Harold D. Smith.

Assistant Professor: Kenneth C. Mann.

The instruction includes lectures on the general principles of Physics, accompanied by courses of practical work in the laboratory.

A. *Introduction to Physics*.—See Physics A, Arts and Science, Page 145.

1. *Elementary Physics*.—See Physics 1, Arts and Science, Page 145.

4. (a) *Mechanics*.—An elementary treatment of the subject of statics, dynamics and hydrostatics, with particular emphasis on the working of problems. The course is given in the first half of the Second Year of Applied Science.

Text-book: Reynolds, *Elementary Mechanics*, Prentice-Hall.

Prerequisite: Physics 1.

Three lectures and one three-hour laboratory period per week.

4. (b) *Heat*.—This course is begun when Physics 4a is finished. It is assumed that the student is already familiar with the elementary principles of heat.

Text-book: Edser, *Heat for Advanced Students*, Revised Edition, 1936, Macmillan.

Three lectures and one three-hour laboratory period per week.

5. *Electricity and Magnetism*.—A quantitative study of fundamental principles of electricity and magnetism, with special reference to the fact that the student is to be an engineer.

The course includes a short treatment of the elements of alternating currents.

Text-book: Zeleny, *Elements of Electricity*, McGraw-Hill.

Two lectures and one three-hour laboratory period per week.

10. *Light*.—A short lecture course for engineering students. A study of optical instruments, light sources and filters, spectroscopy, photometry, energy measurements, refractometers, interference, diffraction and polarized light.

Text-book: Robertson, *Introduction to Physical Optics*, Van Nostrand.

One lecture per week.

12. *Introduction to Atomic Structure*.—See Physics 12, as in Arts and Science, Page 168.

Department of Nursing and Health

Acting Head of the Department: C. E. Dolman.

Assistant Professor: Mabel F. Gray.

Instructor: Margaret E. Kerr.

Instructor: Fyvie Young (under the Rockefeller Foundation Grant).

Part-time Lecturers:

Dr. S. J. Kitching.

Miss Anne Cavers, R.N., Cert. School for Graduate Nurses (McGill).

Miss Zella Collins, Diploma, Social Service Department (Toronto).

Arthur L. Crease, M.D., C.M. (McGill).

Miss Frances M. Fraser, Social Service Diploma (Brit. Col.).

J. S. Kitching, B.A., M.D., D.P.H. (Toronto).

Miss Mary McPhedran, Diploma, Social Service Department (Toronto).

Alfred Howard Spohn, M.B. (Toronto).

Florence M. Walker, R.N., B.A., B.A.Sc. (Brit. Col.).

Honorary Lecturers:

W. H. Hatfield, M.B. (Toronto).

S. Stewart Murray, M.D., D.P.H. (Toronto).

Donald H. Williams, B.Sc., M.D. (Manitoba), M.S. (Minnesota).

Henry Esson Young, B.A. (Queen's), M.D., C.M. (McGill), LL.D. (Toronto), LL.D. (McGill), LL.D. (British Columbia), L.M.C.C.

Nursing A

(Combined Undergraduate Course and Double Course)

1. *History of Nursing*.—A series of lectures dealing with the origin and history of nursing.

One hour a week. Second Year. Both Terms. Miss Gray.

4. *Elementary Biochemistry*, as applied to Physiology.

One lecture and one laboratory period per week. Second Year. Second Term. Dr. Allardyce.

5. *Bacteriology in Relation to Health and Disease (Bacteriology 3)*.—A special course in Bacteriology devised to meet the needs of Nursing students.

One lecture and two laboratory periods per week. Second Year. Both Terms. Mr. Horn.

Nursing B and C

1. *Preventive Medicine*.—A study of preventive medicine, including consideration of the etiology, epidemiology and control of communicable diseases. Biological products and their uses; demonstration of active immunization procedures.

Three hours per week. Both Terms. Dr. Dolman, Dr. Brandon, and special lecturers.

9. *Sanitation*.—A study of legislative measures and organization to ensure safety of water, and of milk and other foods. Housing, sewage and garbage disposal.

One hour per week. First Term. Dr. Kitching.

12. *Vital Statistics*.—The general principles governing the collection, arrangement, presentation, and interpretation of vital statistics. Health publicity and the preparation of health exhibits.

Two hours per week. Second Term. Miss Young.

5. *Mental Hygiene*.—An introduction to the study of mental illness, with emphasis upon its prevention. Child guidance clinics and the psychiatric social history.

One hour per week. Both Terms. Dr. Crease, and special lecturers.

7. (a) *Infant Welfare*.—A study of the normal development of the infant. Pre-natal care, and the prevention and management of the more common disorders of infancy.

One hour per week. First Term. Dr. Spohn.

7. (b) *Child Hygiene*.—A study of the child, with emphasis upon its nutritional needs and its psychological development.

One hour per week. One Term. Miss Kerr.

11. *Public Health Organization*.—A short series of lectures dealing with the organization and administration of official health services.

Dr. Young, Dr. Murray.

13. (a) *Principles of Public Health Nursing*.—A study of the development of public health nursing, including problems of organization and administration.

Text-book: Gardner, *Public Health Nursing*, Macmillan, 1936.

Two hours per week. Both Terms. Miss Kerr.

13. (b) *Practice of Public Health Nursing*.—A study of the duties and techniques in the special branches of public health nursing.

One hour per week. Both Terms. Miss Young.

16. *Methods in Health Teaching*.—Health Education, its purpose and content. The application of the principles of teaching to health instruction as carried out in the home, the school, and the community. (For students requiring it, extra periods will be arranged for instruction in voice production).

Two hours per week. Both Terms. Miss Kerr.

17. *Contemporary Nursing Problems*.—Consideration of recent developments in the nursing field.

One lecture per week. Both Terms. Miss Gray.

18. (a) *Teaching in Schools of Nursing*.—A study of the curricula of schools of nursing; the content and arrangement of courses of study, and the application of teaching principles to the subjects found in the nursing curriculum. A study of nursing school records.

Two hours per week. Both Terms. Miss Gray.

18. (b) *Practice Teaching in Nursing*.—This course is supplementary to the above.

Two hours per week. Second Term. Miss Cavers, Miss Walker.

19. *Principles of Supervision in Schools of Nursing*.—A study of the organization of the school of nursing, with especial reference to the function of a ward or teaching unit. A discussion of experience records, case studies, ward clinics and other means which assist in the correlation of theory and practice.

Two hours per week. Both Terms. Miss Gray.

31. *Principles and Methods of Teaching*.

Two hours per week. First Term. Mr. Black.

21. *Social Case Work*.—An introductory course dealing with some of the more common forms of social maladjustment,—the causes, and the community resources available in seeking a solution of the different problems. The general principles underlying social case work will be studied and the inter-relationships of nursing and allied welfare agencies will be discussed.

Two hours per week. Second Term. Miss Collins, Miss Fraser, Miss McPhedran, and special lecturers.

27. *Sociology*.—The Family. An approach to the study of society by way of a basic institution.

Text-book: Nimkoff, *The Family*, Houghton-Mifflin, 1934.

Two hours per week. First Term. Dr. Topping.

35. *Seminar*.—Written and oral presentation and discussion of report upon assigned problems or topics within the scope of nursing education or public health.

Three periods per week. Second Term.

Department of Zoology

Professor: C. McLean Fraser.

Associate Professor: G. J. Spencer.

Assistant Professor: Gertrude M. Watney.

NOTE:—Biology 1 is prerequisite to all courses in Zoology.

1. *General Morphology*.—General morphology of animals. Comparative anatomy. The relationships of animal groups. Comparative life-histories.

Text-book: T. J. Parker and W. A. Haswell, *Manual of Zoology*, Macmillan.

This course is prerequisite to other courses in Zoology.

Two lectures and two hours laboratory per week.

7. *Economic Entomology* (in part).—The portion of the course in Economic Entomology that deals with forest insects.

One lecture and two hours laboratory work per week for half of Second Term.

THE
FACULTY
OF
AGRICULTURE

1939-40

FACULTY OF AGRICULTURE

INFORMATION FOR STUDENTS IN AGRICULTURE

The primary object of a University education is to develop in men and women the power of logical, exact and independent thinking. The teaching of the Science of Agriculture has an additional aim—*viz.*, giving to the student an understanding of the principles of life, both plant and animal, and knowledge of the application of these principles to Agriculture and allied industries.

The particular course of study* selected by any student is determined by his previous training and by the use he intends to make of his University work, whether for farming, district agricultural work, teaching, research, or other vocation.

The first two years of work leading to the degree in Agriculture are devoted largely to acquiring a knowledge of the basic sciences, in adding to the student's knowledge of language and in laying a foundation for more advanced studies in the practical and scientific phases of Agriculture and of allied subjects.

During the first two years, the student who is not yet clear as to what special phase of Agriculture he may care to follow is given an opportunity of becoming acquainted with the general field of Agriculture and of its various branches, through the medium of an Orientation Course (Agriculture 1 and 2), which includes a survey of the History and Development of Agriculture. This introductory course is given by the applied departments.

During the last two years of the course the student is permitted, in consultation with the Dean, the Advisory Committee on Courses, and the Head of the Department, to select from a wide list of subjects either a generalized course in Agriculture or a specialized course in some one phase of Agriculture, as in Agronomy, Animal Husbandry, Dairying, Horticulture, Poultry Husbandry, Agricultural Economics; or a still further specialized course within these or closely allied fields, such as in Soils, Animal or Plant Nutrition, Animal or Plant Pathology, Applied Genetics, Bacteriology, Entomology, Physiology and similar fields of study.

The extent of the course, whether for a few weeks or for several years, and the nature of the course, whether generalized or specialized, scientific or practical, is to be decided by each individual on the advice of the Dean, the Advisory Committee on Courses, and a Department Head.

*The curriculum described in the following pages may be changed from time to time as deemed advisable by the Senate.

In advising on the selection of courses or vocation, the student's personal preference and his adaptability are given careful consideration.

For those interested in continuing their University training beyond the work of the four years leading to the Bachelor's degree, excellent opportunity is afforded in many of the fields mentioned above for further work leading to the Master's degree.

A judicious selection of courses permits of the completion of the required work for both the B.S.A. and the B.A. degrees in five years.

(For further information regarding the various courses, see statements which follow the "Outline of Courses"; also description of courses as listed under the separate Departments.)

Admission, Registration, Etc.

For statement as to general requirements for admission, registration, etc., to the University, see Pages 33-35.

Degrees

The degrees offered in this Faculty are:

Bachelor of Science in Agriculture (B.S.A.).

Master of Science in Agriculture (M.S.A.).

Courses of Study

Five distinct lines of study are offered, as follows:

- (1) Four-year courses leading to the degree of Bachelor of Science in Agriculture (B.S.A.).
- (2) A One-year Occupational Course leading to a Diploma in Agriculture.
- (3) A Winter Course at the University, consisting of a Short Course in one or more of the agricultural subjects: Poultry, Horticulture, etc.
- (4) Extension Courses at different points in the Province.
- (5) Graduate work in agriculture leading to the degree of Master of Science in Agriculture (M.S.A.).

Courses Leading to the Degree of B.S.A.

These courses are planned for students who wish to obtain practical and scientific knowledge of agriculture, or closely allied subjects, either as a basis for demonstration, teaching or research, or as an aid to successful farming.

Students are required to have Junior Matriculation or its equivalent before entering upon these courses (see "Matriculation Requirements").

The Occupational Course

The Occupational Course is planned for those students whose academic qualifications may not be high, but whose practical qualifications are satisfactory. The course permits of work in Agronomy, Animal Husbandry, Poultry Husbandry, Dairying, Horticulture, Farm Management and Marketing on the part of those who wish to extend their practical knowledge. A successful completion of the course leads to a Diploma in Agriculture. Matriculation standing for entrance is not required.

Short Courses

The Short Courses are planned for those men and women who are unable to take advantage of the longer courses, but who desire to extend their knowledge of agriculture in one or more of those branches in which they are particularly interested. The work throughout is intensely practical. Illustrative material and periods devoted to demonstration and judging work are features of the course. No entrance examination is required, nor are students asked to write an examination at the conclusion of the course.

Special announcements giving details of the various divisions of the course are issued in December of each year, and may be obtained from the Registrar on application.

Extension Courses

In order to reach those engaged in Agriculture who are not able to avail themselves of the Winter Courses given at the University, the Faculty of Agriculture offers extension short courses in various centres throughout the Province. These courses are of at least four days' duration, are proceeded with according to a definite timetable, and include lectures and demonstrations in connection with the work of each department of the Faculty. Detailed programmes are prepared to suit the specific centres, and requests for such courses may be addressed to the Director of Adult Education.

Graduate Work

For regulations, see Pages 257, 258.

Curriculum

Courses are described in terms of units. A unit normally consists of one lecture hour (or one continuous laboratory period of not less than two or more than three hours) per week throughout the session, or two lecture hours (or equivalent laboratory periods) throughout a single term.

Outline of Courses

At the beginning of the Fall Term all students are required to submit to the Dean for approval an outline of courses to be taken during the year.

The following constitutes the minimum requirements of agricultural subjects to be taken by a student in Departments other than the one in which he is writing his undergraduate essay: Agriculture 1 and 2, and nine units of courses to be chosen in not less than two of the five Departments: Agronomy, Animal Husbandry, Dairying, Horticulture and Poultry Husbandry.

FIRST YEAR

Agriculture 1, Biology 1, Chemistry 1, English 1, Mathematics 1.

To assist students who contemplate proceeding to the Normal School after taking one year of the course in Agriculture, a first year course in the language taken on Junior Matriculation may be substituted for either Chemistry 1 or Biology 1; but any such student who later registers for a second year in the Faculty of Agriculture must complete the regular course of studies for the first year.

SECOND YEAR

English 2 or English 3 and 4 (3 units), Agriculture 2 (not offered in 1939-40).

Three units to be elected in Agronomy, Animal Husbandry, Dairying, Horticulture or Poultry Husbandry in lieu of Agriculture 2 for 1939-40.

ELECTIVES

A
Chemistry 2
Biology 2a and 2b
Bacteriology 1
Zoology 1
Geology 1
Physics 1 or 2
Botany 1
Mathematics 2 or 3

B
Economics 1
Psychology 1
Beg. German
Matr. Language 1
Matr. Language 2
History 1

In all a minimum of 15 units, including at least six units from Electives A.

Agriculture 1 and 2 may be taken concurrently by students entering with Senior Matriculation.

Subject to the approval of the Dean and the Advisory Committee on Courses, other subjects from the Faculty of Arts and Science, or from the Faculty of Applied Science, may be accepted

for credit in the Faculty of Agriculture, also, but for First Year only, from Senior Matriculation; further, any two of the elective subjects in the Second Year not taken in that year, subject to approval, may be taken in the Third Year. A student may take in his Fourth Year an elective of the Second Year subject to the approval of the Faculty.

THIRD AND FOURTH YEARS

Prior to registration, and preferably before the close of the Second Year, all students are required to discuss with the Dean and the Head of a Department all courses which they intend to take.

There are no specific subjects which must be taken by all students; students are required, however, to elect up to a total of 36 units, essay included, in the Third and Fourth Years.

A student's standing at graduation shall be determined by averaging the grades obtained in the best 36 units of required work taken in the Third and Fourth Years.

An essay shall be prepared by each student on some topic, the subject of which shall be selected, with the approval of the Heads of the Departments concerned, before the end of the Third Year's work.

Two typewritten copies of each essay on standard-size paper ($8\frac{1}{2} \times 11$ in.) shall be submitted not later than the last day of lectures in the Spring Term of the graduating year. The corresponding date for the Autumn Congregation shall be October 1st.

The particular course or courses to be taken by any student must be approved by the Dean and a Head of a Department.

Courses Leading to the Degree of M.S.A.

1. Candidates for the degree of Master of Science in Agriculture (M.S.A.) must hold a Bachelor's degree from this University, or its equivalent. Students, however, who have not more than six units of the undergraduate course to complete will be allowed to take courses counting toward a graduate degree; but these courses will not be counted as graduate credits until the students have registered as graduate students.

2. A graduate of another university applying for permission to enter as a graduate student is required to submit with his application an official statement of his graduation, together with a certificate of the standing gained in the several subjects of his course. The Faculty will determine the standing of such a student in this University. The fee for examination of certificates is \$2.00.

3. Candidates with approved degrees and academic records who proceed to the Master's degree shall be required:

- (a) To spend at least one year in resident graduate study; or
- (b) (At the discretion of the Faculty concerned)
 - (i) To do two or more years of private work under the supervision of the University, such work to be equivalent to one year of graduate study; or
 - (ii) To do one year of private work under University supervision and one term of resident graduate study, the total of such work to be equivalent to one year of resident graduate study.

4. Students doing tutorial work shall not be allowed to come up for final examination in less than two academic years after registration as M.S.A. students.

5. One major and one minor shall be required. Candidates may select their minor in another Faculty.

At least second class standing is required in the subjects of the major and minor.

The choice of and relationship between major and minor subjects, and the amount of work in each, or of tutorial work, must be approved by the Head of each of the Departments concerned, by the Committee on Graduate Studies, and by the Dean. Special forms of "Application for a Course Leading to the Master's Degree" may be obtained from the Registrar's office.

6. A candidate presenting himself for the degree of M.S.A. may be required by the Head of the Department in which he is majoring to have a reading knowledge of French or German.

7. (a) A thesis must be prepared on some approved topic in the major subject and must be submitted not later than the last day of lectures in the Spring Term of the graduating year; the corresponding date for the Autumn Congregation shall be October 1st.

(b) A thesis represents three to six units of work.

(c) Examinations, written or oral, or both, shall be required.

8. Two typewritten copies of each thesis on standard-size thesis paper, shall be submitted. (See special circular of "Instructions for the Preparation of Masters' Theses.")

9. Application for admission as a graduate student shall be made to the Registrar by October 1st. (See schedule of fees.)

Teacher Training Course

Students planning to enter the Teacher Training Course through Agriculture must have obtained at least nine (9) units of credit in Agriculture in addition to Agriculture 1 and 2, and at least nine

(9) units of credit in any one of the following subjects: Chemistry, Physics, Mathematics or Biology (including Botany and Zoology) in addition to Chemistry 1, Physics 1 or 2, and Biology 1 (*a*).

In addition to the above, prospective candidates for the Teacher Training Course are required to select undergraduate courses in such a way that, in addition to English 1 and 2, they will have obtained either six units of credit in one, or three units of credit in each of two of the following: English, Mathematics, Matriculation Language, Social Sciences (History, Economics, Political Science and Sociology).

Students who intend to proceed to the Teacher Training Course are required to take Psychology 1 as prerequisite to Educational Psychology.

For further particulars, see "Teacher Training Course" under Faculty of Arts and Science.

Examinations and Advancement

1. Examinations in all subjects, obligatory for all students, are held in April. In the case of subjects which are final at Christmas and in the case of courses of the First and Second Years, examinations will be held in December as well. Applications for special consideration on account of illness or domestic affliction must be submitted to the Dean not later than two days after the close of the examination period. In cases where illness is the plea for absence from examinations, a medical certificate must be presented on the appropriate form, which may be obtained from the Dean's office.

2. Undergraduate students in all years as well as those taking work in the Summer Session will not be considered as having passed unless they obtain 50 per cent or more in each subject.

3. Successful candidates will be graded as follows: First Class, an average of 80 per cent. or over; Second Class, 65 to 80 per cent.; Passed, 50 to 65 per cent.

4. If a student's general standing in the final examinations of any year is sufficiently high, the Faculty may grant him supplemental examinations in the subject or subjects in which he has failed. Notice will be sent to all students to whom such examinations have been granted.

5. Supplemental examinations will be held in September. Special examinations will not be granted, except by special permission of the Faculty, and on payment of a fee of \$7.50 for each paper. Application for special examinations must be made at least two weeks prior to the scheduled meetings of the Faculty in October and February.

6. Applications for supplemental examinations, accompanied by the necessary fees (see Schedule of Fees), must be in the hands of the Registrar by August 15th.

7. No student may enter a higher year with supplemental examinations still outstanding in respect of more than 3 units of the preceding year, nor with any supplemental examination outstanding in respect of the work of an earlier year or of Matriculation, unless special permission to do so is granted by Faculty. Such permission will be granted only when Faculty is satisfied that the failure to remove the outstanding supplemental examinations had an adequate cause.

8. A student may not continue in a later year any subject in which he has a supplemental examination outstanding from an earlier year, except in the case of compulsory subjects in the Second Year.

9. A student who is not allowed to proceed to a higher year may not register as a partial student in respect of the subjects of that higher year. But a student who is required to repeat his year will be exempted from attending lectures and passing examinations in subjects in which he has already made at least 50 per cent. In this case, he may take, in addition to the subjects of the year which he is repeating, certain subjects of the following year.

10. A student who fails twice in the work of the same year may, upon the recommendation of the Faculty, be required by the Senate to withdraw from the University.

11. Any student whose academic record, as determined by the tests and examinations of the first term of the First or Second Year, is found to be unsatisfactory, may, upon the recommendation of the Faculty, be required by the Senate to discontinue attendance at the University for the remainder of the session. Such a student will not be readmitted to the University as long as any supplemental examinations are outstanding.

12. Term essays and examination papers will be refused a passing mark if they are noticeably deficient in English, and, in this event, students will be required to pass a special examination in English to be set by the Department of English.

DEPARTMENTS AND COURSES IN AGRICULTURE

Agriculture

1. *General Agriculture.* — This course provides by means of lectures, demonstrations and laboratory exercises a general survey of the field of Agriculture and an introduction to the work of the various branches of Agriculture, such as Agronomy, Animal Husbandry, Dairying, Horticulture and Poultry Husbandry.

Two lectures and one laboratory per week. First Year.

The Staff.

3 units.

2. *General Agriculture, History of Agriculture.* — A continuation of Course 1, so far as it embraces a study of the development of Agriculture from early primitive stages to its present state of scientific advancement.

Special attention is paid to the evolution of Agriculture in Great Britain and the Dominions, and to agricultural settlement and growth on the North American continent.

Two lectures and one laboratory per week. Second Year.

Mr. P. A. Boving.

3 units.

Not offered in 1939-40. For alternative course see under Second Year, page 256.

Department of Agronomy

Professor: G. G. Moe.

Professor: P. A. Boving.

Associate Professor: D. G. Laird.

General Agronomy.—(Included in *Agriculture* 1 and 2 in the First and Second Years respectively.)

14. *Field Crops.*—A systematic study of the most important grain, forage and root crops. The laboratory work includes studies of noxious weed seeds, the commercial and seed grades of Canada, the commercial grain and hay grades of the United States and the identification and judging of the principal types and varieties of field crops. Special problems of production, weed control, harvesting and storage are considered, as well as the physical phases of marketing.

Two lectures and one laboratory per week.

Mr. Moe.

3 units.

15. *Field and Crop Management.*—Embraces a study of cultural practices, rotations and costs in connection with the economics of crop production, and also includes theoretical and practical exercises in drainage and field mensuration.

Two lectures and one laboratory per week. Second Term.

Mr. P. A. Boving.

1½ units.

16. *Soil Management.* — Different systems of cultivation, rotation, manuring and irrigation as practised in Canada and elsewhere are discussed, and the influence of these factors on the maintenance or exhaustion of soil fertility.

Two lectures and one laboratory per week. Second Term.

Mr. Laird.

1½ units.

17. *Plant Breeding and Seed Production*.—Principles of plant breeding, methods of crop improvement. Production of improved seed of cereals, forage crops and roots.

Two lectures and one laboratory per week. 3 units.

18. *Experimental Methods*.—Field experimentation, corrections for plot variability. Use and application of probable error, standard deviation, coefficient of variability, correlation coefficient. Students' method of paired experiments. Fisher's methods.

Two lectures and one laboratory per week. Second Term.

Mr. Laird. 1½ units.

19. *Field Crops (Advanced)*.—Studies of the climatic, ecological and biological factors which influence the distribution and world production of field crops.

Three lectures per week. First Term.

Mr. Moe. 1½ units.

20. *Soil Bacteriology*.—Laboratory and lecture course, in which the bacteria of soils are studied qualitatively and quantitatively, with special reference to soil fertility. (Same as Bacteriology 6.)

Reference: Waksman, *Principles of Soil Microbiology*, latest edition.

Prerequisite: Bacteriology 1.

Five hours per week.

Mr. Laird. 3 units.

21. *Range Ecology*.—A study of the vegetation of range lands; its control and perpetuation. Ecological relationship of range species. Experimental methods and maintenance problems.

Two lectures and one laboratory per week. First Term. 1½ units.

22. *Weeds*.—A study of the common weeds of the Province. Influence of weeds on crop growth, identification, mode of reproduction, cultural and chemical methods of control.

Two lectures and one laboratory per week. Second Term. 1½ units.

25. *Undergraduate Essay*.—The preparation of a report on an applied problem. 3 units.

30. *Directed Studies*.—Systematic work on an approved problem. 3 units.

50. *Applied Plant Genetics*. — The genetics of crop plants.

Lectures, seminar periods and research.

Mr. Moe. 3 to 5 units.

51. (a) *Soils*.—The interaction of the physical, chemical and biological forces of the soil.

Three lectures per week. 3 units.

51. (b) A laboratory course based on 51 (a).

Two laboratory periods per week. 2 units.

Course (b) must be preceded by or taken concurrently with course (a).

52. *Field Crops*. — Special phases of field crop production, management and improvement, with particular emphasis on the application of recent research findings.

Lectures, seminar periods and research. 3 to 5 units.

Department of Animal Husbandry

Professor: H. M. King.

Associate Professor: Stanley N. Wood.

Assistant Professor: J. C. Berry.

Instructor: J. G. Jervis.

General Animal Husbandry.—(Included in *Agriculture* 1 and 2 in the First and Second Years respectively.)

15. *Breeds of Livestock*.—The judging of livestock and a study of the origin, history of development, characteristics and adaptations of the breeds of dairy cattle, beef cattle, sheep, swine, horses and goats. Students may be required to visit conveniently located farms.

Two lectures and one laboratory per week. 3 units.

16. *Animal Nutrition*.—The elements and compounds important to Animal Nutrition and their relation to the animal organism; the digestive system; the digestion, absorption, assimilation and disposition of food materials; the causes and effects of malnutrition.

Two lectures and one laboratory per week. 3 units.

17. *Animal Feeding and Breeding*. — A study of feeds. The economic and other problems involved in the feeding of all classes of livestock. Principles and methods of animal improvement. Variation and inheritance in livestock. The physiology of reproduction. Blood lines and pedigree construction.

Two lectures and one laboratory per week. 3 units.

18. *Livestock Marketing and Management*. — A study of the requirements of livestock markets, marketing livestock products and breeding stock. The management of the range, ranch and farm for the production of livestock.

Two lectures and one laboratory per week. 3 units.

19. *Seminar*.—Current problems and literature. Research and experimental work with animals. The selection and development of herd sires and breeding herds. Students may be required to visit conveniently located farms.

One lecture and two laboratories per week. 3 units.

20. *Comparative Anatomy and Physiology*.—The gross anatomy of farm animals, with special laboratory dissection study of the respiratory, circulatory, digestive and urogenital systems; the fetus and fetal membranes.

Physiological functions of the body organs and systems, with special study of the fluid circulation, endocrine activity, growth, reproduction, nutrition and the response of the body to injury and disease.

Two lectures and one laboratory per week. 3 units.

21. *Animal Diseases, Hygiene and Sanitation*.—A microscopic study of organs and tissues, including histology, embryology and pathology.

Applied studies in the recognition, rational treatment and control of functional and nutritional disturbances in growth and reproduction, parasitism, sporadic and infectious diseases. Outlines of programmes for eradication of diseases, control of parasites, health inspection and quarantine of livestock for export or import, animal hygiene, sanitation and public health regulations.

Prerequisite: 3 units of Animal Husbandry. Bacteriology 1.

Two lectures and one laboratory per week. 3 units.

25. *Undergraduate Essay*. 3 units.

30. *Directed Studies*. 3 units.

50. *Research*. — Special problems in dairy cattle production. Sanitary and pathological conditions in relation to milk production. 3 to 5 units.

51. *Research*.—Special phases of animal nutrition as related to growth, production and reproduction. 3 to 5 units.

Department of Dairying

Professor: Blythe Eagles.

Assistant: Olga Okulitch.

General Dairying.—(Included in *Agriculture* 1 and 2 in the First and Second Years respectively.)

1. *Butter-Making*.—An elementary course.

Two lectures and one laboratory per week. First Term.

1½ units.

2. *Cheese-Making*.—An elementary course.

Two lectures and one laboratory per week. Second Term.

1½ units.

4. (a) *Dairy Bacteriology*.—The bacteriology of milk; sources of bacteria in milk, and quantitative and qualitative determinations of the bacterial content of milk; normal and abnormal fermentations of milk and a study of certain organisms responsible therefor.

Reference: Orla-Jensen, *Dairy Bacteriology*, J. and A. Churchill, latest edition; Hammer, *Dairy Bacteriology*, J. Wiley & Sons, latest edition.

Prerequisite: Bacteriology 1.

Four hours per week. First Term.

1½ units.

4. (b) The physical and chemical properties of milk and their influence on the growth of bacteria in milk and in milk products. The handling and management of milk for city consumption; grading of milk and milk products on bacterial standards.

Reference: Rogers, *Fundamentals of Dairy Science*, A. C. S. Monograph, latest edition.

Prerequisite: Bacteriology 1.

Four hours per week. Second Term.

1½ units.

6. *Cheese and Cheese-Making*.—This course deals with the principles and practices of cheese-making—hard-pressed, blue-veined and soft.

Two lectures and two laboratories per week. Fourth Year.

4½ units.

7. *Advanced Dairy Bacteriology*.—The ripening of hard-pressed cheese and a systematic study of the lactic acid bacteria.

Reference: Orla-Jensen, *The Lactic Acid Bacteria*, Copenhagen.

Prerequisites: Bacteriology 1 and 4 (a).

One lecture and two laboratories per week.

3 units.

13. *Dairy Mycology*.—This course concerns itself with the study of the molds that take part in the ripening of cheese. To an extent, attention is given to the molds associated with the spoilage of butter.

One lecture and two laboratories per week. First Term.

1½ units.

(Not offered in 1939-40.)

25. *Undergraduate Essay*. — A written report on a prescribed laboratory study.

Fourth Year.

3 units.

30. Systematic work on an approved problem. 3 units.
50. Directed systematic studies of defined phases of the work introduced in Courses 4 or 7. 3 to 5 units.
(Open to Graduates only.)

Department of Horticulture

Professor: F. M. Clement.
Professor: A. F. Barss.
Associate Professor: G. H. Harris.
Special Lecturer: F. E. Buck.

General Horticulture.—(Included in *Agriculture* 1 and 2, in the First and Second Years respectively.)

13. *Practical Horticulture.*—A detailed study of the principles involved in plant propagation; in tree-fruit and small-fruit growing; and in nursery and greenhouse management; supplemented by laboratory, field, orchard, nursery and greenhouse practice in the various horticultural operations.

Two lectures and one laboratory per week. 3 units.

14. *Commercial Horticulture.* — A study of the problems connected with the handling of fruits and vegetables — harvesting, grading, packing, shipping, storing, marketing; packing and storage houses; costs of production and of marketing.

Two lectures and one laboratory per week. First Term.
1½ units.

15. *Special Horticulture.* — The study of special branches of Commercial Horticulture, including the manufacture of horticultural products—canning, dehydration, etc.; and the growing and marketing of such horticultural crops as nuts, citrus fruits, figs, dates, etc.

Two lectures and one laboratory per week. Second Term.
1½ units.

16. *Landscape Gardening and Floriculture.* — The course aims to give the student a working knowledge of the selection, planting and care of ornamental plants—trees, shrubs and flowers; with the principles for the improvement of home grounds, school grounds, city streets and parks. The course includes practice in identification of plant materials; also practice in making of planting plans.

Two lectures and one laboratory per week. First Term.
1½ units.

17. *Vegetable Gardening.*—A study of the problems connected with the commercial growing of vegetables, including the selection of a location, soil requirements, fertilizing, irrigating, and special

cultural methods for the more important vegetables. This course also deals with the forcing of vegetable crops.

Two lectures and one laboratory per week. Second Term.

1½ units.

18. *Systematic Horticulture*. — The description, identification, classification, displaying and judging of horticultural crops—tree fruits, small fruits and vegetables.

One lecture and two laboratories per week. First Term.

1½ units.

19. *Horticultural Problems and Seminar*.—An introduction to the study of problems in Horticulture, including the breeding of Horticultural crops, variety, adaptations, and methods of research, together with a review of Horticultural investigational work in other institutions. There will also be practice in outlining investigations, and in preparing reports.

Two lectures and one laboratory per week. Second Term.

1½ units.

25. *Undergraduate Essay*. — A satisfactory report on some approved subject upon which the student has done special investigational work.

3 units.

30. *Research in Horticulture*.—Directed study on some special problem in the applied phases of Horticulture.

3 units.

50. *Research in Horticulture*.—Directed study on some special problem in Systematic Horticulture, Plant Propagation, Genetics as related to Horticultural Crops, etc.

3 to 5 units.

60. *The Structure of Economic Plants*.—A detailed study from growing material supplemented by microscopic slides of a number of important crop plants. (To be taken only with consent of instructor.)

Three laboratories per week. First Term.

1½ units.

Plant Nutrition

41. *Plant Nutrition (a)*.—This course comprises a study of the organic constituents of plants and the physiological changes occurring during plant growth. (Same as Botany 3[b].)

Two lectures and four hours laboratory work per week. First Term. Fourth Year.

2 units.

42. *Plant Nutrition (b)*.—A course dealing with the underlying principles and latest developments of such subjects as utilization of inorganic elements, nitrogen relations, plant buffer systems, permeability, photosynthesis, respiration, enzyme action, and

growth rates. This course includes laboratory and greenhouse experiments designed to train students of the plant sciences in an understanding of the inter-relations of plants and soils. (Same as Botany 3[c].)

Two lectures and four hours laboratory work per week. Second Term. Fourth Year. 2 units.

43. *Seminar in Plant Nutrition.* — This course comprises a discussion of papers on modern views of plant nutrition, together with more recent papers on Applied Plant Physiology.

Two hours per week. First Term. 1 unit.

54. *Advanced Plant Nutrition.* — An advanced study of the Physiology and the organic constituents of Plants and Plant Products. Special attention is given to specific problems in this Province which require a knowledge of the correlation of the various sciences to plants and plant products. Food values of Horticultural crops, and factors which effect these, are emphasized.

(Open to Graduates only.)

Two lectures and four hours laboratory a week. 4 units.

Department of Poultry Husbandry

Professor: E. A. Lloyd.

Instructor: J. Biely.

Introduction to Poultry Husbandry.—(Included in *Agriculture* 1 and 2, in the First and Second Years respectively.)

12 (a) *Fundamentals of Poultry Husbandry.*—Feeds, feeding management, poultry housing, sanitation, hygiene and diseases.

Two lectures and one laboratory per week. First Term.

12. (b) *Fundamentals of Poultry Husbandry.*—Breeds, breeding, judging, selection, culling, incubation, brooding, egg grading, marketing, general management.

Reference: L. M. Hurd, *Practical Poultry Farming*, MacMillan Company.

Two lectures and one laboratory per week. Second Term.

3 units.

13. *Markets and Marketing.* — Poultry products in British Columbia, the British Columbia market, inter-provincial trade, export trade, egg grading, Dominion and Provincial regulations, channels and functions of marketing, care and preparation of eggs and poultry for market, judging, culling and selection for egg and meat production, killing, dressing, grading, packing and storing of

poultry meats, marketing baby chicks and breeding stock, co-operative marketing, prices.

Reference: Benjamin and Pierce, *Marketing Poultry Products*, J. Wiley & Sons.

Two lectures and one laboratory per week. First Term, Third Year. 1½ units.

14. *Breeding and Judging*.—The breeds of poultry, their history, origin and economic qualities. Study of production records. Methods of breeding for egg and meat production. Theories of inheritance. Judging and selection for egg and meat production.

Reference: Rice, Hall and Marble, *Judging Poultry for Production*, J. Wiley & Sons; Jull, *Poultry Breeding*, J. Wiley & Sons.

Two lectures and one laboratory per week. 3 units.

16. (a) *Poultry Farm Management*.—Types of poultry farms and their respective problems. Farm lay-outs. Poultry-house construction. Investment of capital in land, buildings, stock and equipment. Efficiency in labour, housing, production and personnel. Farm income, labour income and profit as based on farm surveys. Costs of production. Visits to farms.

Two lectures and one laboratory per week. First Term, Fourth Year. 1½ units.

16. (b) *Incubation and Hatchery Management*.—An advanced course dealing with the principles and practices of incubation. Students will study and be required to operate different types of incubators and brooders. Inspection of hatcheries and survey of hatchery business methods and costs. One lecture and two laboratory periods, or one laboratory of four hours' duration per week. Second Term, Third or Fourth Year.

References: Morley A. Jull, *Poultry Husbandry*, McGraw-Hill Book Co. Inc.; Lippincott & Card, *Poultry Production*, Lea and Febiger, Sixth Edition. 1½ units.

18. *Diseases and Hygiene*. — Anatomy and physiology of the fowl. Poultry sanitation and hygiene. Common ailments of poultry and their treatment. External and internal parasites. Bacterial diseases of poultry, chicks, turkeys, geese and ducks. Virus diseases. Study of micro-organisms pathogenic for poultry. Practice in serological tests. Microbial content of eggs. Autopsies. Study of the literature. Inspection of farms.

Reference: Barger and Card, *Poultry Diseases*, Lea & Febiger.

Two lectures and one laboratory per week. Second Term, Fourth Year. 1½ units.

19. (a) *Poultry Nutrition*.—A general study of the underlying principles and recent advances in the field of nutrition, involving a detailed examination of the nutrients, the physiology of digestion and the requirements of the body for maintenance and production. Students are required to conduct personally or observe nutritional experiments.

Reference: Sherman, *Chemistry of Food and Nutrition*, Macmillan Co., latest edition; Maynard, *Animal Nutrition*, McGraw-Hill Book Co.

Two lectures and one laboratory per week. First Term, Fourth Year. 1½ units.

19. (b) *Feeding Management*. — Study of feed-stuffs. Compounding of rations for poultry. Feeding practices and costs. Feeding chicks, growing stock, laying hens, breeding males and females. Turkeys, ducks and geese. Use of lights. Study of standard methods of routine management. Problems and assigned reading. Survey of recent literature on poultry feeding.

Reference: Jull, *Poultry Husbandry*, McGraw-Hill Book Co.

Two lectures and one laboratory per week. Second Term, Fourth Year. 1½ units.

20. *Seminar*. — Poultry literature. Preparation of a library. Reports on current events. Research and experimental problems. Preparation of reports and bulletins. Marketing problems. Advertising poultry products. Poultry services and organizations.

One lecture per week. Four hours practice per week.

1½ units.

25. *Undergraduate Essay*.

3 units.

30. *Research* (Directed).

3 units.

50. *Research* (Directed).

(Open to Graduates only.)

3 to 5 units.

Agricultural Economics

A. *Farm Organization and Management*.—An intimate study of the business and organization of farms of the general and specialized types, as revealed by a detailed analysis of the financial records of 400 British Columbia farms over a period of ten years; a general study of the farm business in Europe, United States and Canada.

References and assigned readings from Gray, Ross, Warren, Adams and others.

Two lectures and one laboratory per week throughout the year. 3 units.

1. *Agricultural Economics*. — The principles of Economics as applied to Agriculture; historical background, the agricultural problem, and some special topics, such as the agricultural surplus, production in relation to population growth, the farm income and the share of agriculture in the national income.

Text: Taylor, *Agricultural Economics*, Macmillan.

References and assigned readings from Gray, Carver, Nourse and others.

Three lectures per week.

Mr. Clement.

3 units.

2. *Marketing*. — The principles of Marketing as applied to the individual farm and to Agriculture as a whole. The general principles of Marketing, the marketing of agricultural products as compared to wholesale and retail distribution of manufactured goods, the contributions of national Farmer Movements, co-operative marketing as illustrated by the marketing of wheat, fruit and milk in Canada.

Texts: Hibbard, *Marketing Agricultural Products*, D. Appleton & Co.; Mackintosh, *Agricultural Co-operation in Western Canada*, Ryerson Press, Toronto.

References and assigned readings from Macklin, Boyle, Benton, Black, Patton and others.

Three lectures per week.

Mr. Clement.

3 units.

50. *Agricultural Economics*. — The principles of Economics as applied to the individual farm and to agriculture as an industry. Lectures, discussions and assigned readings. (Open to Graduates only.)

Mr. Clement.

3 to 5 units.

51. *Agricultural Economics*. — The general principles of marketing, price fixing, marketing by commission, the influence of the market on production, co-operation; special topics and assigned reading from general reference and the reports of the American Institute of Co-operation. (Open to Graduates only.)

Mr. Clement.

3 to 5 units.

Department of English

Professor: G. G. Sedgewick.

Assistant Professor: Edmund Morrison.

SECOND YEAR

3. *Composition*. — A course in composition especially designed to meet the needs of students in the Faculties of Applied Science and Agriculture. It offers training in economical and accurate objective

writing. The work consists of (1) essays, class exercises, and selected reading, and (2) written examinations. Students will be required to make a passing mark in each of these two parts of the work.

Text-book: To be announced.

Two hours per week. Mr. Morrison.

2 units.

THIRD YEAR

4. *Technical Writing*.—This course follows English 3 and offers instruction in the preparation and writing of technical papers and reports, with emphasis upon the organization and forms appropriate to such work.

Text-book: To be announced.

One hour per week. Mr. Morrison.

1 unit.

Genetics

A. H. Hutchinson.

G. G. Moe.

1. (a) *Principles of Genetics*.—The fundamentals of genetics illustrated by the race histories of certain plants and animals; the physical basis of heredity; variations; mutations; acquired characters; Mendel's law with suggested applications. (Same as Biology

2 [a] under Botany.)

Text-book: Castle, *Genetics and Eugenics*, Harvard Press.

Prerequisite: Biology 1.

Three hours per week. First Term.

Mr. Hutchinson.

1½ units.

1. (b) *Principles of Genetics*.—A continuation of the studies of genetic principles with suggested applications. A lecture and laboratory course. The laboratory work will consist of problems, examination of illustrative material and experiments with *Drosophila*. (Same as Biology 2 [b] under Botany.)

Text-book: Sinnott and Dunn, *Principles of Genetics*, McGraw-Hill.

Prerequisite: Genetics 1 (a).

One lecture and four hours laboratory per week. Second Term.

Mr. Moe.

1½ units.

2. *Advanced Genetics*.—

(a) An introduction to genetical methods.

Prerequisites: Genetics 1 (a) and 1 (b).

One lecture and two hours laboratory per week.

2 units.

(b) A review of advanced phases and the more recent developments in genetics.

Prerequisite: Genetics 1 (b).

Two hours per week. Second Term.

1 unit.

Department of Bacteriology and Preventive Medicine

Professor: C. E. Dolman.

(For details of courses see Pages 102-105.)

Department of Botany

Professor: A. H. Hutchinson.

(For details of courses see Pages 105-111.)

Department of Chemistry

Professor: R. H. Clark.

(For details of courses see Pages 111-116.)

Department of Civil Engineering

Professor: J. N. Finlayson.

(For details of courses see Pages 214-222.)

Department of Classics

Professor: Lemuel Robertson.

(For details of courses see Pages 117-120.)

Department of Economics, Political Science, and Sociology

Professor: Henry F. Angus.

(For details of courses see Pages 122-132.)

Department of English

Professor: G. G. Sedgewick.

(For details of courses see Pages 134-138.)

Department of Geology and Geography

Professor: M. Y. Williams.

(For details of courses see Pages 138-145.)

Department of History

Professor: W. N. Sage.

(For details of courses see Pages 145-151.)

Department of Mathematics

Professor: Daniel Buchanan.

(For details of courses see Pages 151-155.)

Department of Modern Languages

Professor: D. O. Evans.

(For details of courses see Pages 155-160.)

Department of Philosophy and Psychology

Professor: H. T. J. Coleman.

(For details of courses see Pages 160-165.)

Department of Physics

Professor: G. M. Shrum.

(For details of courses see Pages 165-169.)

Department of Zoology

Professor: C. McLean Fraser.

(For details of courses see Pages 170-171.)

1939-40

DOUBLE COURSES

DOUBLE COURSES FOR THE DEGREES OF B.A. and B.A.Sc.

I. Arts and Science, and Nursing

The students register in the Faculty of Arts and Science for three years' work as follows:

FIRST YEAR

English 1
Mathematics 1
Language 1
Chemistry 1
Biology 1

SECOND YEAR

English 2
Language 2
Physics A or 1
Zoology 1
Bacteriology 1

No student with defective standing in the first two years will be admitted to the Third Year.

THIRD YEAR

Bacteriology 2	3 units.
Psychology A or 1	3 units.
Elementary Biochemistry	1 unit.
History of Nursing	1 unit.

Nine additional units to be chosen in accordance with Calendar regulations, not more than three of which may be chosen from First and Second Year subjects. 9 units.

FOURTH, FIFTH, AND SIXTH YEARS (Professional)

The degree of B.A. is granted upon completion of the professional years. The diploma from the Hospital School of Nursing is also awarded.

FINAL YEAR

As in the Combined Course, *i.e.*, a choice between the two courses, Nursing B and Nursing C. The degree of B.A.Sc. (Nursing) is granted upon completion of the Final Year.

The degree of B.A.Sc. (Nursing) may also be awarded to other candidates holding the degree of B.A. who have fulfilled all requirements for the degree of B.A.Sc. (Nursing).

II. Arts and Science, and Engineering

Two complete years in Arts and Science and four complete years in Applied Science are required for a Double Degree. Consequently students must not select courses in Arts and Science that are included in the Applied Science years, on account of time-table difficulties.

The requirements for the First and Second Years are as set forth in the Calendar for the First and Second Years of Arts (pages 74-76) except as follows:

1. Physics A or 1 and Chemistry 1 must be taken. The passing grade for each of these subjects and for Mathematics 1, is sixty per cent. (See also Admission to Applied Science, page 176.) Students are recommended to take Mathematics 2 (*b*) (*Calculus*).
2. Chemistry 2, Geology 1, Mathematics 2 (*a*), Physics 4, Physics 5, or Physics 6 may not be taken except as an extra subject. These subjects are covered later in Applied Science.
3. A course in German is recommended (and, for those intending to enter Geological or Civil Engineering, French also). Two years in the language elected is necessary to count towards a degree, three years when the student has not matriculated in the language elected.

The Third, Fourth, Fifth, and Sixth Years of the Double Course correspond to the Second, Third, Fourth, and Fifth Years of Applied Science. The degree of B.A. is conferred on completing the Fifth Year of this course.

DOUBLE COURSES FOR THE DEGREES OF B.A. and B.S.F.

I. Biology (Forestry Option), and Forestry

Students completing the Honours course in Biology (Forestry Option) for the B.A. degree (see page 80) may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see page 189).

Prerequisites: First Year, Biology 1; Second Year, Botany 1, Civil Engineering 2; Zoology 1, Physics A or 1, and Chemistry 1, 2, and 3 (to be taken as early as possible).

Required Courses: Botany 3 (*a*), Botany 4, Botany 5 (*a*), 5 (*b*), Botany 6 (*c*) or 6 (*e*), Botany 7, Zoology 4, a thesis. The following courses which are common to all Third and Fourth Year options leading to a degree in Forestry: General Forestry and Civil Engineering 6, in the Third Year; Forest Economics, in the Fourth Year. Botany 5 (*b*) should be taken in the Third Year.

Other courses to complete the requirements to be arranged in consultation with the Department. Agronomy 51 and Botany 6 (*b*) are recommended.

II. Economics or Economics and Political Science, and Forestry

Students completing the Honours courses in Economics or in Economics and Political Science for the B.A. Degree (see page 80)

may qualify for the degree of B.S.F. by taking the Fifth Year in Forestry (see page 189).

Required Courses: In the Second Year, General Forest Botany, Civil Engineering 2; in the Third Year, General Forestry and Civil Engineering 6; in the Fourth Year, Forest Economics 1.

To complete the required additional 15 units for the extra degree an optional course (exclusive of the above) may be taken from the courses (not already taken for the B.A. degree) offered in the Department of Economics.

DOUBLE COURSE FOR THE DEGREES OF B.Com. and B.S.F.

Options in Forestry have been added in the Second, Third, and Fourth years of the B.Com. course for the benefit of students who look forward to work with the forest industries. Students who complete the work for the B.Com. degree with these options and take the field work incidental to them may qualify for the degree of B.S.F. by taking the Fifth Year Forestry course in Applied Science.

The courses required for the Forestry option are: In the Second Year, General Forest Botany and Civil Engineering 2 (*Field Work*); in the Third Year, General Forestry and Civil Engineering 6; in the Fourth Year, Forest Economics 1. These subjects may not be chosen individually by Commerce students, but all are required for students who intend to take the Fifth Year Forestry course in Applied Science for the B.S.F. degree.

1939-40

LIST OF STUDENTS IN ATTENDANCE

SESSION 1938-39

FACULTY OF ARTS AND SCIENCE

FIRST YEAR

Full Undergraduates

Name	Home Address	Name	Home Address
Adam, James C.	Vancouver	Burton, John F.	Vancouver
Alexander, W. Douglas	Vancouver	Bushell, Norman F.	Vancouver
Allen, Daphne L.	Vancouver	Butcher, Joseph	Headquarters
Anderson, Blair W.	Vancouver	Butler, Emma I.	Vancouver
Annand, J. Duff	New Westminster	Cade, Geraldine M.	Prince Rupert
Annandale, Beverley J.	Vancouver	Cameron, D. Ian	Vancouver
Arai, Kimimichi	New Westminster	Campbell, James McG.	Vancouver
Armour, June C.	Prince Rupert	Campbell, Mary I.	Vancouver
Ashford, Alice R.	Vancouver	Cantell, Thomas E.	New Westminster
Ashworth, Frances E.	Invermere	Carlsen, Alfred E.	Willow River
Askew, Francis G.	Vancouver	Carlyle, R. Harold	Vancouver
Atkin, Mary F.	Vancouver	Carmichael, Howard	Vancouver
Atkins, Phyllis W.	Steveston	Carson, John J.	Vancouver
Augustine, Kathleen	New Westminster	Carter, Eileen V.	Vancouver
Avis, Margaret L.	Vancouver	Carter, Evelyn E.	Vancouver
Ayres, Geoffrey G. B.	Rossland	Carter, Ronald B.	New Westminster
Backman, Arvid H. W.	Vancouver	Caulfield, William J.	Blakeburn
Baker, Robert A.	New Westminster	Charlesworth, F. H. Barrie	Vancouver
Baldwin, John H.	Vancouver	Chew, Elsie F.	Vancouver
Ball, Harold W.	Monterey, Calif.	Christopherson, Charles J.	Vancouver
Ball, Margaret L.	Windermere	Ciccone, Leo D.	Vancouver
Bannerman, Donald K.	Vancouver	Clemens, Alvin B.	Nanaimo
Barrie, Edward J.	Vancouver	Clery, Patrick M.	Vancouver
Bartholomew, Ben.	North Vancouver	Clugston, Jean E.	Vancouver
Barton, Arthur S.	Vancouver	Coburn, Robert F. M.	Vancouver
Barwick, Evelyn B.	Vancouver	Coffey, Doris M.	Vancouver
Bell, Edna-Mae.	Victoria	Coleman, W. Aubrey	Vancouver
Bell, Gordon D.	Vancouver	Collins, Thomas L.	Vancouver
Bell, Jack A.	Vancouver	Collyer, James H.	Cloverdale
Bell, Roy G.	Winnipeg, Man.	Cooke, Constance R.	Vancouver
Benson, Edward	Chapman Camp	Cote, Paul T.	Vancouver
Bertram, Francis E.	Vancouver	Cowan, Robert P.	Vancouver
Bingham, Arthur J.	Vancouver	Cox, Jane E.	Rossland
Bingham, William J.	Vancouver	Cox, Leonard	Vancouver
Bird, Arthur C.	Vancouver	Craig, Charles E.	Vancouver
Black, June E.	Powell River	Cribb, Helen C.	Vancouver
Bloch, Dorothy A.	Vancouver	Croll, M. Jean	Vancouver
Boale, Betty	Vancouver	Crowe, Margaret A.	Vancouver
Bolton, Nancy	New Westminster	Cunningham, Margaret A.	Vancouver
Bolton, Thomas M.	Vancouver	Cushing, Jean L.	West Vancouver
Bone, David A. G.	Vancouver	Darby, James L.	Vancouver
Bonner, Robert W.	Vancouver	Darling, Denise	Vancouver
Bourne, Edward A.	Trail	Darling, M. Kathleen	Vancouver
Bowie, James L.	Vancouver	Davidson, Robert A.	Vancouver
Boxall, Ernest A.	Ladner	Davies, Evann	Vancouver
Boylan, Elizabeth M.	Port Alberni	Dawe, Greta B.	Vancouver
Brayshaw, T. Christopher	Vernon	Dawson, Jean R.	Vancouver
Bromley, Cyril B.	North Vancouver	Dear, Wallace E.	Brighouse
Brown, Ellen L.	Vancouver	DeLeen, John	Vancouver
Brown, Robert B.	Vancouver	Dhaliwal, Dalip Singh	Port Moody
Brownell, J. Ross	Vancouver	Dhaliwal, Rameshwar Singh	Port Moody
Bruchet, Anthony	Vancouver	Dimock, Alice B.	Smithers
Buchanan, James B.	Vancouver	Dooley, Frances R.	Vancouver
Buck, F. A. Mackinnon	Vancouver	Dorer, Jack N.	Vancouver
Buckland, John A. C.	New Westminster	Dryden, Earl	Vancouver
Bulgin, M. Minta	Vancouver	Dunbar, John D. F.	Vancouver
Burchell, Sheridan	Prince Rupert	Dutcher, Audrey S.	Vancouver
Burnes, John S. D.	North Vancouver	Eaton, Arthur R.	Vancouver
Burnham, Faye I.	Vancouver	Edwards, John H.	Cranbrook

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Eldridge, Kenneth A.	Vancouver	Henry, T. W. Everard	Fort Saskatchewan, Alta.
Elefthery, Demetrie	Vancouver	Hickenbotham, Marion S.	New Westminster
Ellis, David W.	Vancouver	Hodgkinson, Edward F.	Vancouver
Ellis, Dorothy I.	Vancouver	Holder, Ronald M.	Vancouver
Ellis, Hugh MacK.	Vancouver	Hole, Jack S.	Vancouver
Ellis, Jesslyn P.	Vancouver	Holmes, G. Alice	Vancouver
Ellis, Phyllis B.	Vancouver	Hood, James A.	Vancouver
Ellis, Robert L.	Vancouver	Hooper, Perry McF.	Salmon Arm
Elsdon, W. Douglas	Bonnington	Horne, Leslie R.	Vancouver
English, Earl T.	Vancouver	House, Jack	New Westminster
Evans, Donald C.	Vancouver	Howieson, Margaret	South Fort George
Evans, Margaret	Trail	Hughes, Phyllis E. C.	Penticton
Evans, Wilford G.	Summerland	Hunter, Harry I.	Powell River
Ewing, J. Kenneth	Vernon	Hurst, Alan	Vancouver
Ewing, Margaret L.	Vancouver	Hurst, Edwin	Vancouver
Falkins, Len M.	Vancouver	Hutchinson, James B.	Vancouver
Ferguson, William C.	Vancouver	Hyodo, Yoshio	Vancouver
Fergusson, Margaret E.	Vancouver	Jackson, William B.	Vancouver
Fierheller, Gordon M.	Vancouver	James, Douglas A.	Vancouver
Finch, Marguerite L.	Penticton	Jeffries, James G.	Vancouver
Finlay, J. Graham	Vancouver	Jenkins, W. Andrew	Vancouver
Finlayson, Anna Ruth	Vancouver	Jessup, Douglas G.	Ocean Falls
Fisher, Harold	Vancouver	†Johnson, Bo A.	Stockholm, Sweden
Fleming, Kelvin O.	Vancouver	†Johnson, Marie-Claire A.	Stockholm, Sweden
Flumerfelt, E. Noreen	Vancouver	Johnston, Donald W.	Vancouver
Forrester, A. Glen	Ladysmith	Johnston, Wallace M.	Chilliwack
Foster, Margaret E.	Vancouver	Johnston, W. G. Finlay	Nanaimo
Fothergill, Amy H.	Vancouver	Johnston, William J.	Vancouver
Fournier, Lionel J.	Pincher Creek, Alta.	Jones, Audrey L.	New Westminster
Fowler, Frances M.	New Westminster	Jukes, Dorothy E. L.	Vancouver
Foyston, Frank S.	Athalmer	Kapak, William P.	Nelson
Fraser, G. Brian R.	Farnham Common, Bucks, England	Keith, Kenneth L.	Vancouver
Fry, Margery V.	Vancouver	Keller, Cornelius W.	Vancouver
Galbraith, John	Langley Prairie	Keller, Margaret I. L.	Vancouver
Gall, Robert G.	Vancouver	Kenmuir, Robert C.	Vancouver
Gardiner, W. Marcus	Vancouver	Kenny, Wanda	Vancouver
Gardner, Alan	Pekisko, Alberta	Kermode, Donald J.	Vancouver
Gill, Norman A.	Kimberley	Killas, Nick J.	Prince Rupert
Gordon, Michael J. E.	Shanghai, China	King, A. David	Port Alice
Gorse, Frederick W.	Salmon Arm	Kjos, Alice	Vancouver
Graham, Harold M.	Squamish	Korsch, Leonard S.	Vancouver
Gray, David P.	Vancouver	Koshevoy, Ancie	Vancouver
Gray, John S.	Vancouver	LaBelle, Eugene P.	Vancouver
Grierson, D. Rodney	Vancouver	Lakie, Helen E. M.	Prince Rupert
Griffin, F. Paul	North Vancouver	Large, Margaret R.	Vancouver
Gross, Douglas H.	Vancouver	Lavell, Betsey B.	Vancouver
Gross, Edward	Vancouver	Lawson, Grant D.	Vancouver
Gusola, Gloria J.	Nanaimo	Lear, Harold K.	North Vancouver
Hackney, Amy L.	Rossland	Leigh-Spencer, Frank	Calgary, Alta.
Haggart, Margaret MacK.	Vancouver	Lennie, Doris C.	Vancouver
Hall, H. Kenneth	Vancouver	Lennie, Margaret L.	Vancouver
Hall, Ormonde J.	Vancouver	Lennox, Allan D.	Vancouver
Hamilton, D. Allan	Vancouver	Lightbody, Alexander	New Westminster
Hamilton, Dorothy H.	Vancouver	Lighthouse, Ralph K.	Vancouver
Hamilton, M. Joan	Vancouver	Lim Yuen, Paul	Vernon
Hammond, Paul L.	Vancouver	Lindsay, William K.	Vancouver
Handa, Roy	Vancouver	Livingston, Donald A.	Vancouver
Handforth, Victor R. L.	Salmon Arm	Long, Elizabeth G.	Vancouver
Harkley, Gerry	Vancouver	Lowe, Mary F.	Vancouver
Harris, R. Ethel	Nanaimo	Lunn, Gerald A.	Quesnel
Harrison, John B.	Vancouver	Lyle, Donald F. H.	Vancouver
Hasegawa, James	New Westminster	Malone, A. Patricia	Vancouver
Hassall, Peggy M.	Boundary Bay	Maloney, Douglas W.	Vancouver
Hebb, Elizabeth	Vancouver	Mann, Clarence W. J.	Vancouver
Henderson, Doreen	Vancouver		

†Partial.

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued)

Name	Home Address	Name	Home Address
Mannix, Luella.....	Vancouver	McQueen, Joan.....	Vancouver
Manson, J. Robert.....	Ganges	Nash, Marygold V.....	North Vancouver
Margeson, John M. R.....	Trail	Neil, Kingsley C.....	Vancouver
Martinoff, Ivan.....	Steveston	Newitt, Roland MacR.....	Vancouver
Marzocco, Aldo.....	Kimberley	Nichols, David R.....	Vancouver
Mason, Ernest.....	Trail	Nicolson, Phyllis R.....	Milner
Mather, M. Alice.....	Vancouver	Nishioka, George.....	New Westminster
Matheson, A. MacKenzie.....	New Westminster	Noguchi, Kichii.....	Vancouver
Matheson, Claudia V.....	Vancouver	Nose, Roy H.....	Vancouver
Mathews, Paul R.....	Hollyburn	Novikoff, Morris.....	Vancouver
Matthew, Beverley R.....	Vancouver	Nundal, Elford L.....	Langley Prairie
Melvin, James T.....	Vancouver	Oastler, John W.....	Vancouver
Meredith, Thomas W.....	Vancouver	Obokata, Arthur.....	Vancouver
Millerd, Lenora F.....	Vancouver	Okuno, Shigekazu.....	Vancouver
Mitchell, Ardis L.....	Vancouver	Olson, E. Robert.....	Hope
Moffatt, A. Sheila.....	Brighouse	Orr, Alexander G.....	Vancouver
Mollard, Margaret E.....	Vancouver	Oughton, J. Melvin.....	Vancouver
Monahan, Arthur R.....	Vancouver	Painter, Joan M.....	Campbell River
Moodie, Marcella E.....	East Kelowna	Palmer, Russell E.....	Vancouver
Moore, William A.....	Cranbrook	Parker-Jervis, Noel J.....	Vancouver
Morton, Betty H.....	New Westminster	Parliament, J. Harvey.....	Vancouver
Motherwell, Victor G.....	Vancouver	Parnum, Shirley L.....	West Vancouver
Moxon, John O.....	Vancouver	Paterson, Malcolm B.....	Vancouver
Moyls, Amy C.....	Vancouver	Paul, N. Jane.....	Vancouver
Mullett, Lorne R.....	Vancouver	Paul, Rachel M.....	Vancouver
Munro, Elspeth C.....	Vancouver	Payne, Robert L.....	Vancouver
Munro, Mae.....	Britannia Beach	Perry, Lorne G.....	West Summerland
Murphy, Marion E.....	Vancouver	Peter, L. Gwendoline.....	Vancouver
Murray, Robert N.....	Yahk	Peyman, R. Alastair D.....	Vancouver
Murray, W. James.....	West Vancouver	Phillips, Mary E.....	Vancouver
MacBride, Mary E.....	Whitehorse, Yukon	Physick, Morris C.....	Vancouver
McBride, W. Edward.....	Vancouver	Pickin, Ruth.....	Vancouver
McBurney, S. Lorne.....	Langley Prairie	Pidgeon, Edward.....	Vancouver
McCallum, Norma R.....	Vancouver	Piercy, Earle W.....	Courtenay
McCay, James.....	Vancouver	Pitman, Duncan L.....	Prince George
McCormick, Elizabeth M.....	Vancouver	Potts, B. Donald.....	New Westminster
McCutcheon, John O.....	Vancouver	Proud, Frank M.....	Vancouver
McDiarmid, Betty M.....	Vancouver	Prowse, D. Jean.....	Nanaimo
Macdonald, John L.....	Vancouver	Purslow, John E.....	Vancouver
McDonald, Olive E.....	Brighouse	Pyle, Robert G.....	Vancouver
McDonnell, Dorothy M.....	Vancouver	Racey, K. Alan.....	Vancouver
McEachern, Florence I.....	Coalmont	Randle, Jack H.....	Vancouver
MacEwen, E. Bruce.....	New Westminster	Reston, Agnes D.....	Vancouver
Macfarlane, Gordon B.....	Vancouver	Rivers, David E.....	Vancouver
MacGregor, Marjorie E.....	Vancouver	Robinson, Dennis E.....	Hardisty, Alta.
McGuire, Michael K.....	Vernon	Robinson, K. Estelle.....	Chilliwack
MacIntosh, Audrey MacR.....	New Westminster	Robinson, Ruth M.....	Grantham's Landing
McIntosh, John K.....	Vancouver	Rome, Alexander H.....	Vancouver
McKee, Jean MacK.....	Vancouver	Roussel, David M.....	Agassiz
McKelvey, William W.....	Fort St. James	Rowell, Florence V.....	Vancouver
MacKenzie, Effie M.....	Vancouver	Ruardi-Wichers, Maria W.....	Vancouver
McKinlay, John A.....	Vancouver	Rutherford, Beth.....	Vancouver
McLagan, Muriel.....	Vancouver	Rutter, Raymond H.....	Vancouver
McLauchlan, Wilfred R.....	Grand Forks	Ryan, Doreen E.....	Vancouver
Maclea, Charles A.....	Vancouver	Ryan, John G.....	Nanaimo
McLean-Bell, Janet M. G.....	North Vancouver	Salt, Lionel H.....	Vancouver
McLeod, R. Raymond.....	Rossland	Sandhu, Mehar Singh.....	Vancouver
McMahon, M. Patricia.....	Vancouver	Sasaki, Frederick Y.....	Vancouver
McMaster, William J.....	Vancouver	Schiedel, Ian H.....	Vancouver
McMorris, Mary J.....	Ft. Lewis, Wash.	Scott, Patricia R.....	Vancouver
McMurtrie, Enid C.....	Vancouver	Segal, Louis.....	Calgary, Alta.
McPherson, Douglas C.....	Vancouver	Shatford, Ashley R.....	Vancouver
MacQuarrie, Alexander B.....	Vancouver	Shewan, Robert G. H.....	Burnaby
McQueen, F. E. Mae.....	Vancouver	Shimotakahara, Katherine S.....	Vancouver
		Shinobu, Roy.....	Vancouver
		Shiozaki, D. Fumiaki.....	Vancouver
		Sinclair, Christina C.....	Britannia Beach

FACULTY OF ARTS AND SCIENCE—FIRST YEAR—(Continued).

Name	Home Address	Name	Home Address
Sleath, George E.	New Westminster	Vandt, David	Vancouver
Smith, Alexander F.	Vancouver	Vaughan, Wilbur S.	Vancouver
Smith, Barbara E.	Vancouver	Venini, Mary J.	Vancouver
Smith, Frank F.	Kimberley	Vernon, E. Kenneth	Hollyburn
Snyder, Russell P.	Vancouver	Vickers, G. Peter	Vancouver
†Sogi, Kiku	Nishinomiya, Japan	Vickery, Philip A.	North Vancouver
Somers, Irene I.	New Westminster	Wainwright, John W.	Abbotsford
Sparrow, M. Joan	Hollyburn	Walker, Douglas L.	
Stamatias, Dorothy M.	Vancouver		New Westminster
Stamatias, George	Vancouver	Wallace, Billie	Vancouver
Steeves, Hugh D.	Vancouver	Wallace, Gordon G.	Vancouver
Steeves, Irene S.	Powell River	Wallace, Jessie M.	Powell River
Steeves, Rita L.	Vancouver	Wallace, W. Spencer C.	
Stewart, Harold C. E.	Vancouver		New Westminster
Stewart, Priscilla E.	Port Coquitlam	Wallis, Jean F.	Shanghai, China
Stinson, James C.	Vancouver	Walsh, John W.	Vancouver
Stopherd, John M.	Vancouver	Warrack, Beryl E.	Ladner
Sturdy, Donald D.	Vancouver	Warren, Edith F.	Vancouver
Stusiak, Michael	Powell River	Watts, James D.	Vancouver
Sungha, Singh Darsham	Vancouver	Watts, Mildred F.	Ladner
Sutherland, Ernest J.	Vancouver	Weaver, William A.	Vancouver
Sutton, Edward A. B.	Powell River	Webb, Eva	New Westminster
Swan, Denis L.	Vancouver	Weed, Joseph D.	Vancouver
Sweeney, Maxwell P.	Ocean Falls	Weiner, Harry S.	Vancouver
Tabata, Minoru	Vancouver	Wells, A. Earl	Penticton
Takahashi, Yoshito	Steveston	White, Ronald J.	Vancouver
Takimoto, Kimiko	Vancouver	Whyte, Robert S.	Vancouver
Tanner, Harold E.	Smithers	Williams, Donald E.	North Vancouver
Taylor, Margaret L.	Vancouver	Williams, F. Campbell	Nanose Bay
Teagle, Ernest E.	Vancouver	Williamson, Kenneth Pender	Harbour
Teagle, Mary Ann	Cleveland, Ohio	Willis, Thomas G.	Keremeos
Thomas, G. Phil	Vancouver	Wilson, David R.	Vancouver
Thomas, J. P. Wallace	Vancouver	Wilson, Ross	Vancouver
Thompson, Joan C.	Vancouver	Wilson, Susan M.	Langley Prairie
Thompson, Joan M.	Hollyburn	Wismer, Shirley	Vancouver
Thomson, Dorothy	Vancouver	Wood, Gerald R.	Vancouver
Thomson, Stanley G.	Vancouver	Wood, Kathleen M.	New Westminster
Tornroos, Alfred H.	Vancouver	Woodward, Helen M. E.	Vancouver
Townsend, John A.	Vancouver	Wuest, Walter E. L.	
Tsujimura, Koichi	Vancouver		New Westminster
Tuck, Montague D.	Vancouver	Yamashita, George S.	Vancouver
Tuddenham, Norman G.	Vancouver	Yates, R. S. Joy	Vancouver
Turner, A. William	Vancouver	Yip, Cecil E.	Vancouver
Twiss, Mary	Vancouver	Yorston, Margaret St. J.	
Underhill, Anne B.	Vancouver		Australian P.O.
Uyenobu, Kenzie	Vancouver		

SECOND YEAR

Full Undergraduates

Akaye, Hiroshi	Woodfibre	*Bartlett, Phyllis L. M.	Vancouver
*Allen, J. Garth	Vancouver	Barton, Norman	Vancouver
*Anderson, Jack McG.	Vancouver	Beale, Mary L.	Vancouver
Angus, Milton W.	Vancouver	Beaton, Mary	Vancouver
Aoki, Tetsuo	Vancouver	*Beaumont, Leys M.	Vancouver
Archibald, Douglas North	Vancouver	Bennett, Norman T.	Vancouver
Armstrong, Edith G.	Vancouver	Bergklint, L. Robert	Vancouver
Ashby, M. Joan	Harrop	*Bessette, Gordon	Vancouver
Asselstine, Mona E.	Fernie	Bezer, John M.	New Westminster
*Avery, George McK.	Vancouver	Bibbs, Patricia G.	Vancouver
Badger, Elizabeth McN.	Vancouver	Bishop, Harry E.	Vancouver
Bain, Archibald C.	Vancouver	Bjarnason, Val	Vancouver
Balfour, Elizabeth M.	Vancouver	Bolduc, Betty D.	Vancouver
Ball, Enid D.	Penticton	Braun, William	Vancouver
Ballard, Alfred C.	Vancouver	*Bridge, Tom	Vancouver
Barclay, William R.	Vancouver	*Brock, Douglas H.	Vancouver
Barnett, Margery L.	Vancouver	Brown, Lillian H.	Ocean Falls

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—SECOND YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Brown, Victoria J.	Vancouver	Duncan, Morris R.	Michel
Brown, W. Robert	Vancouver	Dunell, George E.	North Vancouver
Browne, Edith M.	Vancouver	Dunlop, Elizabeth	Vancouver
Browne, Joan F.	New Denver	Dunlop, Ruth A.	Vancouver
Bruce, Joan I.	Vancouver	Durkin, D. Osborne	Vancouver
Bruce, Nancy L.	Vancouver	Durkin, L. Stanley	Vancouver
Bryan, David B.	Lynn Creek P.O.	Eberts, James McE.	Victoria
Buckland, Donald C.	New Westminster	*Edmonds, David F. D.	Vancouver
Bunnell, Grace E.	Vancouver	Elliott, Frederick N.	Vancouver
Burgess, Margaret A.	Vancouver	Ellis, E. Norman	Vancouver
Burnett, Catharine L.	Vancouver	Emerson, Bruce E.	Vancouver
Caldwell, I. Frances	North Vancouver	English, Moira L.	Vancouver
Cameron, James G.	Victoria	Esson, William B.	Rosetown, Sask.
Campbell, William E.	West Vancouver	*Evans, Kathleen E.	Vancouver
Carr, Nancy	Vancouver	Fairbank, Ethel	Harrop
Carter, Joyce G.	Vancouver	Fairleigh, Constance M.	Vancouver
Cavers, James K.	Vancouver	*Farina, Alfred J. O.	Vancouver
Chan-Kent, Robert	Vancouver	*Fergusson, Donald N.	Vancouver
Chapman, Lloyd H.	Vancouver	Filmer-Bennett, Gordon	Vancouver
*Charlton, William J.	Vancouver	Filteau, John F.	Calgary, Alta.
*Charters, James	Vancouver	Finlayson, Jean K.	Okanagan Landing
Charters, John A.	Vancouver	Fleishman, Neil M.	Vancouver
Chatwin, Leonard W.	Vancouver	Fletcher, Johnson K.	Hatzic
Child, Colin G.	Vancouver	Foster, Raymond E.	Vancouver
Clark, Robert M.	Vancouver	Fouks, Arthur	Vancouver
Clarke, Chummer B.	Vancouver	Fraser, Patricia C.	Flin Flon, Man.
Cliff, Harold N.	Vancouver	Frazee, James L.	Vancouver
Coady, Teresa J.	Vancouver	Freeman, Victor J.	Vancouver
Colwell, Bryan C.	Port Simpson	French, Eleanor I.	Penticton
*Colwell, Donald W.	Rosetown, Sask.	*Frith, Austin F.	Vancouver
Combolos, Theodora	Vancouver	*Frith, Norma C.	Vancouver
Cools, Evelyn M.	Okanagan Centre	Frost, E. Isobel	Kamloops
Copp, Stanley S.	Vancouver	Fulton, Rupert	Prince Rupert
Cowan, T. Archie	Vancouver	Galbraith, Marjorie L.	Medicine Hat, Alta.
Crawford, John A.	Vancouver	Galpin, Esther L.	Vancouver
Crofton, Francis D. L.	Ganges Harbour	Gardiner, Alexander H.	Vancouver
Crone, Thomas H.	Vancouver	Gardiner, Valerie	Vancouver
Crute, Margaret C.	North Vancouver	Gathercole, Patricia M.	Vancouver
Cuthbert, Grace I.	Websters Corner	Gillespie, Wallace P.	North Vancouver
Daem, Rose F.	Vancouver	Gillis, Sheila	Merritt
Dallamore, Verne H.	New Westminster	Gilmore, C. M. Marie	Vancouver
Daniels, Dorothy M.	New Westminster	Gitterman, Sidney L.	Vancouver
*Dashwood-Jones, Edmund	New Westminster	Glen, John E.	West Vancouver
Daunt, Acton F.	New Westminster	Glen, Mary E.	Vancouver
*Davidson, James	Vancouver	Glen, William R.	Vancouver
Davis, John A.	Kimberley	Goodwin, Walter H.	Vancouver
Davis, Mervyn	Vancouver	Gordon, Hugh W.	Shanghai, China
Dearing, Ina	Burnaby	Grace, Alice M.	Vancouver
Delany, Austin E.	Vancouver	Grant, Elsie A.	Vancouver
Dellert, Gunhild H.	Kimberley	Griffin, Barbara C.	North Vancouver
Dent, Robert J.	Vancouver	Griffiths, Marion W.	Vancouver
DesBrisay, Betty M.	Vancouver	Guiguet, Charles J.	Vancouver
Desjardins, Pit U.	Vancouver	Hall, Katherine U.	Vancouver
Devlin, Ruth M.	Vancouver	*Hamilton, W. Reg.	West Vancouver
Diether, Jack J.	Vancouver	Hardwick, Beatrice	Eburne
Dixon, William G.	Vancouver	Harmer, James C.	Vancouver
Docker, Geraldine P.	Walton-on-Thames, England	Harris, Louis	Vancouver
Dorrell, Douglas R.	Clinton	Harrower, John A.	Langley Prairie
Dougan, Aileen	Vancouver	Harvey, Ernest C.	Vancouver
Dowding, Gordon H.	Kamloops	*Haslam, Joan	Roberts Creek
*Drysdale, Alistair J.	Vancouver	Hauger, Alice C.	Dawson Creek
Duncan, Marjorie E.	Vancouver	*Hawkins, Dorothy I.	Vancouver
		Hayward, Chester G.	Kamloops
		*Heading, John B. E.	New Westminster

*Conditioned.

FACULTY OF ARTS AND SCIENCE—SECOND YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
*Henderson, M. Elizabeth P.		*Millar, Ruth W.	Vancouver
Henry, John M.	Cloverdale	*Moody, Donald B.	Hatzic
*Herd, Ben C.	New Westminster	Morris, Arthur	Trail
Herring, Philip S.	Scapa, Alta.	Morris, Joyce K.	Penticton
Hewitt, Gordon B.	Vancouver	Morris, Margaret C.	New Westminster
Heyer, E. Ruth	Vancouver	Morris, Robert J. D.	Nelson
Hill, Jean McC.	West Vancouver	*Muir, Elizabeth A.	Vancouver
Hird, Dorothy M.	Vancouver	Murdoch, William	Vancouver
Hooley, Elsie E.	Vancouver	Muttart, Mary	Vancouver
Hopwood, Victor G.	Vancouver	McCammon, Dorothy	Burnaby
*House, Frederick W.	Vancouver	McCarley, John S.	North Vancouver
*Howard, Gerald V.	Vancouver	McClellan, Frances A.	Vancouver
Humfrey, Frances E.	Vancouver	*McCorkell, Beverly G.	Vancouver
Hurdall, Florence MacG.	Chilliwack	MacDermot, Derek H. A.	Vancouver
Hutchinson, G. Ruth	Vancouver	*MacDonald, Helen M.	Nanaimo
Hutchison, George T.	Vancouver	McDonald, Leslie M.	Aldergrove
Hyslop, Mary I.	Vancouver	Macdonald, Margaret H.	Nanaimo
Inkster, W. Harcus	North Vancouver	*McDonough, Donald	Vancouver
Izen, Benjamin	Vancouver	McDowell, Thomas A.	Vancouver
Jack, Marjorie H.	Hatzic	McEwen, Jack H.	Vancouver
Jackson, Roy V.	Creston	Macfarlane, A. Lorna M.	Vancouver
Jagger, Kathleen	West Vancouver	MacFayden, R. Duncan	Vancouver
James, Morton S.	Vancouver	*McGhee, William P. T.	Port Alice
Johnson, William J.	Vancouver	*McGill, Donald A. C.	Vancouver
Johnston, William L.	Chilliwack	MacInnes, G. Elisabeth	North Vancouver
*Jones, Elmer J.	Chilliwack	*MacKay, Hector R.	Vancouver
Kato, Kiyoshi	Vancouver	*McKay, Katherine M.	Vancouver
Kawaguchi, Hiroshi	Cumberland	McKee, George E.	Vancouver
Kemper, F. Dean	Britannia Beach	MacKenzie, Alma A. J.	Vancouver
Kennedy, Ernest F.	Vancouver	MacKenzie, Verna C.	Vancouver
Kerr, Donald P.	Vancouver	McKinnon, Elaine K.	Vancouver
*Kidd, Cleve W.	Sudbury, Ont.	McLean, Donald A.	Vancouver
*Kidd, Stuart J.	Nordeg, Alta.	*McLean, Elsie M.	Vancouver
Kilbank, Sidney C.	Vancouver	McLennan, John A.	Vancouver
Killam, David A.	Vancouver	McLeod, Ellis L.	Vancouver
Killip, Grace W.	Vancouver	MacLeod, John K.	Vancouver
Kirby, George H.	Nelson	*McLeod, John M.	Trail
*Kirkpatrick, James B.	Ottawa, Ont.	McLeod, John N.	West Vancouver
Kloepfer, Jacqueline	Vancouver	McMichael, Gladys E.	Vancouver
Knowles, Alfred P.	Grand Forks	McMillan, Rod	Vancouver
*Lamb, Thomas A.	Vancouver	McMorran, A. Stewart	Vancouver
Lamont Havers, Ronald W.	Vancouver	MacPhee, Angus	Vancouver
Lane, George C. R.	North Vancouver	*MacRae, Alexander J.	Caulfeild P.O.
Laronde, Harry D.	Crescent	McTaggart, Kenneth C.	Vancouver
*Lawrence, Frank T.	Burnaby	McTavish, Peter J.	Vancouver
Leung, Wah	Vancouver	Nash, Andrew J.	Vancouver
Lock, Janet W.	New Westminster	Nelson, Gertrude L.	Ladysmith
Logan, Barbara R.	Cowichan Station	*Nelson, Thelma A.	Vancouver
Long, Charles F.	Vancouver	*Newby, M. Elleen	Vancouver
*Long, Joseph D.	Vancouver	Nichols, Alva E.	Vancouver
Lumsden, Harold D.	Vancouver	Nichols, Edward M.	Rossland
Magar, William L.	Vancouver	Nicholson, Paul J.	Vancouver
*Malone, Mary A.	Melville, Sask.	Nicol, Eric P.	Vancouver
Marchanton, Eileen O.	Vancouver	Nikaido, Harry	Vancouver
Margetts, Edward L.	Trail	*Norcross, Iris H.	Vancouver
Marples, E. Geoffrey	Invermere	*Norris, Mary F.	Vancouver
Marr, William L.	Murrayville	Nowlan, Helen L.	Vancouver
Marshall, Robert A.	Calgary, Alta.	Okamura, Cana	New Westminster
Martin, Doreen B.	Vancouver	Oldfield, H. J. Herbert	Royal Oak
Martin, Nancie B.	Vancouver	Osborne, William M.	Medicine Hat, Alta.
Mathewson, Peter S.	Vancouver	Pallas, Theodore	Vancouver
Mattu, Ranjit S.	Vancouver	Parks, John	New Westminster
Meighen, Molly	Kamloops	Pearce, Joseph M.	Vancouver
Menzies, M. Albert	Vancouver	Pearse, Allen F.	North Vancouver
Metford, L. Jacques S.	Salmon Arm	Pendleton, Frank H.	Red Gap
Middleton, Frederick T.	Vancouver	Pethick, Derek W.	Royal Oak
*Millar, Ian D.	Vancouver		

*Conditioned.

FACULTY OF ARTS AND SCIENCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
*Physick, Arthur T. J.	Vancouver	Sullivan, Lucy Jane	Vancouver
*Pickard, Murray K.	Vancouver	Takeda, Hiroshi	Woodfibre
Pickering, Eunice F.	Vancouver	Tanabe, Luke Y.	Vancouver
*Pon, Lemuel	Vancouver	Thomas, M. Elizabeth	Vancouver
Powell, George E.	Summerland	Thomson, Jean I.	Kimberley
Preston, Daphne E.	Victoria	Thomson, Vivian D.	Vancouver
*Proven, Anna M.	Vancouver	Todd, Douglas	Vancouver
Pullen, Mary E. J.	Vancouver	Touhey, William B.	Britannia Mines
*Rader, Ines J.	Vancouver	*Trenholme, Amy V.	Vancouver
Rees, Harvey F.	Vancouver	*Underhill, J. Edward L.	Vancouver
Reifel, Audrey M.	Vancouver	Urquhart, Alexander N.	Vancouver
*Rhodes, Ursula	West Vancouver	Usher, Marjorie V.	Vancouver
Ritchie, David MacD.	Vancouver	Uyeno, Kazuma	Vancouver
Robertson, B. Elaine	Vancouver	*Vance, Robert A.	Vancouver
Robinson, Thomas J.	New Westminster	*Van Houten, C. William	Vancouver
Robson, Thomas C.	Hollyburn	Vesterback, Brita H.	Aldergrove
Roddan, Andrew	Vancouver	Walker, Janet C.	Haney
Ross, Lloyd G.	Aldergrove	*Warden, Vida M.	Vancouver
Roy, Elsie	Vancouver	*Warne, Hortense	Vancouver
Rudkin, Wilfred A.	Vancouver	Watanabe, Satoru	Duncan
Rutherford, Robert J.	Cumberland	Watson, William E.	Carcross, Yukon
Sage, F. Margaret	Vancouver	Watt, Douglas C.	Hollyburn
Sanmiya, Tatsuo	Vancouver	Webb, Frances E.	Vancouver
Schofield, Mary-Lenore	Vancouver	Weldon, Charles C.	Grenfell, Sask.
Schuthe, George M.	Vancouver	Weldon, Josephine W.	Vancouver
Scott, Hazel D.	Vancouver	Wellington, William G.	Vancouver
Scott, Robert W.	Sardis	West, John G.	Vancouver
Scott, Ruth P.	Vancouver	Westby, Mona S.	Vancouver
Seldon, Ruth McL.	Vancouver	Westlake, Dorothy	Taber, Alta.
Selkirk, Lorris E. N.	Tranquille	White, Barbara M.	Vancouver
Shannon, Barbara	Vancouver	White, William A.	Stave Falls
Sheffield, James O.	Vancouver	Wiggs, Frank R.	Vancouver
Shimo-Takahara, George	Vancouver	Wightman, Walter B.	Vancouver
Shives, Arnold B.	Vancouver	Wilbur, Gertrude L.	Vancouver
Skae, Kathleen	Vancouver	Wilson, Douglas M.	Vancouver
Skelding, Haddon	Vancouver	Wilson, Richard A.	Vancouver
*Skinner, Louise McM.	Vancouver	Wilson, Ruth P.	Vancouver
Sloan, William R.	Kelowna	Wolfe, Pierre M.	Shanghai, China
Smallwood, Eileen F.	West Vancouver	*Wolverton, Harold G.	Vancouver
Smith, Nancy MacK.	Vancouver	*Woodruff, R. John	Powell River
Smith, Norman B.	Nelson	Woodside, Lloyd A.	Vancouver
Snider, Phillip	Vancouver	Worthing, Margaret A.	Woodlands
Southin, Adrienne R.	Vancouver	Worthington, Elizabeth L.	Vancouver
Stewart, Elizabeth J.	Vancouver	Wyard, Jack B.	North Vancouver
Stott, Isabel G.	Vancouver	*Yamada, Fujiyoshi	Vancouver
Straith, Helen M.	Courtenay	Yamaoka, Setsu	Vancouver
		Young, Frank R.	Revelstoke
		Young, Thomas McL.	West Summerland

THIRD YEAR

Full Undergraduates

Adamson, Penelope R.	Victoria	Barton, Edgar C.	Vancouver
Affleck, John K.	Fruitvale	Barton, William H.	Vancouver
*Aicken, Alex C.	Vancouver	Bescoby, Hazel-Jean	Vancouver
Alexander, Ernest A.	Vancouver	Birmingham, Verna	Vancouver
Alexander, Margaret H.	Vancouver	Birnie, Elizabeth H.	Vancouver
Anderson, V. Jean	Vancouver	Bjarnason, Emil G.	Vancouver
Armstrong, John J.	Victoria	Bloch, Verna M.	Vancouver
Atkins, David N.	Norwich, Ont.	Boardman, Harold	Kimberley
Avis, Barbara L.	Vancouver	Booth, Kenneth G.	Vancouver
Bailey, Thomas	Keighley, Yorks, England	Borelli, James V.	Fernie
Baker, Donald C. B.	Vancouver	Boyd, Annetta McT.	Vancouver
*Baker-Fleck, Elizabeth	Vancouver	Boyd, Eleanor G.	Vancouver
Banford, Pauline E.	New Westminster	Braidwood, Darrell T. B.	Vancouver
		*Branson, Thomas L. C.	Mexico City, Mexico

*Conditioned.

FACULTY OF ARTS AND SCIENCE—THIRD YEAR—(Continued)

Name	Home Address	Name	Home Address
Brason, Frederick W.	New Westminster	Gray, R. Hampton	Nelson
Bremner, Moira C.	Vancouver	*Greyell, E. Melville	Agassiz
Bricker, Marion A.	Vancouver	Gwyn, Alan S.	Duncan
Brown, James B.	Vancouver	*Hann, Helen M. E.	Vancouver
Brown, M. E. Monica B.	Vancouver	Hardman, Jack G.	Revelstoke
*Burgess, W. Norman	Powell River	Harvey, M. Joyce	Victoria
Busby, Constance I.	Vancouver	Henderson, W. S. Patrick	Pendleton, Ore.
Bush, Irene B.	Rutland	Hewitt, Katherine B.	Vancouver
*Butchart, W. Kenneth	Vancouver	*Heyer, Mary	Vancouver
Butler, Enid L.	Vancouver	Hicks, Albert R.	Cumberland
Butters, M. Elizabeth	Vancouver	Hidaka, Kunio	Whonnock
Campbell, Ethel J.	Vancouver	Hollenberg, Shirley F.	Vancouver
Campbell, Henry C.	Vancouver	Horn, Patricia H.	Vancouver
*Campbell, John C.	Vancouver	Hunter, Douglas L.	Vancouver
Carroll, Anne E.	Watford, Ont.	Hunter, Mona D.	Wenatchee, Wash.
Carter, Nesta A.	Vancouver	Hutchinson, Shellah D.	North Vancouver
Caydzien, Esme C.	Vancouver	*Hutton, Dorothy C.	Vancouver
Chapman, V. Lennie	Victoria	Inglis, Alan M.	Gibson's Landing
Churchill, Dennis M.	Vancouver	Jamieson, Florence T.	New Westminster
Clark, Alexander	Vancouver	Jenkins, Irene M.	Vancouver
Clark, Richard J.	Vancouver	Jeremy, Ann H.	Vancouver
*Clark, Sidney H.	Prince George	Johnson, Carl P.	Squamish
Clarke, Alda B.	Penticton	Johnston, E. Lorraine E.	Vancouver
Clarke, Eleanor M.	Victoria	*Johnston, Jean E.	Vancouver
Cochrane, Joseph S.	Victoria	Jones, Dorothy May	Victoria
Cole, Betty J.	North Vancouver	Keatley, Patrick C.	North Vancouver
Colledge, William W.	Vancouver	Keel, Eileen R.	New Westminster
Collins, Adrienne E.	Vancouver	Kennedy, Charles D.	Naramata
Collins, Rosemary R.	Vancouver	*Kennedy, Josephine C.	Vancouver
Cooper, Joyce E. Prince Albert, Sask.		*Kerr, S. Aubrey	Vancouver
Daunt, Henry T.	New Westminster	*Kier, Elden W.	Vancouver
Delamont, Mervyn W. H.	Vancouver	King, Barbara C.	Vancouver
Deloume, Fernand E.	Cobble Hill	*Knox, A. William D.	Kelowna
desBrisay, Helene	Vancouver	Lamb, Bessie	Vancouver
Devlin, Budd J.	Vancouver	Lang, Alexander C.	North Vancouver
Dickinson, Margaret	Vancouver	Leamy, Peter J.	Vancouver
*Dier, Ormond W.	Port McNeill	*Lepsoe, Gunnar	Trail
Dixon, Harold F.	Victoria	Lew, Hin	Vancouver
*Dobson, G. Norma	Vancouver	Lloyd, Denys C.	Duncan
Doherty, Norah	Murrayville	*Lucas, Alexander	Vancouver
*Dorchester, John E. C.	West Vancouver	Lyttleton, Hugh A.	Vancouver
*Douglas, Gordon C.	Vancouver	*MacKend, Howard W.	Vancouver
Doyle, Anthony D. M.	Vancouver	Mackie, William H.	Vancouver
Eaton, Ethel M.	Vancouver	*Marshall, William O.	Victoria
Ewen, Jack S.	New Westminster	*Matheson, Daniel J.	Victoria
*Ferguson, Violet O.	Vancouver	*Mathisen, Martin M.	Vancouver
Findlay, Margaret M.	Lake Cowichan	Mercer, Jack E.	West Vancouver
Fleck, Janet S.	Vancouver	Milsom, Douglas D.	Vancouver
Fleming, Marion K.	Vancouver	*Milsom, Geoffrey H.	Vancouver
Flemming, Helen	Medicine Hat, Alta.	Mitchell, Frank H.	Vancouver
Fletcher, Eric MacG. R.	Thurlow	Mitchell, Leonard	Vancouver
*Forrester, Douglas W. R.	Wadsley P.O.	Moe, John G.	Vancouver
Fox, Geoffrey E. N.	Vancouver	Momose, Yoshiko V.	Vancouver
Fox, Priscilla I.	Vancouver	Montgomery, Richard A.	Vancouver
Fraser, Emily A.	Vancouver	Moon, James H.	Watford, Ont.
*Freeman, Lewis A.	Rosslund	Moore, Victor C.	Victoria
Fujiwara, M. Wesley	Vancouver	Morgan, Joseph F.	Vancouver
Galloway, Virginia	Vancouver	*Moxon, G. Elizabeth	Vancouver
Gardner, Joseph A.	Nakusp	Moyls, Benjamin N.	Vancouver
Garstin, Lawrence F. H.	Hartell, Alta.	Murphy, Margaret A.	Saanich
Gerow, M. June	Crescent Beach	Murphy, Mary	Vancouver
Glass, George E.	Vancouver	McArthur, Joan R.	Pitt Meadows
*Glass, Kenneth G.	Vancouver	Macaulay, Johnina M.	Vancouver
Gordon, S. V. Allen	Vancouver	McBean, R. Harold	Sardis
Gray, Gordon K.	Vancouver	McCallem, Allisen	Vancouver
Gray, Leslie T.	Trail	*McCartney, Daniel J.	Yahk

*Conditioned.

FACULTY OF ARTS AND SCIENCE—THIRD YEAR—(Continued)

Name	Home Address	Name	Home Address
McCully, Dorothy A.		*Salter, Audrey E.	Vancouver
McDiarmid, Maureen N.	Moose Jaw, Sask.	Sandall, M. Elizabeth	Saint John, N.B.
McDonald, John A.	Vancouver	*Sanford, Murray B.	Vancouver
MacDonald, June G.	Ashcroft	Scott, Edward W.	Vancouver
	New Westminster	Scott, Pauline I. L.	Vancouver
McDonald, Ruth E.	New Westminster	Sellens, Kathleen A.	Vancouver
McDougal, Barbara A.	Vancouver	Semple, Robert E.	Vancouver
	North Vancouver	Seto, Maysien G.	Vancouver
McGinn, Robert D.	Vancouver	Shaw, Kenneth N. F.	North Vancouver
MacInnes, Mary S.	North Vancouver	Sherratt, Dorothy M.	Vancouver
McIntyre, Robert F.	Vancouver	Sinclair, Evelyn B.	Vancouver
McKinnon, Alleen K.	Vancouver	*Sinclair, James S.	New Westminster
McLaughlan, Thomas A.	Chemainus	Sloan, Betty G.	Victoria
Maclean, Hilda I.	Vancouver	Sloan, Marion L.	Perth, Ont.
McLeod, Mary J.	Vancouver	Smith, Evelyn B.	Vancouver
McLeod, O. Jacquelin	Vancouver	Smith, Evelyn L.	Vancouver
McNeill, Margaret T.	Vancouver	*Smith, Robert	Vancouver
McPhee, Edward I.	Vancouver	Snow, Gertrude A.	North Vancouver
*McRae, Norman A.	Vancouver	Spring, Harry C. F.	Vancouver
Newell, J. Edward	Woodstock, Ont.	Staghall, Hattie R.	Comox
Nishi, Frederick I.	Steveston	*Stamatis, Christopher T.	Vancouver
Nottingham, A. Miles	Vancouver	Stewart, Donald D.	Vancouver
	New Westminster	Stewart, Elizabeth A.	North Vancouver
†Oesterle, Alfons	Karlsruhe, Germany	*Stradiotti, Henry	Vancouver
Ogilvie, George F.	Vancouver	Straight, Byron W.	Vancouver
Ozaki, Tam T.	Vancouver	*Straight, Leland R.	Vancouver
*Ozeroff, W. John	Shoreacres	*Strong, St. Clair G.	Vancouver
†Pao, Johnson S.	Vancouver	Strongitharm, Edward D.	North Vancouver
Patten, Charles G.	Chilliwack	Swan, Flora McK.	Nanaimo
Paul, Arthur B.	Vancouver	*Sykes, Paul J.	Vancouver
Pearson, Jean E.	Vancouver	Taylor, Frederick H. C.	Kelowna
Pellant, Ernest R.	Vancouver	Thompson, Margaret K.	Vancouver
*Perry, Frank S.	Vancouver	Thwaites, John B.	Vancouver
Petrie, William	Victoria	*Tolmie, William T.	Drumheller, Alta.
Phare, Stewart	Hatzic	Townsend, Eric A.	Victoria
Philpot, Dorothy J.	Cranbrook	Trapp, Nell	New Westminster
Pollock, Norma M.	Vancouver	Turnbull, Doris H.	Lumby
Primrose, Neil	Vancouver	*Turner, Gordon H.	Vancouver
Pronger, Lester J.	Vancouver	*Turnill, Eric S.	Vancouver
Pullinger, Percy B.	Vancouver	Twiss, Mildred A.	Vancouver
Pyle, Donald G.	Vancouver	Vincent, Honor E.	Peachland
Quigley, John M.	Vancouver	*Warne, John W.	Vancouver
Ralph, Joyce E.	Vancouver	*Weaver, Kenneth S.	Port Alberni
Randall, Lillian M.	Powell River	Weiss, Rose	Vancouver
Rattenbury, John A.	Powell River	White, Moira M.	Vancouver
Richards, Basil T.	Victoria	*White, Richard O.	New Denver
Richardson, Arthur G.	Vancouver	Whitelaw, Margaret E.	Vancouver
Richardson, Noel L.	Vancouver	*Wickett, W. Percy	Victoria
Riley, Kathleen	Victoria	Williams, Ruth E.	Vancouver
*Ritchie, Shiela R. J.	Vancouver	*Williams, Thomas C.	Vancouver
Robertson, Margaret	Powell River	*Wilson, Lloyd H.	Vancouver
Robertson, William A.	New Westminster	Wilson, L. Roberta	Vancouver
Robinson, H. Basil	Vancouver	Wilson, Sheila	Vancouver
Robinson, J. Lewis	Windsor, Ont.	Worth, Douglas H.	Vancouver
*Ruddock, Bernard B.	Vancouver	Wright, Helen L.	Vancouver
Rush, Jack T.	Vancouver	Wright, Irene M.	Vancouver
Ryan, Nora	Sardis	Wyllie, Stewart	New Westminster
*Sadler, Evelyn E.	Vancouver		
Sage, W. Donald MacK.	Vancouver		

COMMERCE

Byers, Archie McA.	Vancouver	Cowan, Maisie B.	Vancouver
Campbell, Ewan D. K.	North Vancouver	Dale, Harold E.	Vancouver
Cosulich, Cecil S.	Vancouver	Day-Smith, Lyman C.	Vancouver
		Downey, Patrick J.	Smithers

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—COMMERCE—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Dowrey, William R.	Vancouver	Pearson, John W.	Vancouver
Field, Harry F.	Vancouver	Quigg, John R.	Regina, Sask.
Gurry, Patrick E.	Vancouver	Rae, James A.	Chilliwack
Hoskins, Herbert C.	Vancouver	Ralph, Ken	Vancouver
Hudson, Alan G.	Victoria	Rand, Donald R.	Vancouver
Ide, Henry	Vancouver	Reed, Bernard	Vancouver
Jarvis, Richard J.	Cranbrook	Rita, Frank J.	Vancouver
Kincade, Robert M.	Vancouver	Robertson, David J.	Victoria
Lamont, R. Alexander	Vancouver	Robertson, Walter J.	Vancouver
Leblanc, Renee M.	Rosedale, Alta.	Scott, Grace L.	Victoria
Leckie, Roy J.	Vancouver	Smith, Frederick D.	Vancouver
Logan, W. Gordon	Vancouver	Stark, John E.	Vancouver
Mahood, Ian	Chilliwack	Stevenson, John H.	Vancouver
Martin, William B.	Campbell Island	Sweetnam, Allan G.	Vancouver
Minichiello, Armando P.	Vancouver	Tucker, Havelock J.	Vancouver
Morrow, David	Vancouver	Whittle, John C.	Vancouver
McLellan, William F.	Vancouver	Wilson, Leslie G.	New Westminster
McRae, Robert W.	Vancouver	Wilson, Robert A.	Vancouver
Oyama, Kazuhiko	Vancouver		

FOURTH YEAR

Full Undergraduates

Aitken, Janet L.	Vancouver	Carter, Evelyn M. C.	Victoria
*Aldous, John G.	Victoria	Cartmell, Clara E.	Chilliwack
Anderegg, Raymond V.	Victoria	†Cave-Browne, Genille	Victoria
*apRoberts, Robert P.	Vancouver	*Chowne, Audrey M.	Vancouver
Aqua, Sidney S.	Vancouver	Chutter, Patricia M.	Vancouver
Armitage, David H.	Creston	*Clark, Frank B.	Port Moody
Armstrong, C. Margaret	Vancouver	Clark, Fredrick H.	New Westminster
Ashford, Walter R.	Vancouver	Cosens, Miriam E.	Vancouver
Bain, Florence	Vancouver	Cummings, Dorothy P.	Vancouver
Bakhuys-Roozeboom, Denise	Burnaby	Darling, T. Graham	Vancouver
†Bannerman, Lloyd C. F. S.	Vancouver	Davidson, Richard H.	Westview
†Barrett-Lennard, Dacre L.	Vancouver	Day, Jessie	Vancouver
Barss, Ruth E.	Vancouver	Dean, Venie L.	Vancouver
Bastin, Hilary D.	Victoria	Deas, Margaret	Vancouver
*Baxter, Edna L.	Nanaimo	†Detwiler, Lloyd F.	Vancouver
*Beach, Albert M.	Vancouver	Dimock, Eva L.	Smithers
Bearce, Barbara V.	Nanaimo	Ducklow, Albert J.	Vancouver
Beattie, Roderick N.	Nelson	Dunbar, Hazel M.	Vancouver
*Beavan, Rodney	Burnaby	Duncan, Jean	West Vancouver
*Bedner, Anne M.	Vancouver	Eacrett, Mary G.	Mission City
*Belkin, Morris J.	Vancouver	Eastham, Helen M.	Vancouver
Bell, Robert E.	Ladner	Edwards, Frank J.	Cranbrook
Beresford, Dudley	Vancouver	Eedy, Winifred I.	Vancouver
Bishop, Ernest L.	Victoria	Ellis, W. Ivy	Vancouver
Boroughs, Robert J.	Vancouver	English, Sidney R.	Vancouver
*Bossy, Elinor M.	Vancouver	*Evans, Margaret A.	Vancouver
Boyd, Ottilie G.	Victoria	Ferguson, Alex N.	Ladysmith
Brand, Alison M.	Vancouver	*Ferguson, Byron L.	Vancouver
Brawn, James S.	Burnaby	Field, Marion C.	New Westminster
Bridgman, Stella M.	Vancouver	†Field, Winifred C.	Vancouver
†Brown, A. Bruce	Grand Forks	Findlay, Marjorie C.	Vancouver
Brown, Dorothy L.	Vancouver	Fisher, Herbert E.	Vancouver
Brown, Joanne V.	Vancouver	Fitch, Jean	Vancouver
Brown, Malcolm L.	Vancouver	Flook, Mildred S.	Vancouver
Burke, Eileen F.	Vancouver	Flower, R. Edward	Cranbrook
Burke, Herbert C.	Vancouver	*Ford, Douglas A.	Vancouver
Calhoun, Joyce N.	Tapen	Freed, D. Mary	Vancouver
Calnan, Wilfrid M.	Vancouver	†Freeland, Gertrude L.	Vancouver
Cameron, M. Joy	Vancouver	*Fulton, Clarence O.	Vernon
Carr, Catherine A. B.	Vancouver	Garrett, John S.	Victoria
Carter, Anne E.	Vancouver	*Gavin, Alice J.	Vancouver
		Godson, Warren L.	Victoria
		Grand, William H.	Chilliwack
		Grassie, Vernon R.	Duncan

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—FOURTH YEAR—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Griffin, F. Philip	Vancouver	Mostar, Roman	Vancouver
Grigsby, Faith	Vancouver	*Mottley, W. Douglas	Vancouver
Guiguet, Marcel J.	Vancouver	*Myers, John D.	Vancouver
Guthrie, John	Ladysmith	Macaulay, Archie M.	Vancouver
Guyett, Beatrice K.		McCabe, H. John	Victoria
	Port Fairy, Victoria, Australia	*McCann, Anna St. C.	Vancouver
Hall, Barbara McC.	Vancouver	McCarter, John A.	Vancouver
Harris, Iris G.	Vancouver	Macdonald, Alan S.	Vancouver
*Harris, Kathleen E. S.	Vancouver	Macdonald, Alex.	Vancouver
Harris, Lois M.	Victoria	McDougall, Robert L.	
*Harrison, G. Noel	Vancouver		North Vancouver
Harvey, Harry E.	Vancouver	McEwen, Lois S.	Vancouver
Hayman, Robert M.	Kelowna	†Macfarlane, James D.	Victoria
Healey, Beatrice E.		McGuire, J. Carson	Salmon Arm
	New Westminster	McIntyre, William J.	Vancouver
Hedde, Rognvald D.	Victoria	Maciver, Donald W.	Vancouver
Heisler, John P.	Vancouver	*McKellar, Janet	Vancouver
Henderson, Albert E.	Vancouver	Mackenzie, John M.	Oliver
Henderson, Robert W.	Courtenay	MacKenzie, Kathleen D.	Vancouver
Henmi, Elko	Victoria	MacKenzie, Margaret J.	
Herd, Thomas D.	Vancouver		New Westminster
*Hill, Lawrence E.	Victoria	†MacKenzie, Russell K.	Vancouver
Hind, John R.	Vancouver	*McKinnon, Elizabeth A.	
Holmes, Cicely E. F.	Victoria		New Westminster
Horne, Thomas P.	Victoria	*McLagan, Ross M.	Vancouver
Howatson, Charles H.	Vancouver	McLaren, John A.	Vancouver
Huddleston, Robert	Victoria	*McLellan, Margaret E.	Vancouver
Hunden, David J.	Cumberland	MacLeod, Margaret I. C.	Vancouver
Hunter, J. Lyall	Cloverdale	Macmillan, Richard B.	Victoria
Irish, E. J. Wingett	Hollyburn	McNair, Francis E.	Vancouver
Jenkins, Morgan	New Westminster	McNish, James G.	Vancouver
Jessup, Reg	Ocean Falls	McPhee, Howard McL.	Vancouver
*Johanson, Lillian V.	Vancouver	McRae, Jean E.	Vancouver
Johnson, Amuri R.	Vancouver	McTaggart, Donald E.	Vancouver
Johnston, D. Kathleen	Nanaimo	Nevison, Myrne B.	Vancouver
Jones, Elmer A.	Vancouver	Newton, Theodore D.	Vancouver
Jones, Frances P.	Vancouver	Nickerson, William J. M.	Vancouver
Keenlyside, Kathleen B.	Vancouver	Norie, I. Elisabeth S.	
Kemp, Doris E.	Vancouver		Cowichan Station
*Kenmuir, Patricia M.	Vancouver	*Patch, J. Frank	Vancouver
Kidd, George P.	Vancouver	Pepper, James M.	Victoria
Killip, Bessie H.	Vancouver	Pepper, Thomas P.	Victoria
Kinnaird, Jean S.	Vancouver	Perkins, Maurice F.	Vancouver
Kinney, Dorothy	Vancouver	Pierce, William G.	Vancouver
Kitchen, Alfred J.	Vancouver	Piercy, Helen W.	Vancouver
*Knox, Robert D.	Kelowna	†Pitman, Gertrude	Prince George
Large, Kelvin D. M.	Vancouver	Plaskett, Joseph F.	New Westminster
*Lean, Marjorie	Vancouver	Poole, John B.	Vancouver
Letham, B. Lucille	Vancouver	Poole, Robert V.	Vancouver
Leung, Ruth	Victoria	Purves, Ellen E.	Victoria
Lighthheart, Margaret L.	Vancouver	*Raphael, Harold G.	Vancouver
Lock, Arthur E.	New Westminster	*Reid, Adam	Newton
*Loftus, Frances M.	Vancouver	Reid, Marian M.	Vancouver
*Lowe, James	Vancouver	†Renwick, Norman T.	Vancouver
*Lui, Chak F.	Vancouver	Robertson, Robert F. S.	Vancouver
*Lunde, Magnus	Trail	Robertson, Struan T.	Victoria
Lynn, Shirley E.	Vancouver	Rome, Harold	Vancouver
Mackie, Geoffrey DeF.	Vernon	Rothstein, Norman L.	Vancouver
Manders, David F.	Vancouver	Rothstein, Samuel	Vancouver
Marshall, J. Kelso	Vancouver	Ryan, Mary	Vernon
Martin, Arthur L.	New Westminster	Sadler, Nancy	Vancouver
Martin, David D.	Vancouver	Saunders, Genevieve L.	Port Alberni
*Mason, Gerald	West Vancouver	Seldon, Janet L.	Vancouver
Matthison, C. Rann		Sellens, Edith J.	Vancouver
	New Westminster	Sharp, Alexander C.	Vancouver
Meredith, Jack R.	Vancouver	Shephard, Alfred H.	Vancouver
Miley, Hermon R.	Vancouver	Sibley, William M.	Vancouver
Mizuhara, Shaw	Vancouver	Simpson, Robert E.	Vancouver
Montgomery, Frances G.	Vancouver	Smith, Annette	Vancouver
Morris, Effie K.	Nelson	Smith, David B.	Nelson

*Conditioned.

†Partial.

FACULTY OF ARTS AND SCIENCE—FOURTH YEAR—(Continued)

Name	Home Address	Name	Home Address
Smith, M. Lorne.....	Sardis	*Trout, M. Ferne.....	Vancouver
Smith, Robert L.....	Vancouver	Truswell, Gloria E.....	Kelowna
Smith, V. Delle.....	Vancouver	Vance, John R. B.....	Vancouver
*Sones, W. Ernest.....	Pender Island	Vance, Marian S.....	Vancouver
Staples, Alan B.....	Kelowna	Volpe, Paul A.....	Abbotsford
Stewart, Caroline J.....	Vancouver	*Waddell, David B.....	Victoria
Stewart, Isabella M.....		Ware, Clifford A.....	Vancouver
	New Westminster	Wayles, Phyllis A.....	Vancouver
Stewart, Milton A.....	Mission City	West, E. Jean.....	Vancouver
St. John, Claire R.....	Vancouver	Whelan, Edgar B.....	Vancouver
Stordy, Jean C. C.....	Vancouver	*Whellams, Julius H.....	Kaslo
Stroyan, Edward G.....	Vancouver	Whiteford, Edith M.....	Nicola
Stuart, Frank A.....	Vancouver	Wilson, Reginald A.....	
Sullivan, Isabel M.....	Victoria		New Westminster
Swainson, Neil A.....	Victoria	Wright, Arthur B.....	Vancouver
*Swanson, Arnold L.....	Vancouver	Wright, Kenneth W. T.....	
Tambellini, Albert F.....	Fife		New Westminster
Thompson, Nora K.....	Vancouver	Younger, Marion J.....	Nelson
Toshach, Phyllis E.....			
	Drumheller, Alta.		

COMMERCE

Birmingham, Virginia S.....	Vancouver	Moore, John C.....	Eburne
Carter, David C.....	Vancouver	McCullough, Gordon H.....	Vancouver
Clarke, Arthur C.....	Vancouver	Macdonald, James B. L.....	Vancouver
Costello, J. Brooks.....	Vancouver	MacFayden, Jean W.....	Vancouver
Cruikshank, D. Gordon.....	Vancouver	Pratt, E. Doris.....	Vancouver
Darling, G. Dudley.....	Vancouver	Safarik, Edward J.....	Vancouver
Davidson, Robert J. H.....	Vancouver	Shepherd, George S.....	North Vancouver
Doughty, John H.....	Trail	Skaling, Betty D.....	Vancouver
Edmonds, W. Freth.....	Vancouver	Smith, Ralph A.....	Vancouver
Florillo, Erman N.....	Fernie	Smith, Robert C. R.....	Vancouver
Gibbs, Sheila M.....	Victoria	Sparkes, Edward M.....	Vancouver
Goldberg, Arnold.....	Vancouver	Thomson, James W. Moose Jaw, Sask.	
Green, John W.....	Victoria	Turner, Franklin J. E.....	Vancouver
Jagger, Stuart.....	Vancouver	Westlake, Margaret A.....	Taber, Alta.
Laidlaw, William A.....		Wilson, George S.....	Nanaimo
	West Summerland		

GRADUATES

FACULTY OF ARTS AND SCIENCE

Ainley, Patrick L.....	Vancouver	Dale, D. Ursula.....	New Westminster
Anderson, Frances M.....		Davidson, John F.....	Vancouver
	Langley Prairie	Davidson, Margaret H.....	Vancouver
Barss, Walter M.....	Vancouver	Davis, Edwin P.....	Vancouver
Bell, Donald K.....	Victoria	Dickie, Alfred G.....	Vancouver
Biggs, Margaret L.....		Dill, Charlotte E.....	Vancouver
	New Westminster	Eastham, Arthur M.....	Vancouver
Bird, John I.....	Vancouver	Edgar, Edmund G.....	Vancouver
Bishop, Roger J.....	Vancouver	Edwards, Nell.....	Victoria
Boyd, Ian D.....	Vancouver	Elgie, Irene G.....	Penticton
Bramwell, Clarence H.....	Vancouver	Ellis, David C.....	Comox
Brewer, Charles P.....	Vancouver	Falconer, George E.....	Lumby
Bruce, Graham.....	Vancouver	Ferguson, Helen.....	Nelson
Cameron, H. Donald.....	Vancouver	Ferris, Robert J.....	Vancouver
Capon, Donald.....	Vancouver	Fitch, Fred T.....	Vancouver
Clague, John E.....	Vancouver	Flather, Donald M.....	Vancouver
Clark, Gordon A.....	Burns Lake	Fotheringham, A. Montieih.....	
Clarke, Waldo J. G.....	Vancouver		Vancouver
Colbert, John A.....	Vancouver	Free, Norman S.....	Vancouver
Cook, Francis.....	North Vancouver	Gaitskell, Charles D.....	Powell River
Corbould, Iris.....	Vancouver	Gale, A. Moira.....	Kelowna
Covington, Arthur E.....	Vancouver	Gibson, Doreen E.....	Vancouver
Curtis, L. Colin.....	Victoria	Gilbert, Ernest W. S.....	Vancouver

*Conditioned.

GRADUATES—FACULTY OF ARTS AND SCIENCE—(Continued)

Name	Home Address	Name	Home Address
Gillen, James L.	Abbotsford	McPherson, Norman	Langham, Sask.
Gilliland, Henry C.	Victoria	Neary, Bernard F.	Victoria
Gillson, John W.	Vancouver	Nicholls, John L.	Parksville
Goard, Dean H.	Vancouver	O'Neil, Margaret A.	Vancouver
Goranson, Ewald	Vancouver	Parnall, John E. A.	Esquimalt
Gourlay, Edgar A.	Vancouver	Phillips, Audrey C.	Cumberland
Grant, Louis S.	Vancouver	Pillar, Charles H. R.	Victoria
Greenwood, Louis W.	Vancouver	Poisson, Rodney	Hollyburn
Grubb, Robert N.	Saanich	Price, Frampton	Vancouver
Gurney, William H.	Kamloops	Pym, Gwendolyn N. C.	Vancouver
Gwyn, Agnes M.	Duncan	Quigley, Arthur V.	Vancouver
Hall, Gordon W.	Oyama	Railton, Joan M.	Vancouver
Harper, John A.	Vancouver	Reid, M. Audry	Vancouver
Harris, Ernest A.	Vancouver	Retallack, James G.	Vancouver
Henniker, Pat (Mrs.)	Vancouver	Richardson, Jack E.	Vancouver
Herd, Harold H.	Vancouver	Riddehough, Geoffrey B.	Vancouver
Hodson, Phyllis E.	Vancouver	Ritchie, Cecil E.	Princeton
Hudson, William O.	New Westminster	Robertson, William T.	Vancouver
Hutton, Gwendolyn L.	Vancouver	Rogers, E. deLancey	Vancouver
Idyll, Clarence P.	Vancouver	Roper, William J.	Vancouver
Irwin, Everett J.	Vancouver	Ross, Jack E.	Vancouver
James, William	Vancouver	Shaffer, Marion A.	Vancouver
Johnsen, Clara E.	Upper Lynn P.O.	Shipton, C. Bernard	Victoria
King, Norma L.	Vancouver	Smith, Clyde McK.	Vancouver
Kirkby, Alan G.	Chilliwack	Sparks, Jack	Vancouver
Lane, Mary W.	North Vancouver	Sprinkling, Ransford G.	Fruitvale
Li, Ting K.	Vancouver	Thorsteinsson, Berg	Powell River
Lips, Alair	Terrace	Tillman, Robert B.	Winnipeg, Man.
Lobb, Hilda I.	Vancouver	Todd, Marjorie D.	Vancouver
Lower, J. Arthur	Vancouver	Tomkinson, William	New Westminster
Margetts, Philip G.	Trail	Toms, Donald H.	Vancouver
Martin, Catherine V. C.	Vancouver	Town, Victor J.	Vancouver
Mathias, D. Gordon B.	Vancouver	Vance, H. Madeleine	Vancouver
Melvin, W. Breen	Invermere	Vollans, Everett H.	Vancouver
Miller, Ivan R.	Vancouver	Waites, Kenneth A.	Vancouver
Mitchell, James R.	West Vancouver	Walker, Day	North Vancouver
Mitchell, William H.	Vancouver	West, Kenneth A.	Vancouver
Moore, James A.	Vancouver	Wilander, William A.	Vancouver
Muirhead, Margaret O.	Vancouver	Wilks, A. Fred	Vancouver
McDonald, James T.	Vancouver	Wilson, John A. R.	New Westminster
McDonnell, Peter F.	Oyama	Wilson, Marjorie M.	Vancouver
McGechaen, John	Vancouver	Wright, John B.	Vancouver
McKenzie, Robert T.	Vancouver	Zotov, Gennady	New Westminster
McKeown, William	New Westminster		
McLellan, Robert B.	Vancouver		

SOCIAL SERVICE COURSE

Bailey, Stanley J.	Vancouver	Harkness, D. Marguerite	Vernon
Baldwin, Gwendolyn C.	Vancouver	Hay, Mary E.	Vancouver
Ball, Beatrice M.	Vancouver	Hicks, Regis A.	Vancouver
Birch, Sophie	Vancouver	Hind, F. Ruth	Vancouver
Boyd, Priscilla A.	Medicine Hat, Alta.	Levin, Sonia M. (Mrs.)	Vancouver
†Bradley, Eleanor J.	Vancouver	*Matheson, John P.	Vancouver
Brooks, Barbara	Vancouver	Moscrop, Martha E.	Vancouver
Buck, Jessie E. (Mrs.)	Vancouver	Moss, Max E.	Calgary, Alta.
Carey, N. Patricia	Vancouver	†McCabe, Bernard J.	Vancouver
Carter, Catherine L.	Vancouver	McDonald, J. Julie D. H.	Vancouver
Clarke, C. Stewart	Vancouver	Macdonald, Margie B.	Vancouver
Cornack, Julia F.	Qualicum Beach	†McKay, Ruby M. F.	Vancouver
Craig, Joyce M.	Edmonton, Alta.	†Oliver, Jean R.	Vancouver
Davis, Mary McN.	Victoria	†Puckering, Mary E.	West Vancouver
Foster, Marion E.	Calgary, Alta.	Pumphrey, K. Avis	Vancouver
Freethy, Eveline Nutana P.O., Sask.		Reid, Gladys F. L.	Vancouver
Gourlay, Margaret T.	Vancouver	Scott-Colquhoun, Nora	Victoria
Granat, Marie A. (Mrs.)	Vancouver	Shewan, Agnes A. H.	Burnaby
†Hardy, Margery C.	Vancouver	Smith, M. Kathleen (Mrs.)	Vancouver
		†Spurgin, Ann I. (Mrs.)	Vancouver

*Conditioned.

†Partial.

SOCIAL SERVICE COURSE—FACULTY OF ARTS AND SCIENCE—(Continued)

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Stanley, Beatrice M.....	Vancouver	Van Kleeck, Barbara A.....	Armstrong
Thomson, Frances B.....	Vancouver	Webster, Kathleen E.....	Vancouver
Thurston, Helen A.....	Edmonton, Alta.	Weldon, Margaret I.....	Vancouver
Tisdall, F. Ruth.....	Vancouver	†Whiten, George A.....	Vancouver
*Titterington, May (Mrs.).....	Vancouver	†Wright, Marie G.....	Vancouver
Tompkins, Dorothea M.....	Calgary, Alta.	*Wright, Mildred M.....	Esquimalt
Troup, Irene J.....	Vancouver	York, Madge J.....	Killam, Alta.

TEACHER TRAINING COURSE

Agnew, W. Noel.....	Vancouver	McDermott, Margot C.....	Vancouver
Bladen, Kathleen M.....	Victoria	McDiarmid, Ian H.....	Vancouver
Brunton, Frederick M.....	Ladner	McLaren, Wendell H.....	Vancouver
Charters, Alexander N.....	Albreda	McLaurin, Jean C.....	Victoria
Clarke, Ena C.....	Vancouver	McLean, Cynthia.....	Vancouver
Cobain, James.....	Vancouver	McLeod, Jean M.....	Vancouver
Cowan, Phyllis L.....	Victoria	Pattison, Helen V.....	West Summerland
Craig, E. Mary.....	Vancouver	Patton, Marion McC.....	Vancouver
Croll, Alan S.....	Vancouver	Porter, June.....	Vancouver
Cruise, Florence I.....	Vancouver	Rae, L. Margaret H.....	Vancouver
Davie, Doreen F.....	Vancouver	Ramsay, Margaret B.....	North Vancouver
Dickie, Clymene L.....	Vancouver	Rice, Margaretta G. apR.....	Duncan
Ferguson, Jean A.....	Nelson	Roddan, Samuel.....	Vancouver
Gibbon, Hilda L.....	Langley Prairie	Root, Marian E.....	Vancouver
Gray, Myrie A.....	New Westminster	Sellar, Euphemia McL.....	Vancouver
Harkness, Douglas B.....	Vancouver	Sibley, Norah MacL.....	Vancouver
Harvey, Margaret J.....	Vancouver	Smith, M. Inez.....	Vancouver
Houston, Elizabeth J.....	Vancouver	Snyder, Fronia E.....	Vancouver
Kepton, H. Jean.....	Victoria	Stuart, John R. A.....	North Vancouver
Kerr, Edna L.....	Ladner	Telford, Gordon D.....	Vancouver
Kersey, Lorne R.....	Vancouver	Thomson, C. Gordon.....	West Saanich
Latornell, Maurice C.....	Nelson	Trafford, Phyllis H.....	West Vancouver
Leslie, Elizabeth C.....	Enderby	Washington, Catherine L.....	Vancouver
Lintott, Elspeth M.....	Penticton	Wilson, Mollie W.....	Vancouver
Makinen, Sadie.....	Vancouver	Wirick, Arthur J.....	Vancouver
Matheson, Frances M.....	Vancouver		
Moran, Frances M.....	Trail		
Munro, Donald F.....	Vancouver		
Muttit, Gordon H.....	New Westminster		
McCulloch, Mary A.....	Revelstoke		

SECOND TERM ONLY

Benson, Geoffrey B.....	Vancouver
Palmer, Winnifred M.....	Milner

DIRECTED READING COURSE

Aberdeen, James F.....	Eburne	Damen, William.....	Mount Lehman
Adair, Selina M.....	Armstrong	Daniel, Howard W.....	East Kelowna
Adams, Thomas V.....	Sointula	Dawson, Horace R.....	Victoria
Bate, Harold.....	Hall	Downard, James H.....	Victoria
Bissell, George C.....	Oyama	Dunlop, Ray L.....	Moose Jaw, Sask.
Blanchard, Herbert E.....	Duncan	Edgcumbe, Leila J.....	Prince Rupert
Bowbrick, John T.....	Courtenay	Elmes, Walter H.....	Invermere
Breckenridge, David E.....	Nanaimo	Evans, Stanley.....	Nanaimo
Bristow, Edith A.....	Merritt	Ferguson, George.....	Chemainus
Bryndolfson, Stephen G.....	Powell River	Ferguson, Hugh C.....	Campbell River
Burdon-Murphy, Desmond.....	Victoria	Ferguson, John C.....	Chilliwack
Calver, William H.....	Great Central	Ferguson, Walter.....	Ladysmith
Campbell, W. Morton.....	Port Steele	Flick, Dorothy V.....	Hazelton
Carlson, Oscar H.....	New Westminster	Foster, Franklyn.....	Nanaimo
Cavallier, Eva E.....	Prince Rupert	Gale, Robert A.....	Port Alberni
Charter, Harold R.....	Carcross, Yukon	Gilmour, William S.....	Lynn Creek
Clark, Alec F.....	Armstrong	Ginther, W. Lorne.....	Gibson's Landing
Clark, William G.....	Silverdale	Goddard, Ernest A.....	Ocean Falls
Clay, Carlyle E.....	Armstrong	Grodzki, Leonard.....	New Denver
Cobus, Anthony E.....	Nelson	Guidi, Rudolph P.....	Oliver
Cooper, Burt M.....	New Westminster	Haines, Alfred R.....	Duncan
Creelman, Hugh W.....	Victoria	Hammett, Joseph F.....	Eburne
Crellin, William S.....	Nanaimo	Hayward, Harry.....	White Rock
Curtis, Alice M.....	Camp Lister	Henderson, James.....	Vancouver

*Conditioned.

†Partial

DIRECTED READING COURSE—FACULTY OF ARTS AND SCIENCE—(Continued)

Name	Home Address	Name	Home Address
Holyoke, Frederick V.	Stillwater	Petrie, Marie C.	Kimberley
Humphreys, Alfred N.	Kelowna	Phillips, Alexander J.	Premier
Hutchinson, Alec	Esquimalt	Pidcock, Ruth E.	Wells
Hutchison, James C.	New Westminster	Price, Robert S.	Vernon
Jenks, Robert	Cloverdale	Prince, Maurice S.	Hove 3, Sussex, England
Johnson, Gordon E.	Bella Coola	Pritchard, Hubert D.	Vernon
Jones, Arthur D. W.	Smithers	Pritchard, Vaughan G.	Victoria
Jones, Mary C.	Prince Rupert	Reston, May McD.	Courtenay
Keith, Leslie	Squamish	Richards, Ellinor G.	Vernon
Kennedy, William C.	Nanaimo	Richardson, Sidney L.	Port Alice
Kirk, John G.	Newton	Robinson, Margaret	Cumberland
Lee, Marjorie M.	New Westminster	Ross, Kenneth C.	Victoria
Lloyd, Norman D.	Tranquille	Sanford, Norman M.	Pitt Meadows
Lucas, Ronald F.	Cloverdale	Shannon, Robert J.	Oliver
Manson, Nicol B.	Alert Bay	Siddall, Charles E.	Telkwa
Marrs, D. Laverock	Vernon	Simpson, Ernest J.	Vancouver
Matthews, Walter H.	Kettle Valley	Smith, David J. S.	Sunset Prairie
Mercer, Elsie	Vernon	Thomson, Howard A.	Sointula
Michell, Cyril A.	Victoria	Timmins, Joseph	Nanaimo
Moore, Frank H.	Cranbrook	Tracy, Frank F.	New Westminster
Mountain, Roy E.	Milner	Tracy, W. Edward	New Westminster
Mugford, James A.	Rutland	Tribe, Jonathan	Hope
Munro, Constance E.	Vancouver	Turnbull, Isobel	New Westminster
Munro, Marjory H.	Victoria	Tweed, Reginald C. R.	Nanaimo
Murphy, Stanley A.	Chемainus	Wallach, Jean	Mt. Lehman
Myers, Harry E.	Westview	Walmsley, Thomas E.	Mapes
Macdonald, Donald G.	Union Bay	Walton, Rhoda	Royston
Macdonald, Joseph V.	Salmo	Warder, Alfred T.	Esquimalt
McDonnell, Eileen	Vancouver	Watson, Henry T.	Cumberland
McElwain, Lena M.	Essondale	Watson, Janet A.	Nanaimo
McGregor, Marjorie H.	Enderby	Webber, Bernard G.	Brookmere
McKay, Donald H.	Cassidy	Webster, Wilfred G.	Kelowna
McLachlan, J. Murdoch	Chilliwack	Wilkie, Jack C.	Rossland
Nye, Florence M.	Lynn Creek	Williams, Florence E.	Vancouver
Orchard, Wilfrid J.	Sooke	Williston, Ray G.	Princeton
Orr, John M.	Everett, Wash.	Wilson, George	New Westminster
Parfitt, Rosiemai	Duncan	Wilson, George C.	Britannia Beach
Patterson, Alexander S.	Reid Lake	Woodman, Sidney E.	North Vancouver
Peacock, Gardiner	Mission City	Yip, Kew D.	Vancouver
Peterson, Lester R.	Matsqui		

There are also 30 students who are taking a Directed Reading Course in addition to their other work and who are, therefore, registered otherwise.

EXTRA-SESSIONAL CLASSES

Abel, M. Beatrice	Vancouver	James, Albert H.	Vancouver
Auld, Wilfred H.	Vancouver	Lightbody, Frank P.	Vancouver
Barker, Amy	Vancouver	Liversidge, Dorothy G. (Mrs.)	Vancouver
Bazeley, William L.	Vancouver	Maxwell, Ernest D. W.	Vancouver
Bell, Alice	North Vancouver	McAdam, Lorne K.	New Westminster
Bennett, Gordon J.	Capilano	MacKenzie, Glenn K.	Vancouver
Bowering, Ebbie	Vancouver	McLachlan, William H.	Vancouver
Burch, P. Thomas	Vancouver	MacSween, Allan J.	North Vancouver
Campbell, Hugh M.	Eburne	Newberry, John D.	Vancouver
Couch, Edgar A.	Vancouver	Owen, Gladys W.	Vancouver
Cupit, Frank L.	Vancouver	Pallas, Thomas E.	Vancouver
Delany, Mary	Vancouver	Smyth, James D.	Vancouver
Dempsey, Daniel C.	North Vancouver	Smyth, Joseph	Vancouver
Garvin, Robert W.	Vancouver	Stephen, John E.	Steveston
Glazier, Arnold H.	Steveston	Sweet, Arthur F.	New Westminster
Goard, Harold D.	Vancouver	Thompson, William H.	Vancouver
Govier, Percy E.	New Westminster	Waters, William J.	Vancouver
Griffin, George H.	Vancouver	White, Ernest E.	New Westminster
Hamilton, John A.	Vancouver	Williams, Maud A.	Vancouver
Hill, Edith L.	Vancouver	Woodward, Harold	Vancouver
Hodgson, Joan V.	Vancouver		

There are also 26 students who are taking an Extra-Sessional Class in addition to their other work and who are, therefore, registered otherwise.

FACULTY OF APPLIED SCIENCE

SECOND YEAR

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
Abrams, Jack H.	Nanaimo	LeBlanc, Emile R.	Rosedale, Alta.
Adams, J. Rayson	Vancouver	Lee, Joseph O.	Nanaimo
Baker, D. Leacroft	Vancouver	Leong, Dennis T. S.	Vancouver
Barton, Edward S.	Vancouver	Livingstone, Hughie	Vancouver
Bastin, Douglas H.	Vancouver	Lock, Stanley L.	Victoria
Bedford, G. Victor	Salmon Arm	Machell, Eugene F.	Matsqui
Beley, J. Patrick	Rossland	Mann, Arthur R.	Duncan
Bell, Gordon M.	Vancouver	Mann, Hugh A.	Vancouver
Bell, Harry R.	Ladner	Matheson, Chester R.	New Westminster
Bennett, J. Howard	Vancouver	Matheson, Willard E.	Kelowna
Bennett, Reginald B.	Vancouver	Miller, Douglas G.	Vancouver
Blanchet, Peter H.	Sidney	Miller, James W.	Vancouver
Bradfield, Albert W.	Nanaimo	Miller, Richard C.	Victoria
Brown, Ivan T.	Vancouver	Morris, Harry R.	Vancouver
Bruce, Norman C.	Golden	Mosher, Vaughan L.	Lynn Valley
Bundy, Leonard P.	Wingdam	McCulloch, James P.	Vancouver
Burns, David	Vancouver	McGowan, John	Vancouver
Bushell, Charles H. G.	Vancouver	MacKay, R. Neil	Victoria
Carlyle, D. Gordon	Vancouver	MacKenzie, John S.	Vancouver
Carson, Victor B.	New Westminster	McKenzie, W. Cameron	New Westminster
Casson, H. Vincent	Victoria	McLellan, Donald	Vancouver
Cavers, Stuart D.	Vancouver	McLellan, Donald E.	Nanaimo
Chorlton, Douglas J.	Britannia Beach	McLeod, Donald E.	New Westminster
Chu, Gan D.	Vancouver	MacRae, Hector R.	Caulfield P.O.
Cochran, John	Vancouver	Nanson, Frank G.	Vancouver
Coleopy, Norman	West Vancouver	Nash, Charles W.	Vancouver
Creelman, Elliott A.	New Westminster	Nasmyth, Pan H.	North Vancouver
Creighton, John D.	Vancouver	Norton, Eric H.	Vancouver
Cunningham, C. Cleveland	Burnaby	Nosworthy, Frank M.	Chilliwack
Curran, Henry M.	Vancouver	Ouimette, William M.	Vancouver
Curwen, Guy R. L.	Chilliwack	Parker, Rex C.	Woodfibre
Cushing, Thurb D.	Kelowna	Parsons, Robert B.	Prince Rupert
Davie, Hugh S.	Vancouver	Pinder-Moss, John N.	Vancouver
Davies, Kenneth R. G.	Kimberley	Potkins, Robert A.	Vancouver
Douglass, M. Keith	New Westminster	Rich, Royce	Vancouver
Durham, George C.	Smithers	Richards, Ian T.	Hollyburn
Edwards, Donald M.	Cranbrook	Riddell, Frederick R.	Qualicum Beach
Elliott, Albert H.	Dawson, Y.T.	Rogers, C. Gordon	Victoria
Everts, J. Allyn	Medicine Hat, Alta.	Rooney, Sidney C.	North Vancouver
Fargey, Harold T.	Vancouver	Roxburgh, J. Malcolm	Vancouver
Field, Stephen E.	Vancouver	Rumball, Dale L.	West Summerland
Fraser, Alan R.	West Vancouver	Rush, Ian C. M.	Hollyburn
Fulton, Andrew W.	Vancouver	Selby, Roy E.	Ioco
Gatenby, Lisle B.	Vancouver	Sharp, William McM.	Vancouver
Glover, John L.	Vancouver	Sheldon, Stanley W.	New Westminster
Graham, David R.	Kingsgate	Sinclair, G. William	New Westminster
Granger, J. Maxwell	Vancouver	Sinclair, H. Lloyd	Vancouver
Grant, Ian MacD.	Vancouver	Smith, Eric L.	Vancouver
Hammersley, Cameron	Vancouver	Smith, William R.	West Vancouver
Harvey, Bruce F.	Revelstoke	Steel, William E. J.	Vancouver
Hatch, Noll J.	Chilliwack	Stevenson, E. Brian	Vancouver
Hayles, O. John	Chilliwack	Stewart, A. John	Britannia Beach
Haywood-Farmer, Robert	Savona	Stewart, J. Norman	Vancouver
Hilchey, Gordon R.	Vancouver	Sutton, Frank N.	Cumberland
Hills, J. Franklyn	Vancouver	Tait, Robert J. C.	Victoria
Hincks, Peter D.	Cadboro Bay P.O.	Takahashi, Saburo	Victoria
Hookings, Paul H. H.	Nelson	Tater, Semon G.	Courtenay
Hopper, D. Alan	Vancouver	Tater, William J. M.	Courtenay
Howey, George R. A.	Kimberley	Taylor, Hugh J.	Vancouver
Hunter, A. Leicester	Vancouver	Thompson, Elmer A.	New Westminster
Joplin, A. Frederick	Vancouver	Thompson, J. Vernon	Bassano, Alta.
Kagetsu, Hajime	Vancouver	Thorson, Victor	Vancouver
Kaneen, Arthur G.	Vancouver	Touhey, Thomas B.	Britannia Beach
Kermode, E. Jacklin	Vancouver		
Kersey, W. Gordon	Vancouver		
Law, Henry	Gabriola Island		

FACULTY OF APPLIED SCIENCE—SECOND YEAR—(Continued)

Name	Home Address	Name	Home Address
Tucker, Jack N.	Vancouver	Walton, Ernest N.	Vancouver
Tully, Ralph W.	Ladysmith	Wannop, Robert C.	Vancouver
Turnbull, Arthur W.	Milner	White, Charles E. T.	Vancouver
Turner, A. Desmond	New Westminster		

THIRD YEAR

Anderson, Cameron B. H.	Vancouver	Maxwell, John J.	Swift Current, Sask.
Anderson, Harold W.	North Vancouver	Mikkelsen, Elmer J.	Golden Mills, W. Earl
Anderson, Thomas T.	Westview	Moodie, Walter J.	Vancouver
Andrews, Arthur J.	Chapman Camp	Morin, Desire P.	Vancouver
Angle, William F. P.	Regina, Sask.	Mussallem, Peter M.	Haney
apRoberts, G. Evan	Vancouver	McAllister, Robert D.	Rossland
Barchard, Francis M.	Trail	McArthur, John P.	Vancouver
Beresford, Richard G.	Vancouver	McCallum, Thomas G.	MacK.
Blodgett, Roy C.	Vancouver		
Bowden, Walter R.	Vancouver	McEachern, Ronald G.	Coalmont
Braidwood, William	Vancouver	McKim, Howard N.	Calgary, Alta.
Broadbent, Joseph S.	Moose Jaw, Sask.	McLaren, Thomas A.	Vancouver
Bryson, C. Dennett	Vancouver	Macleod, James D.	Calgary, Alta.
Burnett, Norman H.	Vancouver	McQueen, Donald R.	Vancouver
Chinn, Frank	Vancouver	Macrae, Roderick C.	Vancouver
Crane, George J.	New Westminster	Nasmyth, Patrick W.	North Vancouver
Davidson, Gordon K.	Vancouver	Naylor, Joseph	Prince Rupert
Davis, Russell L.	Vancouver	Nazzer, Don	Vancouver
Drummond, Alan S.	Victoria	Newmarch, Charles B.	Victoria
Durkin, Roy C.	Vancouver	Nichols, Walter J.	Edmonton, Alta.
Ellis, Frank J.	Regina, Sask.	Nikaido, Hideo F.	Vancouver
Ellison, Gordon D.	Trail	Orr, Oscar F.	Vancouver
Fairbairn, Dennis W. L.	Vancouver	Parker, Charles W.	Revelstoke
Fairbairns, James M.	Victoria	Patience, L. Patrick	Kimberley
FitzPatrick, S. Terence	Victoria	Pickell, Owen F.	Fort St. John
Foster, J. Maxwell	Vancouver	Poulson, J. Howard	Saanichton
Foster, Robert L.	Vancouver	Price, John W.	Vancouver
Gillies, John A.	Vancouver	Purdey, James W.	Vancouver
Goode, Norman J.	Vancouver	Rae, Arthur C.	Vancouver
Gordon, Arthur D.	Vancouver	Rattenbury, David J.	Kelowna
Granger, Thomas S.	Vancouver	Renshaw, Rodney E.	North Vancouver
Gray, Denis H.	Vancouver		
Greeno, Daniel M.	Upper Sumas	Richardson, Allyn St. C.	North Vancouver
Gregory, Alfred J.	Vancouver	Roberts, John M.	Edmonton, Alta.
Griffiths, Garth	Victoria	Robinson, James A.	Victoria
Gross, William H.	Vancouver	Rosenberg, Eloy C.	North Vancouver
Hailey, Arthur R. T.	Vancouver	Ryan, Gladstone E.	Vancouver
Hanbury, John C.	Monte Lake	Ryder, Charles V.	Chilliwack
Harford, George P.	New Westminster	Sanford, Lionel M.	Vancouver
Harris, Stanley L.	Vancouver	Sarles, L. Norwood	Kamloops
Hipkin, Howard G.	Vancouver	Shepherd, Andrew F.	Victoria
Hunt, William R.	Vancouver	Shitobu, Eiichi	Vancouver
Iverson, Bayard O.	Oliver	Smith, Alan R.	Vancouver
Jackson, W. Stanley	Nelson	Smith, Harry H.	New Westminster
Jamieson, Fraser	Vancouver	Storey, John E.	Vancouver
Johnston, J. Ralph	Invermere	Thomas, David H. L.	Victoria
Kadzielawa, Julius E.	Vancouver	Thompson, Robert M.	Moose Jaw, Sask.
Keays, John L.	Vancouver		
Kelland, Herbert H.	Vancouver	Townsend, Stanley D.	Oyama
Ker, John W.	Vancouver	Wade, Garth S.	Kamloops
Ker, W. Allan	Vancouver	Wallace, J. Alan	Vancouver
Korlie, William	Vancouver	Wallace, William	Vancouver
Logan, Jack D.	Vancouver	Williams, Edwin P.	Vancouver
Lynott, William J.	Vancouver	Wyness, Donald P.	Vancouver
Lyons, Edgar LeR.	Vancouver	Zirul, Melvin L.	North Vancouver
Mabee, Thomas O.	Victoria	Zitko, Ludovic	Vancouver
Markham, Douglas	Vancouver		
Maw, David H.	Vancouver		

FACULTY OF APPLIED SCIENCE—(Continued)

FOURTH YEAR

Name	Home Address	Name	Home Address
CHEMICAL ENGINEERING		CHEMICAL ENGINEERING	
Archibald, Charles B.	Victoria	Bennett, Charles E.	Penticton
Barchard, Philip W.	Trail	*Cameron, Ian T.	Raymore, Sask.
Bell, James D.	Victoria	Carey, Davis M.	Cadboro Bay
Cavers, William J.	Vancouver	Chard, Albert E.	Regina, Sask.
Craighead, William A.	Vancouver	*Dixon, Allan H.	Vancouver
Crute, Arthur H.	North Vancouver	LeMare, John D.	Duncan
Gunn, John A. M.	North Vancouver	Lind, Norman	Vancouver
*Heim, W. Clare	Mission City	Pogue, Henry M.	Vancouver
Kemper, J. Howard	Britannia Beach	Provenzano, Angelo F.	Cranbrook
Killam, Cecil G.	Vancouver	Smellie, Ian McK.	North Vancouver
Lawson, Robert G.	Vancouver	GEOLOGICAL ENGINEERING	
Leslie, John D.	Vancouver	*Anderson, Arthur T.	Vancouver
Lowe, Robert A.	Calgary, Alta.	*Burden, Stephen P.	Vancouver
Mair, John D.	Vancouver	Gaul, Raymond F.	Vancouver
Morel, Roy W. F.	Trail	Johnson, Earl W.	Vancouver
Patrick, James D.	Vancouver	Lougheed, Milford S.	Vancouver
Pilkington, William T.	New Westminster	Mathews, William H.	Vancouver
Price, Silas R.	Bowen Island	Ney, Charles S.	Vancouver
*Ussher, James W.	North Bend	MECHANICAL ENGINEERING	
Van Allen, Alexander	Vancouver	Bogle, Roy T.	Britannia Beach
*Walmsley, Harry L.	Summerland	Carruthers, Harvey	Vancouver
Watson, Ernest L.	Hatzic	Eadie, John K. McA.	Ocean Falls
Yip, Sun W.	Vancouver	Johnsen, Peter F. B.	Dickson, Alta.
CIVIL ENGINEERING		Kennedy, Milton McK.	Eden, Man.
Cook, Paul M.	Vancouver	Laird, Alan D. K.	Victoria
Hansen, Melville B.	Vancouver	Morris, Harold J.	Vancouver
*Lighthall, Charles H.	Vancouver	Pearce, Gordon F.	Vancouver
McIntosh, Donald G.	Vancouver	*Stewart, A. Ronald M.	Vancouver
†Stamer, Salomon	Lwow, Poland	METALLURGICAL ENGINEERING	
Warren, William	Vancouver	McGregor, Donald J.	Penticton
ELECTRICAL ENGINEERING		MINING ENGINEERING	
Cosar, Jack	North Bend	Crowhurst, John J. A.	North Vancouver
*Duke, R. Laurence	Vancouver	Holland, D. Clarke	Vancouver
Duncan, Allix J.	West Vancouver	*Kitamura, Kenji	Vancouver
Frassero, Marino	Powell River	McIntosh, John S.	Vancouver
Monasch, Louis B.	Vancouver	McLean, John C.	Vancouver
McDonald, John D.	Rossland	*Parry, Edward J.	Vancouver
Parker, William A.	Nelson	Pearce, Frederick G.	Vancouver
*Pogson, J. Roy	Vancouver	Runkle, John D.	Vancouver
Saito, George L.	Cumberland	Taylor, Raymond R.	Vancouver
*Sanderson, John A.	New Denver	Toombs, Ralph B.	Vancouver
Webb, Elwood S.	Chilliwack	Wylie, John W.	Estevan, Sask.
FOREST ENGINEERING		CIVIL ENGINEERING	
Armstrong, John B.	Victoria	Barrett, J. H. Desmond	Victoria

FIFTH YEAR

CHEMICAL ENGINEERING		CIVIL ENGINEERING	
*Collicutt, Sidney A.	Vancouver	Burnett, Daniel A.	Vancouver
Davis, Jack	Kamloops	Donaldson, David R.	New Westminster
Davis, Trevor C. M.	Victoria	Ford, Sherwood D.	New Westminster
Govier, George W.	Vancouver	Kennedy, Jack S.	Vancouver
Hartley, Fred L.	Vancouver	*King, J. Cameron	New Westminster
King, James G.	New Westminster	McLeod, James D.	Vancouver
Lyons, Robert H.	Victoria	ELECTRICAL ENGINEERING	
Mead, Bruce R.	Vancouver	Beeching, Thomas A. G.	Victoria
MacDermot, John G.	Vancouver	Breeze, John E.	Vancouver
Patterson, Ralph F.	Ocean Falls	Coulson, Alexander	Vancouver
Rowbotham, Edwin W.	Lakehill P.O.	Davidson, Henry H. A.	Vancouver
Webster, Charles R.	Kaslo		
*Wilkinson, John T.	Kamloops		
Wilson, Ronald S.	New Westminster		

*Conditioned.

†Partial.

FACULTY OF APPLIED SCIENCE—FIFTH YEAR—(Continued)

Name	Home Address	Name	Home Address
ELECTRICAL ENGINEERING—(Cont'd)		MECHANICAL ENGINEERING	
Erlebach, Graham B.	Vancouver	McDougal, Allan R. B.	North Vancouver
Farmer, Philip J.	West Vancouver	Phillips, Roy A.	Vancouver
Fulton, Oscar R.	Prince Rupert	Shortley-Luttrell, Colborne H.	Vancouver
Garvie, W. Laurence	New Westminster	Stewart, Donald A.	Britannia Beach
Gordon, Robert C.	Edmonton, Alta.	Temoin, Rene J.	Vancouver
Hand, Carl E.	Vancouver		
Harrison, George E.	Victoria		
Hetherington, Wordsworth L.	Vancouver		
Hill, John A.	Vancouver		
Hughes-Games, W. Ernest	Kelowna		
Jones, Frank B.	Victoria		
Larsen, M. Patrick	Vancouver		
Layard, Paul R.	Ganges		
Morris, Robert A.	North Vancouver		
McDowell, Gordon E.	Nelson		
Sutton, Arthur L.	Vancouver		
FOREST ENGINEERING			
Brun, Paul R.	Vancouver		
Custance, John P.	New Westminster		
Lyons, Chester P.	Penticton		
Minns, George W.	Vancouver		
Stokes, John S.	Victoria		
GEOLOGICAL ENGINEERING			
Allen, Alfred R.	Vancouver		
Bacon, William R.	Vancouver		
Crosby, Robert G.	Vancouver		
Lamb, John	Vancouver		
Nesbitt, Bertram I.	Vancouver		
*Williams, Wilfrid O.	Vancouver		

GRADUATES

Davenport, Charles H.	Revelstoke	McCammon, James W.	New Westminster
Davies, George F.	Vancouver	Schmidt, Elliot A.	Vancouver
Dayton, William A.	Vancouver	Stanforth, Alan	Vancouver
Elfstrom, Roy H.	Vancouver	White, William H.	Vancouver
Gordon, Arthur I. E.	Vancouver	Wighton, James J.	Vancouver
Hamilton, Rognvald T.	Vancouver	Yatabe, Eiji	Vancouver
Killin, Alan F.	Vancouver		
Little, Heward W.	Vancouver		

NURSING

SECOND YEAR

Chipperfield, Nora J.	Royal Oak	Ladner, Dorothy M.	Burnaby
Cochrane, Ruth C.	New Westminster	McKay, Jean C.	Vancouver
Davies, Viola C.	Vancouver	*McLean, Winifred P.	Vancouver
Dunfield, Mary F.	Vancouver	Pepper, Doris B.	Vancouver
Gamsby, Marion A.	High River, Alta.	Ross, F. Mary	Vancouver
Goble, Margaret A.	North Vancouver	Stenstrom, Mary R.	Ocean Falls
Jamieson, Doreen L.	Rossland	Walker, Jean M.	Tranquille
Jenkins, A. Elizabeth	Fort William, Ont.	Willis, Ida B.	Vancouver
Johnson, Shirley H.	Wells	Wright, Leora R.	Vancouver

THIRD YEAR

Beattie, Margaret	Queen Charlotte City	Breeton, Barbara A.	Vancouver
Beveridge, Margaret A.	Vancouver	Campbell, Margaret M.	Vancouver
		Eddie, Mary C.	Sardis

*Conditioned.

NURSING—FACULTY OF APPLIED SCIENCE—THIRD YEAR—(Continued)

Name	Home Address	Name	Home Address
Gall, Jeanne E.....	Vancouver	Morris, L. Elizabeth.....	New Westminster
Giovando, Lucille.....	Ladysmith	Taylor, Gayle.....	New Westminster
Jonson, Ruth M.....	New Westminster	Uyede, A. Michiyo.....	Vancouver
Montgomery, R. Leslie.....	Vancouver		

FOURTH YEAR

Armitage, Jara E.....	Creston	Macdonald, Mona V.....	Vancouver
Campbell, Isabelle.....	Vancouver	Maclean, Mary C.....	Vancouver
Curtis, Kathleen M.....	Vancouver	McLennan, Helen E.....	Trail
Howard, Edna G.....	Vancouver	Staniforth, Marjorie E.....	Vancouver
Millar, Margaret C.....	Vancouver		

FIFTH YEAR

Addison, Margaret S.....	Victoria	McCann, Elizabeth K.....	Vancouver
Frith, Monica M.....	Vancouver	Paulin, Dorothy E.....	Vancouver
Grant, Katharine L.....	Vancouver	Peirson, Gertrude.....	Vancouver
Kennedy, Janet S. M.....	North Vancouver	Saunders, Helen A.....	Victoria
Loucks, J. Isabel.....	Regina, Sask.	Steele, Margaret H.....	Vancouver
Mayers, Helen.....	Vancouver	Walters, Edith M.....	Ladysmith

SIXTH YEAR

Capelle, Pauline M. A.....	Chilliwack	Lehman, Elizabeth D.....	Barons, Alta.
Henderson, Caroline.....	Drumheller, Alta.	McMartin, Pauline K.....	Vancouver
Jackson, Florence I.....	Vancouver	Trant, Helen M.....	Vancouver
John, Martha M.....	Magrath, Alta.	Wilson, Beverly E.....	Vancouver

PUBLIC HEALTH NURSING COURSE

Barker, Constance M.....	Vancouver	Mungen, Isabel L.....	Vancouver
Barton, Margaret.....	Chilliwack	McDiarmid, Pauline.....	Vancouver
Bellis, Marion A.....	Victoria	McVicar, Isabel G.....	Vancouver
Corbould, Ruth.....	Prince Rupert	Pontifex, Vivien.....	New Westminster
Daem, Joanne M.....	Victoria	Simpson, Velma.....	Neepawa, Man.
Ewart, Noreen.....	Vancouver	Wade, Mary G.....	Vancouver
Gay, Margaret H.....	Vancouver	Whitehead, C. Eleanor.....	Vancouver
Merritt, Kathleen B.....	Vancouver	Yamazaki, Yasuko.....	Vancouver

FACULTY OF AGRICULTURE

FIRST YEAR

Armour, Lloyd L.....	Chapman Camp	Monckton, John.....	Royal Oak
Bentley, Robert O.....	Vancouver	Myrloie, Robert L.....	Vancouver
Borthwick, David.....	New Westminster	McCrary, Elwood R.....	Eburne
Brown, Kenneth R.....	Vancouver	McEwen, J. Murray.....	Vancouver
Claydon, George W.....	Vancouver	McGougan, Donald B. M.....	Vancouver
Clement, John W.....	Vancouver	McKinnon, Donald O. B.....	Steveston
Cuthbert, W. James.....	Agassiz	MacSwan, Iain C.....	Vancouver
Davies, John C.....	Vancouver	Nelson, Nora E.....	Vancouver
Desjardine, Marcial E.....	Edmonton, Alta.	Sakamoto, Arthur G.....	Whonnock
Foley, Richard B.....	Vancouver	Sully, Lynn K.....	Cloverdale
Gifford, Paul H.....	North Vancouver	Thomson, J. Lorraine.....	Vancouver
Goodwin, Martin B.....	Vancouver	Townsend, George C.....	Vancouver
Gray, Aubrey K. J.....	Vancouver	Tremblay, F. Todd.....	Vancouver
Hunt, Robert E.....	Vancouver	Wainwright, P. Rod.....	Vancouver
Jones, George H. R.....	Vancouver	Wood, Juanita E.....	Vancouver
Klinkhamer, Thomas L.....	Ladner	Woodward, Eugene D.....	North Vancouver
Lord, Terence M.....	Vancouver	Young, Alastair J.....	Vancouver
Low, C. Harold R.....	Walcott		

FACULTY OF AGRICULTURE—(Continued)

SECOND YEAR

<i>Name</i>	<i>Home Address</i>	<i>Name</i>	<i>Home Address</i>
*Anstey, Thomas H.	Victoria	*Lopatecki, Eugene L.	North Vancouver
*Billings, Frederick L.	Vancouver	Millard, Robert P.	Vancouver
Byers, John H.	Vancouver	Mitchell, Phyllis D.	Vancouver
Christie, W. Douglas	Vancouver	MacKay, William R.	Vancouver
*Cox, Edmund T.	Rossland	McKim, Anson	Vancouver
Cumming, Patricia C.	Vancouver	*Oldfield, James E.	Saanich
Donegani, Robert G.	Eburne	*Parish, G. Philip J.	Vancouver
Fulton, Ronald F.	Vancouver	*Planta, Carmen	Vancouver
Gilmour, Campbell G.	New Westminster	Porter, Morgan R.	Lytton
Gray, Neil T.	North Vancouver	Runkle, Pamela M.	Vancouver
*Hardy, Frank W.	White Rock	*Salisbury, R. Lawrence	Vancouver
*Hodgson, William R.	Vancouver	*Tamura, Yukio	Haney
*Kamoff-Nicolsky, George	Vancouver	*Teir, John B.	Rosebery
*Letham, William H.	Vancouver	*White, Gerald E.	Victoria
		Zink, Leonard A.	Sardis

THIRD YEAR

Atkinson, Robert G.	Vancouver	McBride, Winifred J.	Ladysmith
*Calder, William A. G.	Vancouver	Narod, Milton	Victoria
Campbell, M. Lois	Vancouver	Poole, Harold C.	Vancouver
†DeBeck, H. Keary	Victoria	Pratt, Jean M.	Victoria
Dickson, Bruce A.	Vancouver	Ritchie, Harry T.	Eburne
*Dougans, Douglas H.	Vancouver	Steele, G. Lester	New Westminster
Harris, Kathleen M.	Agassiz		

FOURTH YEAR

Berry, Francis K.	Vancouver	Morrison, Gillmor I.	Vancouver
Brown, Reginald H.	Barkerville	†Mouat, Gavin H.	Vancouver
Campbell, John J. R.	Vancouver	Salisbury, Philip J.	Vancouver
Cook, Garrett M.	New Westminster	Saunders, James B.	Victoria
Easler, Lloyd	Vancouver	Stanforth, Josephine M.	Vancouver
*Gray, John L.	Vancouver	Stokvis, Wilfred D.	New Westminster
Hicks, W. Odetta	Agassiz	Taylor, Douglas K.	Vancouver
†Inkster, C. Cameron	North Vancouver	Taylor, Milton C.	Vancouver
*Jordan, James V.	Trail	Twiss, Robert D.	Vancouver
King, Robert H.	Vancouver	Weston, Stanley	Vancouver
*Lawrance, Howard W.	New Westminster	Wolfe, Samuel	Vancouver
		Yip, Howard W.	Vancouver

GRADUATES

Brock, Philip H. G.	Vancouver	Longmore, Roderick H.	Vancouver
Derrinberg, Robert C.	Saanichton	Mellor, Frances C.	Victoria
Dickinson, Farley B.	Chilliwack	Menzies, James D.	Haney
Farley, Helen M.	Vancouver	Miller, George M.	Vancouver
Fennell, Edwin J.	New Westminster	Moodie, C. Dawson	Vancouver
Hatcher, Gilbert T.	Vancouver	Nicoll, Russell E.	Vancouver
Hornby, Cedric A.	Summerland	Pahn, Vadim O.	Vancouver
Kadzielawa, Arthur S.	Vancouver	Touzeau, Walter D.	Vancouver
LeGallais, D. Richmond	Vancouver		

OCCUPATIONAL COURSE

FACULTY OF AGRICULTURE

Fraser, Charles A.	New Westminster	Killick, Stanley R.	New Westminster
Gough, Laurence G. J.	Vancouver	Odland, Sam A.	Vancouver
Grahame, Richard W.	Vernon	Smith, Douglas C.	Vancouver

*Conditioned.

†Partial.

REGISTRATION FOR 1938-39

FACULTY OF ARTS AND SCIENCE

	Women	Men	Total
First Year	165	301	466
Second Year	155	231	386
Third Year	121	195	316
Fourth Year	115	167	282
Graduates	29	102	131
Social Service	47	6	53
Teacher Training Course	39	18	57
*Directed Reading Courses	30	127	157
*Extra-Sessional Classes	19	48	67
*Double Registrations	-17	-39	-56
			—1859

FACULTY OF APPLIED SCIENCE

Second Year	136	136
Third Year	112	112
Fourth Year	79	79
Fifth Year	78	78
Graduates	14	14
		419

FACULTY OF APPLIED SCIENCE (NURSING)

Second Year	18	18
Third Year	12	12
Fourth Year	9	9
Fifth Year	12	12
Sixth Year	8	8
Public Health Nursing	16	16
		75
		— 494

FACULTY OF AGRICULTURE

First Year	3	32	35
Second Year	4	25	29
Third Year	4	9	13
Fourth Year	2	21	23
Graduates	2	15	17
Occupational Course		6	6
			— 123
Total			2476

	Women	Men	Total
Evening Class in Botany	11	33	44
Summer Session (1938), Faculty of Arts and Science	195	464	659

DEGREES CONFERRED

MAY, 1938

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

- Allan, Dalton Dodd, B.A. Major: Economics
Minor: History
Thesis: "The Effect of the Panama Canal on Western Canada."
- Bligh, Una Maud, B.A. Major: Bacteriology and
Preventive Medicine
Minor: Chemistry
Thesis: "Studies on Streptococcus viridans."
- Bloom, Morris, B.A. Major: Mathematics
Minor: Physics
Thesis: "Determination of Bases for Certain Quartic Number Fields."
- Chell, Joseph, B.A. Major: Education
Minor: Philosophy
Thesis: "A Plan for the Administration of Health Service in the Schools of British Columbia."
- Davy, John Gregory, B.A. Major: Philosophy
Minor: History
Thesis: "The Function of the Principal of the Elementary School, with Particular Reference to British Columbia."
- Dodd, Arthur James Andrew, B.A. Major: Philosophy and
Psychology
Minor: Economics
Thesis: "Vocational Guidance in British Columbia."
- Fisher, John Henry, B.A. Major: Chemistry
Minor: Physics
Thesis: "The Application of Plastics in the Development of a Preservative for Fishing Gear."
- Green, George Henry Ebenezer, B.A. Major: Education
Minor: History
Thesis: "The Development of the Curriculum in the Elementary Schools of British Columbia Prior to 1936."
- Harvey, George Lloyd, B.A. Major: Philosophy and
Psychology
Minor: Economics
Thesis: "A Study of the Philosophy of Thomas Hobbes."
- Hickman, Walter Henry, B.A. Major: French
Minor: Education
Thesis: "La tragédie classique à l'époque romantique."
- Hunter, Gordon Muir, B.A. Major: Education
Minor: Philosophy
Thesis: "Professional Growth-in-Service of the Teachers in the Public Schools of the City of Vancouver."
- Jacob, John Kenneth, B.A. Major: Zoology
Minor: Botany
Thesis: "The Termites of British Columbia, Their Structure, Bionomics and Intestinal Fauna."
- Kadzielawa, Joseph Leon, B.A. Major: Mathematics
Minor: Physics
Thesis: "An Illustrative Example of Asymptotic Oscillations Within the Helium Atom."

THE DEGREE OF MASTER OF ARTS—(Continued)

Mulvin, Vernon Wallis, B.A.	Major: Education Minor: History
Thesis: "Placement of the High School Student in Business and Industry."	
McHugh, John Laurence, B.A.	Major: Zoology Minor: Botany
Thesis: "A Preliminary Study of the Genus <i>Prosopium</i> , with Special Reference to <i>Prosopium williamsoni</i> (Girard)."	
Phillips, George Lindsay, B.A.	Major: Chemistry Minor: Botany
Thesis: "A Study of Platinum Glyoxime as a Suitable Substance for the Estimation of the Atomic Weight of the Metal."	
Tyner, Ralph Vernon, B.A.	Major: Chemistry Minor: Mathematics
Thesis: "The Application of Plastics in the Development of a Preservative for Fishing Nets."	
Watson, Charles Burton, B.A.	Major: Psychology Minor: Philosophy
Thesis: "Modern Theories of Stuttering and Their Therapeutic Implication."	
Willard, John Hilton William, B.A.	Major: Botany Minor: Education
Thesis: "Some Experiments with Auxin and Other Growth Factors."	
Wright, Frances Mary, B.A.	Major: Chemistry Minor: Mathematics
Thesis: "The Reductive Capacity of an Absorbent Charcoal Surface."	

THE DEGREE OF BACHELOR OF ARTS

With Honours

(Names in alphabetical order)

Bladen, Kathleen Millicent	1st Class Honours in French
Boothby, Granville Forsyth	2nd Class Honours in Chemistry
Brewer, Charles Patrick	1st Class Honours in Chemistry
Cameron, Hugh Donald	2nd Class Honours in Mathematics
Carter, Alfred Edward	1st Class Honours in French
Colbert, James Leeder	1st Class Honours in Economics and Political Science
Corbould, Iris	1st Class Honours in Chemistry
Covington, Arthur Edwin	1st Class Honours in Mathematics and Physics
Cowan, Phyllis L.	1st Class Honours in Latin and French
Dale, Dorothy Ursula	1st Class Honours in Biology (Zoology option)
Davidson, Esther Jane	1st Class Honours in French
Dickie, Alfred Gordon	2nd Class Honours in Philosophy and Psychology (Philosophy Division)
Fitch, Fred Troop	2nd Class Honours in Chemistry
Galpin, Richard Robertson	2nd Class Honours in Bacteriology and Preventive Medicine
Gibson, Eleanor Margaret Goodwin	1st Class Honours in English Language and Literature
Gray, Helen Wodehouse	2nd Class Honours in Bacteriology and Preventive Medicine
Gwyn, Agnes Margaret	2nd Class Honours in Biology (Zoology option)

THE DEGREE OF BACHELOR OF ARTS—(Continued)

Higashi, Peter Shinobu	2nd Class Honours in English Language and Literature
Higashi, Yoshimitsu	1st Class Honours in French
Idyll, Clarence Purvis	1st Class Honours in Biology (Zoology option)
Kerr, Edna Lillian	1st Class Honours in Mathematics
Lacey, Oliver Lilburn	1st Class Honours in Philosophy and Psychology (Psychology Division)
Lake, Albert Charles	1st Class Honours in English Language and Literature
Latornell, Maurice Coupland	2nd Class Honours in Latin
Laycock, Gladys Andrée	2nd Class Honours in Chemistry
Lintott, Elspeth Mary	1st Class Honours in Mathematics
Lips, Alair	2nd Class Honours in Chemistry
Makinen, Sadie	1st Class Honours in French
Martyn, James Robert	2nd Class Honours in Chemistry
Matheson, Kathleen Florence	1st Class Honours in French
Moran, Frances Marion	1st Class Honours in Mathematics
Morrison, Roy Buckley	2nd Class Honours in History
Munro, Donald Fenton	1st Class Honours in French
McDermott, Margot Christina	2nd Class Honours in History
Paine, Paul Britton	1st Class Honours in Economics and Political Science
Retallack, James Gordon	1st Class Honours in Mathematics and Physics
Rothstein, Ascr	1st Class Honours in Biology (Zoology option)
Schroeder, Agnes	2nd Class Honours in Chemistry
Shaw, Phyllis	1st Class Honours in Mathematics
Shimizu, Kunio	2nd Class Honours in Mathematics and Physics
Smith, Mary Inez	1st Class Honours in Mathematics
Tamaki, George Takakazu	1st Class Honours in Economics and Political Science
Todd, Marjorie Doreen	1st Class Honours in Bacteriology and Preventive Medicine
Walsh, George Charles	1st Class Honours in Chemistry
Wright, John Bell	1st Class Honours in Mathematics

Completed Honour Standing

Rogers, Edward de Lancy, B.A.	1st Class Honours in Mathematics
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*Completed General Course in Preparation for Honours**(Names in alphabetical order in each class)**Class I*

Sibley, Norah MacL.

Class II

Dickie, Clymene L.

Rice, Margaretta G. apR.

THE DEGREE OF BACHELOR OF ARTS

*General Course**(Names in alphabetical order in each class)**Class I*Ennals, Bernard F.
Fleury, John W. A.Sager, Arthur H.
Wallace, Lawrence J.

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Class II

Abbott, Harley D.	Kempton, H. Jean
Anderson, F. Rae	Kirk, David K.
Armstrong, Mary K.	Kirkby, Alan G.
Bailey, Stanley J.	Leslie, Elizabeth C.
Beveridge, James A.	Lopatecki, Eugene L.
Blackbourne, Audrey C.	Lyons, Harold E.
Bonnell, Jean McL.	Matheson, Frances M.
Braidwood, M. Ailsa	Meredith, Jean
Brunton, Fred M.	Mitchell, William H.
Carey, David E.	McCulloch, Mary A.
Clarke, Ena C.	McDiarmid, Ian H.
Clarke, Waldo J. G.	Macdonald, James A.
Cobain, James	Macdonald, Margie B.
Croll, Alan S.	McDonald, Mary H.
Cruise, Florence I.	MacDonald, Wilfred J.
Curtis, L. Colin	McGechaen, John
Davie, Doreen F.	McLachlan, Irene B.
Dawe, Arthur P.	McLeod, Jean M.
Edmonds, W. H. Kemp	Oldham, Ronald
Elliott, Gilbert H.	Oliver, Warrenna N.
Ferguson, Jean A.	O'Neil, Margaret A.
Fotheringham, A. M.	Peacock, May
Fox, Margaret MacL.	Rendell, Mary D.
Gaitskell, Charles D.	Richardson, Jack E.
Gibbon, Hilda L.	Robson, C. George
Gow, Mildred B.	Shewan, Agnes
Gregory, George F. T.	Stangland, Elsie D.
Gurney, William H.	Still, Lois M.
Harris, Ernest A.	Stuart, John R. A.
Harvey, Margaret J.	Thompson, Callum
Hicks, Regis A.	Thomson, Nan L.
Hind, F. Ruth	Trafford, Phyllis H.
Hind, Ian G.	Tuckey, Elizabeth U. T.
Hogarth, David M.	Webster, Kathleen
Holdom, Mary W.	Wilby, Elsie L.
Jones, Betty A.	Williams, Jesse J.
Karsgaard, Andrew T.	

Passed

Balderston, Wilfred R.	Douglas, Beverly B.
Bingay, Elizabeth G.	Gibson, Mary G.
Black, Mary S.	Gillanders, Elizabeth M.
Boving, Ellen M.	Gilmour, Louise-Mary
Boyd, Lillian	Gray, Hyslop B.
Boyd, Priscilla A.	Gray, Myrle A.
Bradshaw, Mary G.	Harkness, Douglas B.
Bramwell, Clarence H.	Heather, Jessie M.
Brooks, Barbara	Irwin, Mary I.
Carter, Catherine L.	Jones, Margaret L.
Charters, Alexander N.	Lafon, Patsy
Craig, E. Mary	Lea, Norman S.
Crosby, Helen L.	Leung, So Won
Cunningham, Beverley K.	Lew, Fern M.
Davis, George E.	Li, Ting K.
DeBeck, Ward F.	Lighthall, George E.

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Passed—(Continued)

Lowe, George	Rac, L. Margaret H.
Madeley, Samuel T.	Shaffer, Marion A.
Martin, Margot J.	Snyder, Fronia E.
Mentions, Carol E.	Spencer, David
Miller, Cathalin I.	Thomson, Grace E.
Morrison, Archibald O.	Tremaine, William S.
Macdonald, Margaret J.	Tufts, Olive St. C.
McKean, Phyllis I.	Washington, Catherine
McKenzie, Margaret G.	Wilson, Georgiana L. M.
McLaren, Wendall H.	Wilson, Mollie W.
McLean, Cynthia	Winram, Lois M.
McLellan, Robert B.	Wismer, Robert G.
McRae, Margaret C.	Zotov, Gennady
Porter, June	

Passed Unranked

Bawden, Rosemary J.	Kato, T. David
Bell, Raymond C.	Mead, Bruce R.
Campbell, Charles McK.	McCullough, Gordon H.
Capelle, Pauline M. A.	Nelson, Emily L.
Caspell, Edmund V.	Porter, Margaret C.
Cloke, William A.	Scott, John D. B.
Custance, John P.	Shoyama, Kunito Thomas
Elfstrom, Roy H.	Waddington, Lionel C.
Grant, Marion R.	Wong, Quon Hipp
Jones, Frank R. R.	Wright, Maurice M.

THE DEGREE OF BACHELOR OF COMMERCE

*With Honours**(Names in alphabetical order in each class)**Class I*

Chapman, Arthur E.	Knox, Charles J.
Iwasaki, Hideo	Shoyama, Kunito T.

Class II

Clark, Robert S.	Lewis, David A.
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*General Course**(Names in alphabetical order in each class)**Class II*

Andrews, Ronald C.	Lightstone, Lyon
Craster, Charles R.	Whitelaw, John C.
Gordon, Bruce M.	

Passed

Bird, John I.	Michell, Jack S.
Davie, Alastair S.	Miller, Edward H. C.
Denby, Gerald S.	McCallum, Elizabeth A.
Hall, Joan F.	McMillan, John
Hudson, J. William	Porter, Margaret C.
Jessup, Marjorie	Robson, Clifford A.
Kato, T. David	Shiles, George M.
Kersey, Marion I.	Stevenson, Ben. R.
Koren, William F.	Wong, Quon H.

THE DEGREE OF BACHELOR OF COMMERCE—(Continued)

Passed Unranked

Charlton, Frederick W.

Wainwright, William J. S.

Faculty of Applied Science

THE DEGREE OF MASTER OF APPLIED SCIENCE

(Names in alphabetical order)

Dayton, William Arthur, B.A.Sc. Major: Metallurgy
 Minor: Geology

Thesis: "Research on Wisconsin Ore."

Ferguson, Donald Richard, B.A.Sc. Major: Metallurgy
 Minor: Geology

Thesis: "Research on Wisconsin Ore."

Gould, Leslie Robert, B.A.Sc. Major: Chemistry
 Minor: Physics

Thesis: "The Heats of Combustion of the Cis and Trans Isomers of Decahydronaphthalene."

Gwyn, Gerald Hamond, B.A.Sc. Major: Metallurgy
 Minor: Geology

Thesis: "Research on New Frothing Agents."

Morris, William Matthews, B.A.Sc. Major: Chemistry
 Minor: Physics

Thesis: "The Density and Transition-Points of Dicetyl."

Nemetz, Herman, B.A.Sc. Major: Chemistry
 Minor: Physics

Thesis: "The Vapour Pressures of the Cis and Trans Isomers of Decahydronaphthalene."

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

*With Honours***Chemical Engineering**

Bell, Raymond C.

Wright, Maurice M.

Davenport, Charles H.

Electrical Engineering

Robinson, Robert C.

Staniforth, Alan B.

Forest Engineering

Anderson, A. B.

Geological Engineering

McCammon, James W.

Mechanical Engineering

Hargreaves, George

THE DEGREE OF BACHELOR OF APPLIED SCIENCE

*(Names in alphabetical order in each class)***Chemical Engineering***Class I*

Henniker, C. John C.

Pearce, Rex F.

Light, John G.

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—CHEMICAL ENGINEERING—
(Continued)

Class II

Davies, George F.
Harris, Jack E.
Machin, Laurence E.

Newmarch, Oliver H.
Potter, Charles
Yatabe, Eiji

Civil Engineering

Class II

Bremner, Thomas S.
Kendrick, John S.

Ramsden, Henry T.

Passed

Bentall, H. Clark
Brown, P. Anthony P.

English, John M.

Electrical Engineering

Class I

Gray, Laurence F.

Class II

Deshaw, Bernard F.
Kolisnek, Fred T.
Pebbles, Robert M.

Smith, Paul D.
Uretzky, Abe
Wighton, James J.

Passed

Dunlop, Norman J.
Radcliffe, John H.

Shelling, Louis

Forest Engineering

Class II

Benton, John H.
Hall, Ernest W.

Vine, C. A. Lyall

Geological Engineering

Class II

Killin, Alan F.

Lammers, Walter A.

Mechanical Engineering

Class II

Boyce, William J.
Hogg, J. Donald

Snelling, Gordon A.

Metallurgical Engineering

Class II

Adair, Irvine J.
Church, Thomas G.
Elfstrom, Roy H.

Love, Patrick C.
Lyle, Alfred G.

Mining Engineering

Class II

Boisjoli, Gerard J.
Buckham, Thomas
Little, Heward W.

Scott, John W.
Taylor, Walter N.

Passed

Campbell, Charles McK.
Hall, James Z. G.
Lee, Daniel L.

Smith, William J.
Upward, Ronald A.

THE DEGREE OF BACHELOR OF APPLIED SCIENCE—(Continued)

Nursing and Health
(Names in order of merit)

Class I

Martin, Alice E. MacL.

Class II

Black, Mary K.
Leitch, Donna A.
Mouat, M. Robina

Scouler, Phyllis D. }
Taylor, Kathleen } equal
Leitch, Asenath J. }

Faculty of Agriculture

THE DEGREE OF MASTER OF SCIENCE IN AGRICULTURE

(Names in alphabetical order)

Conferring the Degree of Master of Science in Agriculture

O'Neil, James Burton, B.S.A. Major: Poultry Husbandry
Minor: Plant Nutrition

Thesis: "A Statistical Study of Chick Bioassays with Vitamin D."

Smith, Laurence Samuel, B.S.A. Major: Plant Nutrition
Minor: Botany

Thesis: "Calcium-Phosphorus Relationship in Canning-Peas."

Wood, Alexander James, B.S.A. Major: Dairying
Minor: Agronomy

Thesis: "A Study on the Metabolism of the Lactic Acid Bacteria."

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

(Names in alphabetical order in each class)

Class I

Hatcher, Gilbert T.
McTaggart-Cowan, Joan

Pendray, Wilfred C.
Welsh, Maurice F.

Class II

Bowering, Gerald H.
Brock, Philip H. G.
Campbell, James A.
Fennell, Edwin J.
Hockin, Neil W.
Kerr, Donald G.
Louie, Tong

Mellor, Frances C.
Miller, George M.
Morgan, Cecil V. G.
Ozard, W. Harvey
Robinson, Ross L.
Trussell, Paul W.

Passed

Crickmay, Peter W. H.

Nicoll, Russell E.

DEGREES CONFERRED

OCTOBER, 1938

Faculty of Arts and Science

THE DEGREE OF MASTER OF ARTS

(Names in alphabetical order)

Agnew, William Noel, B.A. Major: French
Minor: Psychology

Thesis: "Fontenelle et la sociologie moderne."

THE DEGREE OF MASTER OF ARTS—(Continued)

Blackaller, David William, B.A.	Major: Philosophy Minor: English
Thesis: "The Significance of 'Maya' in Indian Thought."	
Clark, Norman, B.A.	Major: Philosophy Minor: Education
Thesis: "An Experiment in Teaching General Science."	
Grant, Louis Seymour, B.A.	Major: History Minor: Philosophy
Thesis: "Fort Hall on the Oregon Trail."	
Hards, Albert Arthur, B.A.	Major: French Minor: Philosophy
Thesis: "L'actualité des idées de Montaigne."	
Hulley, Clarence Charles, B.A.	Major: History Minor: English
Thesis: "Anglo-Saxon Institutions, 450-900 A.D."	
Kennedy, Mervyn Ewart, B.A.	Major: History Minor: Education
Thesis: "The History of Presbyterianism in British Columbia, 1861-1935."	
Lowe, Shirley Ronald Henry, B.A.	Major: Latin Minor: Greek
Thesis: "Roman Agriculture as Depicted by Cato, Varro and Vergil."	
Quayle, Daniel Branch, B.A.	Major: Zoology Minor: Botany
Thesis: "A Study of the Sexuality and Gonad Development of the little neck clam, <i>Paphia staminea</i> Conrad."	
Russell, Elphinstone Mather, B.A.	Major: Latin Minor: Education
Thesis: "A Historical Sketch of Roman Law."	

THE DEGREE OF BACHELOR OF ARTS

With Honours

Bishop, Roger Joseph	First Class Honours in English Language and Literature
Gillen, James Lamont	First Class Honours in Philosophy and Psychology
MacLaurin, Jean Campbell	First Class Honours in English and History
Stirling, William Lang	First Class Honours in History and French

Completed Honours Standing

Dickie, Clymene Lillas	First Class Honours in French
Rice, Margaretta Gwennllian ap Rhys, B.A.	Second Class Honours in English and French

THE DEGREE OF BACHELOR OF ARTS

General Course

(Names in each class in alphabetical order)

Class I

Curtis, Alden S.	Lane, Mary Winnifred
Harwood, Norris	Weatherbee, Ava Ryetta

THE DEGREE OF BACHELOR OF ARTS—GENERAL COURSE—(Continued)

Class II

Boyd, Ian D.
 Collins, Margaret L.
 Dickinson, Annie E.
 Farquhar, Hugh E.
 Harper, John A.
 Heywood, Robert H.
 Hockridge, C. Murray
 Houston, William F.
 Hudson, William O.
 Jost, Audrey E.

Kipling, Rudyard T.
 Lindsay, Thomas
 Locke, Charles C.
 Margetts, Philip G.
 McCormick, Robert A.
 Reid, James
 Robinson, Alexander F.
 Ruddell, Clifford T. O.
 Scott, Ivor E.
 Seaton, Jean M.

Passed

Barclay, Walter J.
 Charlton, John W.
 Clark, Gordon A.
 Disher, Edward W.
 Elliott, Willa J.
 Gillander, Morley G.
 Hayden, Frank S.
 Hutton, Barbara J.
 Law, Alison M.
 Longfellow, Morva J.
 Millar, W. Bruce MacD.

Muttitt, Gordon H.
 Robertson, Charles E.
 Ross, Jack E.
 Sellar, Euphemia McL.
 Smith, Harry
 Steuart, William A.
 Takahashi, Yukio
 Takimoto, A. Shinichi
 Webber, Olga M.
 Wright, Hazel

Passed Unranked

Campbell, William J.
 Fletcher, Bruce

Patton, Marion McC.
 Sprinkling, Ransford G.

THE DEGREE OF BACHELOR OF COMMERCE

*(Names in alphabetical order)**With Honours**Class II*

Walden, Franklin E.

*General Course**Passed*

Charlton, John W.

Heron, Gordon L.

Faculty of Applied Science

THE DEGREE OF MASTER OF APPLIED SCIENCE

(Names in alphabetical order)

Bennett, Robert Loughheed, B.A.Sc. Major: Chemistry
 Minor: Physics

Thesis: "The Surface Chemistry of Floatation."

Freedman, Harry Charles, B.A.Sc. Major: Electrical
 Engineering
 Minor: Physics

Thesis: "An Analysis of the Multivibrator Circuit."

THE DEGREE OF BACHELOR OF APPLIED SCIENCE
(Names in alphabetical order)

Chemical Engineering

Passed

Moore, Thomas Geddes, B.A.

Electrical Engineering

Passed

Campbell, Royden MacDougall Cloke, William Arthur, B.A.

Geological Engineering

Passed

Hoadley, John William

Faculty of Agriculture

THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

(Names in alphabetical order)

Passed

Chang, Gan
Hill, Lawrence E.
Jack, Elsie W.

Pan, Vadim O.
Rogozinsky, Anna A.

MEDALS, SCHOLARSHIPS, PRIZES AND BURSARIES

AWARDED MAY, 1938

MEDALS

The Governor-General's Gold Medal (Head of Graduating Class for the B.A. Degree).....	Alfred E. Carter
The Kiwanis Club Gold Medal (Commerce).....	Charles J. Knox
The United Empire Loyalists' Association Medal (History)	Donald E. McTaggart
The Lefevre Gold Medal and Scholarship (Chemistry).....	Charles H. Davenport

SCHOLARSHIPS FOR GRADUATES

University Graduate Scholarship, \$200.00.....	Oliver L. Lacey
The Anne Westbrook Scholarship, \$125.00.....	John Bell Wright
The Dr. F. J. Nicholson Scholarships—	

- | | |
|---------------------------------|----------------------------|
| 1. For Chemistry, \$500.00..... | William M. Morris, B.A.Sc. |
| 2. For Geology, \$500.00..... | James W. McCammon |

French Government Awards which are made through the University by the French Consul for Western Canada—

The French Government Scholarship (10,000 francs)

Lloyd H. Hobden, B.A.

The French Government Medal (French)..... Alfred E. Carter

The French Government Book Prize (French)..... Yoshimitsu Higashi

The Native Daughters of Canada Scholarship, \$50.00—

(Early B. C. History)..... Arthur J. Wirick, B.A.

The B'nai B'rith District No. 4 Hillel Foundation Scholarships, \$125.00 each—

1. Morris Bloom, B.A.
2. Herman Nemetz, B.A.Sc.

SCHOLARSHIPS FOR UNDERGRADUATES

I. IN ALL FACULTIES

University Great War Scholarships (First Year), \$223.00—

1. Roy Ellis Selby.
2. Harry Rich Bell.

II. IN ARTS AND SCIENCE

Third Year

University Scholarships in Arts and Science (General Proficiency), \$173.00—

Group A—Theodore D. Newton.

Group B—Clara E. Cartmell.

N. Leo Klein Memorial Scholarship (General Proficiency, Commerce), \$100.00—

John H. Doughty

Vancouver Women's Canadian Club Scholarship (First in Canadian History), \$100.00.....

Donald E. McTaggart

The John and Annie Southcott Memorial Scholarship, \$100.00—

(B. C. History)..... R. Norman Beattie

Second Year

University Scholarships in Arts and Science (General Proficiency), \$173.00—

1. Margaret K. Thompson, by reversion to Eileen R. Keel.

2. Eileen R. Keel, by reversion to James B. Brown.

The Shaw Memorial Scholarship (First in Two of English, Latin and Greek), \$125.00.....

L. Roberta Wilson (English and Latin)

SCHOLARSHIPS FOR UNDERGRADUATES—(Continued)

- The McGill Graduates Scholarship (First in English and French), \$125.00—
Elizabeth Stewart
The Terminal City Club Memorial Scholarship (First in English and
Economics), \$100.00.....Nora Ryan
The I. O. D. E. Scott Memorial Scholarship (First in Biology), \$100.00—
Frederick H. C. Taylor

First Year

- Royal Institution Scholarship (General Proficiency), \$223.00.....Stuart D. Cavers
University Scholarships in Arts and Science (General Proficiency), \$173.00—
1. Edith M. Browne.
2. Robert M. Clark.
The Beverley Cayley Scholarship (First Male Student in English), \$100.00—
Douglas Bastin
The Ahepa Scholarship (Proficiency in Greek), \$75.00.....Phyllis L. Cowan

III. IN APPLIED SCIENCE

- Vancouver Women's Canadian Club Scholarship in Nursing and Health,
\$100.00.....Emily Louise Nelson
The Dunsmuir Scholarship (Highest in Mining Engineering, proceeding to
the Fifth Year), \$150.00.....John W. Young
University Scholarship in Applied Science (General Proficiency, proceeding
to the Fourth Year), \$223.00.....John D. Leslie
Royal Institution Scholarship in Applied Science (General Proficiency, pro-
ceeding to the Third Year), \$223.00.....Charles V. Ryder
The G. M. Dawson Scholarship (Highest in Geological Engineering—Geologi-
cal Subjects, proceeding to the Fifth Year), \$50.00.....Alfred R. Allen
The B'nai B'rith Auxiliary No. 77 Scholarship (Highest in Chemical Engineer-
ing, proceeding to the Fifth Year), \$50.00.....Edwin W. Rowbotham

IV. IN AGRICULTURE

- University Scholarship in Agriculture (General Proficiency, proceeding to the
Second Year), \$173.00.....Patricia Cumming
The David Thom Scholarship (General Proficiency, proceeding to the Third
Year), \$100.00.....Winifred J. McBride

PRIZES

I. IN ALL FACULTIES

- The University Essay Prize (Books), \$25.00—
Robert apRoberts—"The Dumb Show in 'Hamlet'"
The Players' Club Prize (Original Play), \$50.00—No award.

II. IN ARTS AND SCIENCE

- The John Marr Memorial Prize, \$25.00—No award.
The University of British Columbia Graduate Historical Society Prize
(Books), \$25.00—No award.
H. Nemichi Prize, \$50.00—
James L. Colbert—"Population Problems of Japan since 1861"

III. IN APPLIED SCIENCE

- The Convocation Prize (General Proficiency in Fifth Year), \$50.00—
Charles H. Davenport
The Walter Moberly Memorial Prize (Engineering Thesis in Fifth Year)
(Books), \$25.00.....Maurice M. Wright—"Polymer Gasoline"

SCHOLARSHIPS FOR UNDERGRADUATES—(Continued)

The Association of Professional Engineers' Prizes (Books), \$25.00 each—

1. John G. MacDermot—Chemical Engineering—"The Manufacture of Phosphoric Acid and Phosphatic Fertilizers by The Consolidated Mining and Smelting Company of Canada at Warfield, B. C."
2. Sherwood D. Ford—Civil Engineering—"Mining Method at Victoria Mine, Britannia Beach."
3. W. Laurence Garvie—Electrical Engineering—"The Geology of the Hope Area."
4. Donald A. Stewart—Mechanical Engineering—"The Munro Ball-Forming Plant."
5. John W. Stewart—Mining Engineering—"Methods of Waste Filling and Pillar Mining and Their Applications to the Sullivan Mine."

The Engineering Institute of Canada Prize (Fourth Year), \$25.00—

Arthur L. Sutton

The Provincial Board of Health Prizes in Public Health Nursing, \$100.00—

1. Alice E. MacL. Martin, \$30.00.
2. J. Alice Beattie, \$20.00.
3. Anna V. Larson, \$20.00.
4. Violet M. Porter, \$20.00.
5. Mary K. Black, \$10.00.

BURSARIES

The Captain LeRoy Memorial Bursary (preference to returned soldiers or dependents), \$250.00.....Margaret K. Thompson

The Khaki University and Y. M. C. A. Memorial Fund Bursaries, \$100.00 each—

(In Alphabetical Order)

- | | |
|---------------------------|-----------------------|
| 1. Nesta A. Carter. | 6. Charles W. Nash |
| 2. John Cochran. | 7. Eric Nicol. |
| 3. Norman Coleopy. | 8. James M. Pepper. |
| 4. Florence T. Jamieson. | 9. Jack T. Rush. |
| 5. Richard A. Montgomery. | 10. John B. Thwaites. |

The University Women's Club Bursary, \$100.00.....Faith Grigsby

THE FOLLOWING AWARD IS ANNOUNCED BY SENATE

The Rhodes ScholarshipDavid Edward Carey

AWARDED AFTER THE MAY CONGREGATION

Senior Matriculation Royal Institution and University Scholarships:

Provincial, \$175.00	Grace Irene Cuthbert
\$175.00	Janet Winifred Lock
\$175.00	Gertrude Lillian Nelson
\$175.00	Donald Ellis McLellan
\$175.00	Eleanor Isobel French
Special, \$175.00	Albert Desmond Turner

Junior Matriculation Royal Institution and University Scholarships:

Provincial—\$175.00	Robert Mack Lane	} Equal
(Special—\$175.00)	John Malcolm Russell Margeson	
District 1—\$175.00	Harry Keith Ralston	
\$175.00	Beverley Rosalene Matthew	

AWARDED AFTER THE MAY CONGREGATION—(Continued)

District 2—\$175.00	Irene Sarina Steeves	
\$175.00	Maxwell Patrick Sweeney	
District 3—\$175.00	Edward Gross	
\$175.00	Elsbeth Campbell Munro	
District 4—\$175.00	Anne Barbara Underhill	
\$175.00	Betty Helen Morton	
District 5—\$175.00	Ernest Alfred Boxall	
\$175.00	Thomas Arthur Horsley	
	by reversion to James Heath Collyer	
District 6—\$175.00	Betty Helen Corbould	
	by reversion to Florence Isobel McEachern	
\$175.00	Paul Lim Yuen	
District 7—\$175.00	Edward Austin Bourne	
\$175.00	Rebecca Lorine Good	
	by reversion to Edward Benson	
The Summer Session Students' Association Scholarship, \$30.00—	William Lawrence Bazeley	
The British Columbia Teachers' Federation Scholarship, \$50.00—	Ray Gillies Williston	
University Scholarship in Nursing and Health, \$173.00	Lucille Giovando	
The Phil Wilson Forestry Scholarship, \$225.00—No award.		
Special Scholarship, \$50.00 (B'nai B'rith Auxiliary No. 77)	George W. Govier	
The American Woman's Club Bursary, \$140.00	Elsie Eileen Hooley	
The Inter-Sorority Alumnae Club Bursary, \$150.00	Brita H. Vesterback	
The Mildred Brock Memorial Bursary, \$75.00	Norah McL. Sibley	
The Frances Milburn Bursary, \$150.00	Allisen McCallem	
The William MacKenzie Swan Memorial Bursary, \$250.00—	Jack Davis	} Equal
	William Laurence Garvie	
The Lady Laurier Club Bursary, \$50.00	Phyllis L. Cowan	
The Alliance Francaise Bursary, \$50.00	Allisen McCallem	
The David Thom Bursaries—		
\$100	Nora Neilson	} Equal
	James Cuthbert	
	Robert Mylroie	
\$75.00	Garrett M. Cook	} Equal
	Douglas K. Taylor	
\$60.00	Phyllis Mitchell	} Equal
	Anson McKim	

1939-40

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY SUMMER SESSION, 1940

Seven Weeks—July 3rd to August 17th

The Announcement of the courses to be offered in a Summer Session will be issued in January if possible.

No course may be offered for which there are fewer than eight registrations. Students, therefore, desiring any courses, particularly Third and Fourth Year courses, are requested to advise the Director of the Summer Session as early as possible and not later than May 15 as to the courses desired. If the demand for these courses seems adequate, an effort will be made to offer them.

The regulations, etc., governing the Summer Session, the Directed Reading Courses and the Extra-session classes follow:

COURSES LEADING TO THE DEGREE OF B.A.

1. The degree of B.A. will be granted on completion of courses amounting to 60 units chosen in conformity with Calendar regulations. (See pages 63-171.)

2. Candidates for the degree are advised to attend at least one Winter Session, preferably that of the Fourth Year.

3. The maximum credit for Summer Session work in any one Calendar year is six units.

4. Courses of private reading will be open to Summer Session students in the same way as to Winter Session students (see page 70), but only to those students who are proceeding to a B.A. degree at this University (except as at present to M.A. candidates).

5. Directed Reading Courses will be offered mainly for students not in attendance. The following regulations pertain to these courses:

(a) A minimum registration of twenty is required.

(b) An applicant for a Directed Reading Course (1) must be at least 18 years of age; (2) must qualify for registration at least as a Second Year student (full undergraduate or conditioned), or must hold a Normal School diploma; and (3) must have completed the course pre-requisite for the Directed Reading Course for which he is applying.

(c) The final examinations will be held at the University.

(d) If the Directed Reading Course is one on which there is a sessional examination in April, the student may either write this

sessional examination in April or the Directed Reading Course examination at the opening of the Summer Session in July, otherwise in July only.

(e) No Directed Reading Course may be taken for undergraduate credit concurrently with an Extra-session Course, nor with a course of private reading as outlined on page 78, except by special permission of Faculty.

(f) Not more than one Directed Reading Course may be taken during the academic year.

6. Extra-session classes to be held at the University may be arranged, and, if so, may be taken for credit by students proceeding to the B.A. degree, who are at least 18 years of age, who are qualified for registration as Second Year students (Full Undergraduate or Conditioned), or who hold Normal School diplomas, and who have the pre-requisite standing.

7. The maximum credit for work other than that of the regular Summer and Winter Sessions may not exceed 15 units subsequent to Senior Matriculation or First Year Arts, nor 3 units in any one academic year.

8. Extra-mural work done at other universities prior to registration at this University may be accepted if approved by Faculty, but may not exceed the total number of units of credit obtainable at this University without attendance at either Winter or Summer Session.

9. If credit is granted for extra-mural work taken elsewhere, the total amount of work which the student concerned may take at this University without attendance at a Winter or Summer Session will be correspondingly reduced.

10. No credit will be granted for extra-mural work done at other universities in the same academic year in which any work has been attempted at this University, whether in the Summer Session or in the Winter Session or by Reading Courses or Extra-session classes.

Courses which count towards an Honours B.A. degree or the M.A. degree in the Winter Session will be allowed equivalent credit in the Summer Session.

REGISTRATION AND ATTENDANCE

1. *Students are required to register on or before the opening day of the session. A fee of two dollars (\$2.00) will be charged for late registration.*

2. All students desiring to obtain formal credit for work done in the Summer Session must, upon entrance, present evidence of Junior Matriculation standing of this Province, or its equivalent.

3. Summer Session students shall be registered as follows:

Students proceeding to a degree in due course whose Full Junior Matriculation standing has been approved shall register as *First Year* students until they have completed the 15 units of work prescribed by the Calendar.

Students proceeding to a degree in due course with Full First Year standing shall register as *Second Year* students until they have completed the Second Year in conformity with Calendar regulations.

Those students only may register as *Third* or *Fourth Year* students who have completed the work of the previous years in accordance with Calendar regulations.

Students who do not come under one of these classes shall register as *Partial* students.

4. Students must attend regularly the classes in a course for which they register. Those whose unexcused absences from such a course exceed one-eighth of its total number of meetings will not be credited with attendance in that course.

FEEES

For statement of fees, see page 41.

EXAMINATIONS AND ADVANCEMENT

1. Summer Session examinations are held at the close of the Summer Session. Students attending Extra-session classes will be tested by the ordinary Winter Session examinations.

2. The passing mark on each paper is 50 per cent. Credit, however, will not be granted for any part of a course until the whole course has been completed. Part courses in different subjects may not be combined.

3. In any course which involves both laboratory work and written examinations, students may be debarred from examination if they fail to present satisfactory results in laboratory work, and they will be required to pass in both parts of the course.

4. Supplemental examinations may be granted by Faculty to students attending the Summer Session or the Extra-session classes in the subject or subjects in which they have failed, but a student obtaining less than 30 per cent. in a subject will not be granted a supplemental in that subject.

CANADIAN OFFICERS' TRAINING CORPS

The University of British Columbia Contingent, Canadian Officers' Training Corps, provides University students with the opportunity of obtaining War Office certificates of qualification as officers in the Canadian Militia and other Empire Forces. This is the only means by which qualification can be obtained without first being appointed a provisional officer in a Militia unit.

Students wishing to enter the Permanent Active Militia—including Cavalry, Artillery, Engineers, Corps of Signals, Infantry, the Royal Canadian Air Force, Commercial Flying or the British Colonial Service, will find it advantageous to take the training offered by the Officers' Training Corps.

The contingent is a unit of the Active Militia, but is governed by special regulations under which it cannot be called out as a unit for active service.

General supervision over the activities of the corps is exercised by a Committee of Military Education appointed by the Senate of the University. This Committee consists of the Chancellor, the President, the Commanding Officer, the Dean of the Faculty of Arts and Science, the Dean of the Faculty of Applied Science and the President of the Alma Mater Society. The Commanding Officer and officers of the Corps are selected from the teaching staff and students of the University. Assistance in the work of the Corps is given by members of the Permanent Militia of Canada.

The cadets are prepared for the examinations for Certificates "A" and "B" set by the War Office for all contingents of the Officers' Training Corps throughout the Empire. Certificate "A" qualifies its holder for the rank of Lieutenant, Certificate "B" for the rank of Captain, not only in the non-permanent Active Militia of Canada, but in the volunteer forces anywhere within the Empire.

Lectures and miniature range practices are given at the University throughout the session. Parades are held in the Armoury of the Seaforth Highlanders of Canada. Hours for this work are arranged so as not to interfere with the academic work of the University, or with student activities.

A short camp is held annually at Victoria during the Christmas vacation period.

Members of the Corps who are pursuing a course in Applied Science are eligible for Provisional Pilot Officer Training held annually at Camp Borden, and for training with the Royal Canadian Corps of Signals. All cadets, in possession of "A" Certificate, are eligible for Small Arms School "A" and "B" Wings. These courses are held during the summer vacation.

The following officers are on the strength of the contingent:—

Commanding Officer, Lieut.-Col. G. M. Shrum, M.M.

Second in Command, Lieut. P. R. Layard.

Adjutant, Lieut. A. G. Dickie.

Medical Officer, Major G. A. Lamont, E.D., R.C.A.M.C.

“A” COMPANY

Officer in Command, “A” Company, Lieut. D. C. Holland.

Platoon Commanders, Lieut. C. E. Hand, Lieut. F. B. Jones.

“B” COMPANY

Officer in Command, “B” Company, Lieut. A. P. Morley.

Platoon Commanders, Lieut. F. P. Griffin, Second Lieut. A. E. Lock.

Supernumerary to Company, Second Lieut. R. F. S. Robertson.

Q.M.S.I. A. A. Smith, P.P.C.L.I. (I.C.) is attached to the unit for instructional and other duties.

Membership in the Corps includes:

(a) Rifle shooting, both miniature and service rifle, with prizes and eligibility to compete for places on the following teams:

Provincial Matches at Victoria, B. C.; Dominion Matches at Ottawa, Ont.; and National Rifle Association Matches at Bisley, England.

(b) Camp at Victoria during Christmas vacation.

(c) Annual C.O.T.C. Dance.

(d) Summer courses at Victoria and Calgary.

(e) Flying instruction at Camp Borden during summer.

(f) Signal instruction at Camp Borden during summer.

(g) Eligibility for appointments in Permanent Force, British Army, and British Colonial Service.

The miniature range is situated in the Arts Building.

Students who wish to make further enquiries about the work of the Corps may obtain additional information from any of the above-named officers, or by application at the C.O.T.C. Orderly Room, in the basement of the Arts Building.

STUDENT ORGANIZATION

Alma Mater Society

OFFICERS OF THE ALMA MATER SOCIETY

President: Carson McGuire.

Secretary: Gertrude Pitman.

Treasurer: Robert C. R. Smith.

In order that the activities of the student body may be effectively carried on, the Alma Mater Society has been organized, with a governing executive called the Students' Council. It is the duty of the Students' Council to control all the activities of the societies subsidiary to the Alma Mater Society.

Each student on admittance to the University automatically becomes a member of the Alma Mater Society. All student activities are regulated and questions of student discipline are controlled by the Students' Council. It consists of nine members, chosen from Junior and Senior Years. The members are elected by ballot at the close of the session preceding their term of office.

In order that the work may be carried on to the best advantage, considerable funds are necessary, and the Alma Mater fee of \$7.00, compulsory for all students, is designed to cover the expenses incurred. Added to this is a compulsory levy of \$3.00 to go towards the Stadium Grandstand Fund, and a fee of \$3.00 for a student "Pass" (to activities).

Students upon entering the University have an opportunity to take part in practically all lines of sport, as well as to participate in debating and public speaking, and various other activities which are more clearly indicated below. No student shall be allowed, however, during the session to take part in athletic competitions or games for any team or other organizations other than a University team without the consent in writing of the Men's or Women's Athletic Association duly approved by resolution of the Students' Council.

Publications Board

The Publications Board is best known from the "Handbook," the "Ubyyssey" and the "Totem," the College Annual. In the first of these an attempt is made to compile information valuable to the undergraduate. The "Ubyyssey," the College paper, is published twice a week. The members of the staff are students selected as a result of voluntary competition. The "Totem," which is published at the end of the spring term, summarizes the activities of the various classes and societies.

The Literary and Scientific Executive

The Literary and Scientific Executive co-ordinates the workings of its constituent Societies, which are indicated below:

In the Players' Club, those whose talents lie in the direction of the drama may find medium of expression.

The Musical Society, membership in which is granted as a result of competitive try-outs, consists of an orchestra and mixed chorus comprising about seventy students under professional leadership.

For those interested in public speaking and debating there are the Men's Parliamentary Forum, the Political Discussion Club, and the Women's Literary Forum.

The University Film Society makes regular showings of films supplied by the National Film Society of Canada, membership being open to all students.

The following clubs offer a field for discussion of engineering, intellectual, social and religious problems:

ENGINEERING

G. M. Dawson Geological Discussion Club, University Engineering Society, the American Institute of Electrical Engineers.

INTELLECTUAL PROBLEMS

The Letters Club, La Cercle Francais, La Canadienne, German Club, Historical Society, International Relations Club, Biological Discussion Club, the Art Club, the Chemistry Society, the Forestry Club, the Mathematics Club, the Physics Club, the Agriculture Discussion and Livestock Club, the Monro Pre-Medical Society, the Law Society, the University Branch of the B. C. Teachers' Federation, the Psychology Club.

SOCIAL CLUBS

Cosmopolitan Club, Japanese Students' Club, Chinese Students' Club.

RELIGIOUS CLUBS

The Students' Christian Movement, the Varsity Christian Union, the Menorah Society, the Newman Club.

Other Clubs of a musical and an entertaining nature are:

The University Orchestra, the Varsity Band, the Glee Club, and the Pep Club.

Women's Athletics

The Women's Athletic Association comprises all the women's athletic clubs of the University, the chief of which are herewith briefly described:

The Women's Basketball Club enters teams in the City League, and also competes for Dominion championships.

The Women's Swimming Club competes in a City League, and also against Victoria.

The Grass Hockey Club enters two teams in the Lower Mainland League and also plays challenge games.

The women may join the Badminton, Tennis, Golf and Outdoors Clubs, which are under the Men's Athletic Association.

Women's Gymnasium classes meet during morning hours, under a physical instructor.

Inter-class matches are arranged in basketball, badminton, archery, volleyball, swimming, etc., for which points are awarded, the winning class being the holders of the Chris. Spencer Cup for the ensuing year.

The Women's Big Block Club was organized to maintain a high standard of awards, and to act as an advisory board to incoming women students in relation to sport.

Men's Athletics

It is the endeavour of the Men's Athletic Directorate to foster student participation in some sport and to control athletic activities on the Campus to the best interest of the students and the University as a whole.

Sports that are under the jurisdiction of the Men's Athletic Directorate are as follows: Badminton, Basketball, Canadian Rugby, English Rugby, Golf, Grass Hockey, Ice Hockey, Ski-ing, Soccer, Swimming, Rowing, and Track.

The M. A. D. embraces a wide variety of athletic activities. It maintains them on a sound basis, as is evidenced by the interest shown on the part of the students.

The Men's Athletic Directorate is made up of: The President of the Men's Athletic Association, the President of the Alma Mater Society, two student members, two Faculty members, and Mr. M. L. Van Vliet.

The Association is also affiliated with the Western Canadian Intercollegiate Athletic Union. This Union is comprised of the Athletic Associations of the Universities of Manitoba, Saskatchewan, Alberta and British Columbia. Closer relationship among the Western Canadian Universities is established in this manner.

A certain scholastic standing is required of students wishing to represent the University on any team, and this is sufficiently high to ensure that scholastic achievement is not subordinated to athletic prowess. By doing this, athletics at the University are maintained on a sound and healthy level.

Detailed information may be obtained from the Student Handbook and from any of the executive of the above sports or the Men's Athletic Directorate.

Fraternities

Fraternities have existed at the University of British Columbia for some years and are officially recognized as active student organizations. They are governed by an Inter-fraternity Council composed of representatives of each of the fraternities and a member of the Faculty. It is their endeavour both to benefit through friendship their individual members, and to work for the best interests of the University. Membership is by invitation.

Sororities

Sororities, also, are officially recognized by Senate as active student organizations. The Women's Panhellenic Association is established to regulate all matters of common interest to the Sororities on the Campus, and to advise and foster sorority and inter-sorority relations. Membership in sororities is by invitation.

ALUMNI ASSOCIATION

OFFICERS OF THE ALUMNI ASSOCIATION

President: Kenneth M. Beckett, B.A.

Secretary: Alice M. Daniels, B.A.

Treasurer: Fred D. Bolton, B.A.Sc.

The Alumni Association of the University of British Columbia is composed of Honorary, Active and Associate members. Honorary membership includes all members of the Board of Governors and any honorary life members appointed by the Association from time to time. Active membership includes all Association members who have paid their annual fee of \$1.00 or a life membership fee of \$10.00. Associate membership includes all other graduates of the University.

The aims and objects of the Association are:

- (a) To bring about the unity of all graduates of the University of British Columbia and to further among them the spirit of friendship of undergraduate days;
- (b) To instill in all graduates of the University of British Columbia a feeling of loyalty to the University and a sense of responsibility for the continuance of the educational work of the University and for service to the public of British Columbia;
- (c) To support suitable undertakings for the facilitation of the work of the University or of education in general, and to co-operate with organizations with the same aims and objects;
- (d) To educate public opinion regarding the use and benefit of the University of British Columbia, and education in general;
- (e) To adopt a definite policy on any question directly or indirectly affecting the University of British Columbia, education in the Province of British Columbia or graduates of the University of British Columbia, or persons engaged in educational work in the Province of British Columbia.

The new Constitution of the Alumni Association has provided for a system of branches to be organized in any place where there are a sufficient number of University of British Columbia Alumni to make an active organization.

An Executive Council composed of a General Executive elected at the Annual Meeting, and appointed representatives from each organized branch, is the governing body of the Association. Through this Council each branch is kept in touch with the activities of the other branches, and is given a voice in the organization and operation of the Alumni Association as a whole.

Bulletins are sent out by the General Executive periodically to all active members.

The association magazine, called "The Graduate Chronicle," is issued each Spring and is sent to active members of the association.

Further information concerning the Association may be obtained through H. Bert Smith, 2796 West 30th Avenue, Vancouver, who is Records Secretary of the General Association, or through Miss M. Morrison of the Registrar's Department.

INTER-UNIVERSITY EXCHANGE OF UNDERGRADUATES

Through this plan the National Federation of Canadian University Students offers to Canadian students the opportunity to study for one year at a university in another part of Canada. The favored students, whose number must not exceed one per cent. of the total enrolment, are chosen by a Selection Committee from their own universities, and the university which the student selects for the year's study remits the fees for that year. The only prerequisite is that any student who desires to take advantage of this opportunity must have completed at least two years of study with at least second class standing in the second year, and must be an undergraduate below the final year. All applications must be in the hands of the Registrar on or before the first day of March. Further information may be obtained from the Registrar.

VICTORIA COLLEGE

VICTORIA, B. C.

(In Affiliation with the University of British Columbia)

Staff

- PERCY H. ELLIOTT, M.Sc. (McGill), Principal, Associate Professor of Science.
E. STANLEY FARR, B.A., LL.B. (Toronto), Assistant to Principal, Assistant Professor of History and Economics.
J. A. CUNNINGHAM, B.A. (Queen's), Registrar, Assistant Professor of Biology.
MISS JEANETTE A. CANN, B.L. (Dalhousie), Assistant Professor of English and Philosophy.
MISS H. RUTH HUMPHREY, B.A. (Mount Allison), M.A. (Oxon), Assistant Professor of English.
MME. E. SANDERSON-MONGIN, Officier d'Académie (France), Assistant Professor of French.
G. P. BLACK, M.A. (Man.), Assistant Professor of Classics.
E. J. SAVANNAH, A.B., S.B. (Calif.), Instructor in Chemistry.
ROBERT T. D. WALLACE, B.A. (Brit. Col.), Assistant Professor of Mathematics.
SYDNEY G. PETTIT, B.A. (Brit. Col.), Librarian and Instructor in History.
MISS RUTH E. FIELDS, B.A. (Brit. Col.), Assistant in Biology.
MISS DOROTHY M. CRUICKSHANK, B.A. (Brit. Col.), Assistant Registrar.

The College at Victoria, B. C., gives instruction in the first two years of the course in Arts and Science (including Commerce).

The courses offered are:

First and Second Years

The work of the first two years consists of 30 units, 15 of which must be taken in each year.

Each student must take:	Units
(a) English 1 in the First Year and English 2 in the Second Year	6
(b) The first two courses in a language offered for Matriculation, one course in each year.....	6
(c) Mathematics 1 in the First Year.....	3
(d) History 1 or 2 or 3 or 4, or Psychology 1, or Economics 1 or 2, or Social Science 1.....	3
(e) Biology 1, or Chemistry 1, or Physics A or 1.....	3
(f) Three courses, not already chosen, selected from the following: Biology 1, Chemistry 1, Chemistry 2, Economics 1, Economics 2, Economics 10, French 1, French 2, Greek A, Greek 2, History 1, History 2, History 3, History 4, †Beginners' Latin, Latin 1, Latin 2, Mathematics 2, Mathematics 3, Psychology 1, Physics A, Physics 1, Social Science 1, Zoology 1.....	9

The rules and regulations governing the College are the same as those in force at the University.

Information regarding Victoria College and Calendars of the College may be obtained on application to the Registrar, Victoria College, Victoria, B. C.

UNION COLLEGE OF BRITISH COLUMBIA

(United Church of Canada)

VANCOUVER, B. C.

(In Affiliation with The University of British Columbia)

Principal

THE REV. J. G. BROWN, M.A., D.D.

Union College offers courses of instruction in Theology leading to the degrees of B.D., and for ordination to the Christian Ministry, and, under the general regulations of the University with reference to affiliated Theological Colleges, provides Religious Knowledge options, for which credit is given in the course leading to the B.A. degree. (See page 74.)

For further information in reference to Faculty, Courses of Study, etc., see Calendar of Union College.

†Subject to Regulations "2," "3" and "4" of the Faculty of Arts and Science, The University of British Columbia.

**THE ANGLICAN THEOLOGICAL COLLEGE
OF BRITISH COLUMBIA**

VANCOUVER, B. C.

(Affiliated with The University of British Columbia, 1922)

Principal

REV. H. R. TRUMPOUR, M.A., B.D., D.D.

Registrar

REV. D. P. WATNEY, B.A., B.D.

The Anglican Theological College offers courses in Theology leading to the Diploma of Licentiate in Theology and the Degrees of B.D. and D.D., and, under the general regulations of the University in reference to affiliated colleges, provides Theological options, for which credit is given in the course leading to the B.A. degree. (See page 74.)

For further information in reference to Faculty, Courses of Study, etc., see Calendar of the College.